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THE TIGER COWRY, CYPRAEA TIGRIS L. 1758, ITS USES BY MAN - PAST AND PRESENT

Cowries have been found among the most prized possessions of primitive peoples all over the World. No other objects have been so widely revered. They have been found in Britain in prehistoric pit dwellings as well as in Palaeolithic graves at La Madelaine and other sites in France. These shells must have come from the Red Sea or further afield even. Such shells, found among the treasured possessions buried with the dead, provide clear evidence that the people of those ancient times were very widely travelled.

Two basic needs dominated the life of these early people; the need to find food and the need for children who would perpetuate them. Therefore an object which appeared to resemble a part of the human body could take on vital magical properties and powers. It isn't difficult to see how the first person to pick up a cowry saw in its round smooth shape, Fig. 19, a pregnant woman and in the form of its aperture, Fig. 20, a close resemblance to the sexual parts of a woman, Fig. 21, and to the opening through which a precious child entered the world and the fancied resemblance to childbirth as the animal emerged from that narrow mouth. From this obviously grew the idea that the cowry had the power of conferring fertility, would protect against sterility and increase sexual potency. It became the symbol of womanhood, the source of life, the parent of mankind, the dwelling place of the deity who made fertile both the woman and the crops and the murmur of whose voice could be heard when the shell was held up to the ear. Until recently cowry shells were hung near the reproductive organs, on aprons and girdles and were regarded as a suitable gift to be presented to girls when they reached puberty or when they married. Barren women would wear them in hope and pregnant ones in confidence. In the New Hebrides, until recently, they believed that the first woman came from a cowry shell. The cowry shell was worn by the women of Pompeii to prevent sterility and even today in the Rynkyu Islands a woman giving birth to a child holds a tiger cowry clenched in each hand to assure easy delivery.

There are other reasons for man wanting such objects; firstly it could be used to denote wealth, secondly it could be made into objects of everyday use, thirdly for food and lastly as an item of personal adornment mainly, as already stated, for procreative reasons. To start with wealth. The first people, so far as we know, to have used cowries as currency were the Chinese. Cowries have been found in Stone Age deposits as far inland as Shantung Province and it is thought by some authorities that they may have been used as long ago as 2,000 B.C. Colin Narbeth, an expert on shell money, suggests that the problem of a currency based on the small money cowries Cypraea moneta and C. annulus is that they must all have the same value. As their use as money spread and vast quantities were fed into the market they depreciated in value. And so the larger Cypraea tigris L. was introduced to represent a larger denomination equivalent to a fixed number of the smaller ones. A list including the tiger cowry was produced in China during the Inter-regnum period (AD 7-22) which gave sizes and values of the various species.

One of the most interesting uses of Cypraea tigris L. is to be found in the Polynesian Kingdom of Tonga. Here the natives have a curious contrivance for catching octopus and cuttlefish. Legend says that an octopus gave a rat, floundering in the sea, a ride to shore. Once on land, the ungrateful rat called out: "Octopus, feel on your head: see what I have left there!" The octopus finding his head had been soiled hated rats from that day to this. Taking advantage of the octopus's hatred of rats the Tongan fishermen make lures which are supposed to represent rats when in fact they much more closely resemble a crab, the octopus's favourite food. The maka-feke, as it is known, Fig. 22, consists of a straight and polished piece of hardwood about 30 cms. long. At one end of it a number of shiny pieces of tiger cowry are fastened onto a piece of limestone the size of a turkey egg one over another like the scales of a fish. They are tied together with flexible coconut fibres from the roots, and the tail is made up from coconut fronds. It is lowered by the fishermen from a small canoe, till it nearly reaches the bottom. Then by jerking the line the maka-feke is made to look like a crab scuttling across the bottom, a movement known as tootoofe. The octopus or cuttlefish attracted by the lure fastens itself by threading its tentacles between the pieces of cowry and so it hangs tenaciously on to the maka-feke as it is drawn up into the canoe where it is secured by the fisherman.

In Hawaii C. tigris L. used to be used as food. The natives used to throw the live animal in its shell onto hot charcoal, roasting them in their own juices. They then broke open the shells and consumed the cooked contents. It used to be considered a delicacy by all the native races on Hawaii. Today the shells can be either sold whole or made into souvenirs for more than the animal is worth as food. Another use of the cowry in the past was for making a specially fine glaze for clock face enamelling. The enamel was made by grinding up the shell which is made up almost entirely of calcium carbonate and then roasting it forming a fine white powder.

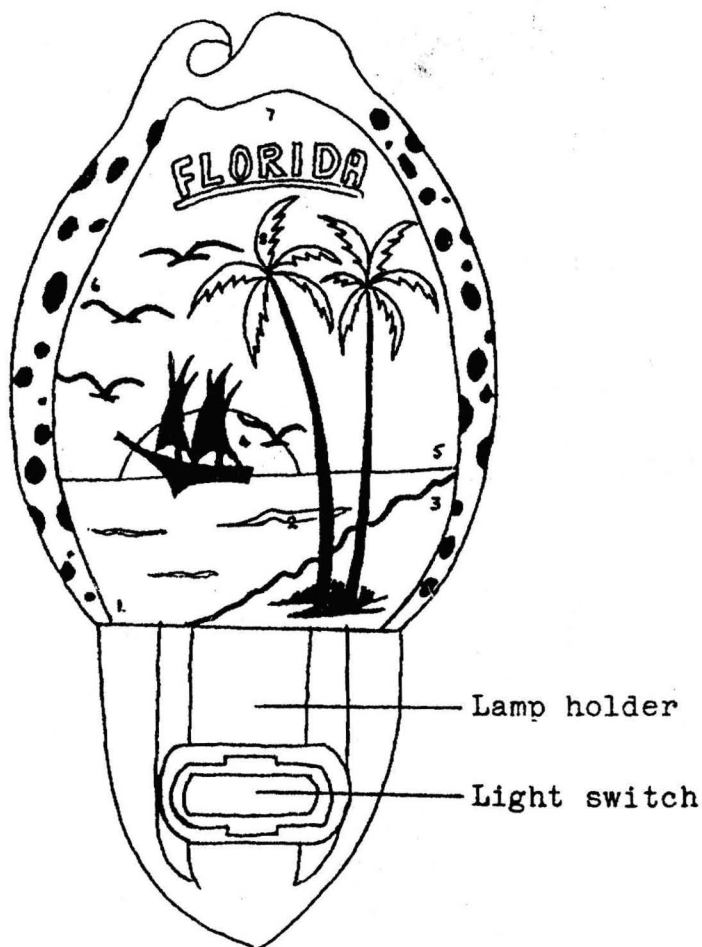
Although we live in an age of plastic souvenirs, kitchen equipment, cheap jewellery, etc., the cowry is still used for making numerous articles today. We regularly use a set of cowry napkin rings, Fig. 7, bought in my local shell shop at Southend-on-Sea. To go with these rings we have a cocktail stick holder, Fig. 11, the sticks having money cowry handles and a salt or sugar bowl with spoon, Fig. 10, all bought in France. What is interesting is that all these articles probably came from only one of the many shell firms in the Philippines because they all have an identical floral design carved into the shell.

In Richmond there is a shop called Andrew Martins which stocks a number of exotic souvenirs and articles. On 30th. Nov. 1984 I purchased from him a cowry shell purse, Fig. 9, with modern catch, for £4.95. What is interesting about this piece is that it is a copy of a Victorian-type purse in which a thimble would have been kept. In the same year I purchased some anti-allergic ear-rings, Fig. 14, for my daughter, a key-ring fob, Fig. 15, a hair clip, Fig. 16, and a butterfly brooch, Fig. 13, all made from left-over pieces of the cowry after the main whorl had been used for something larger. For example in Debdenhams, in the Royals shopping arcade Southend, summer 1989, I bought a very attractive brass arm bangle inlaid with pieces of tiger cowry, Fig. 6, and a necklace of pale wooden beads, Fig. 17. I saw another piece of jewellery in a photograph advertising the Philippines. One of the models was wearing an attractive bracelet made from a cowry in the same way and shape as the napkin rings, Fig. 7, mentioned earlier.

The Victorians used cowries a great deal but used them more for their writing, smoking and sewing tables. One occasionally comes across a cowry with a slit in the top and two holes, one at each end, in secondhand shops. These are the remains of small Victorian tape measures, Fig. 1, where the measure has either broken or rotted away. Still fairly easily come by are C. tigris snuff and pill boxes, Fig. 2, usually with a brass, silver or tin lid which clicks shut. The example shown

came from the Paris Flea Market. In the British Museum (Natural History) they used to have on display a lovely old Victorian ink pot made of a cowry with a cut glass ink well and dip pen sunk into the top. In my own collection I have a seaside souvenir paperweight made of a cowry with a lead seagull fixed into the top, Fig. 3. Modern versions of this paperweight can still be obtained in seaside resorts but with a plastic seagull and so light that they couldn't really be used very successfully as a paperweight, only as a cheap mantelpiece souvenir. Another type of paperweight common in modern seaside souvenir shops is the pen, held by a piece of gold or silver coloured plastic, stuck onto the top of a cowry with the name of the place either painted or, sometimes but rarely, printed in black or white on the side, Fig. 12. The one illustrated came from Southend obviously and was with a tortoise pincushion, Fig. 5, and a fish sculpture, Fig. 8, all being typical seaside souvenirs.

A rather fun article found in a secondhand shop in Godalming was the bamboo and shell spoon, Fig. 4. I have found a number of these spoons over the years and can only presume that they are copies of spoons originally used by the natives. I have one with Sulu Sea printed on the shell. The one shown has HAPPY BAY printed on the handle. If anyone knows where Happy Bay is, the author would very much like to hear from them. Another rather unusual article was found in America. In 1988 when we were out in Florida we visited numerous shell shops. In Florida these would crop up anywhere and everywhere. The one I remember best of all was part of a garage miles from anywhere. As one drove in the first thing one saw was row upon row of Queen Conch shells behind which were baskets and baskets full of shells. On the walls were large numbers of cowry nightlights. The one illustrated is a typical example. The outer layers were either ground down or worn away with acid and a

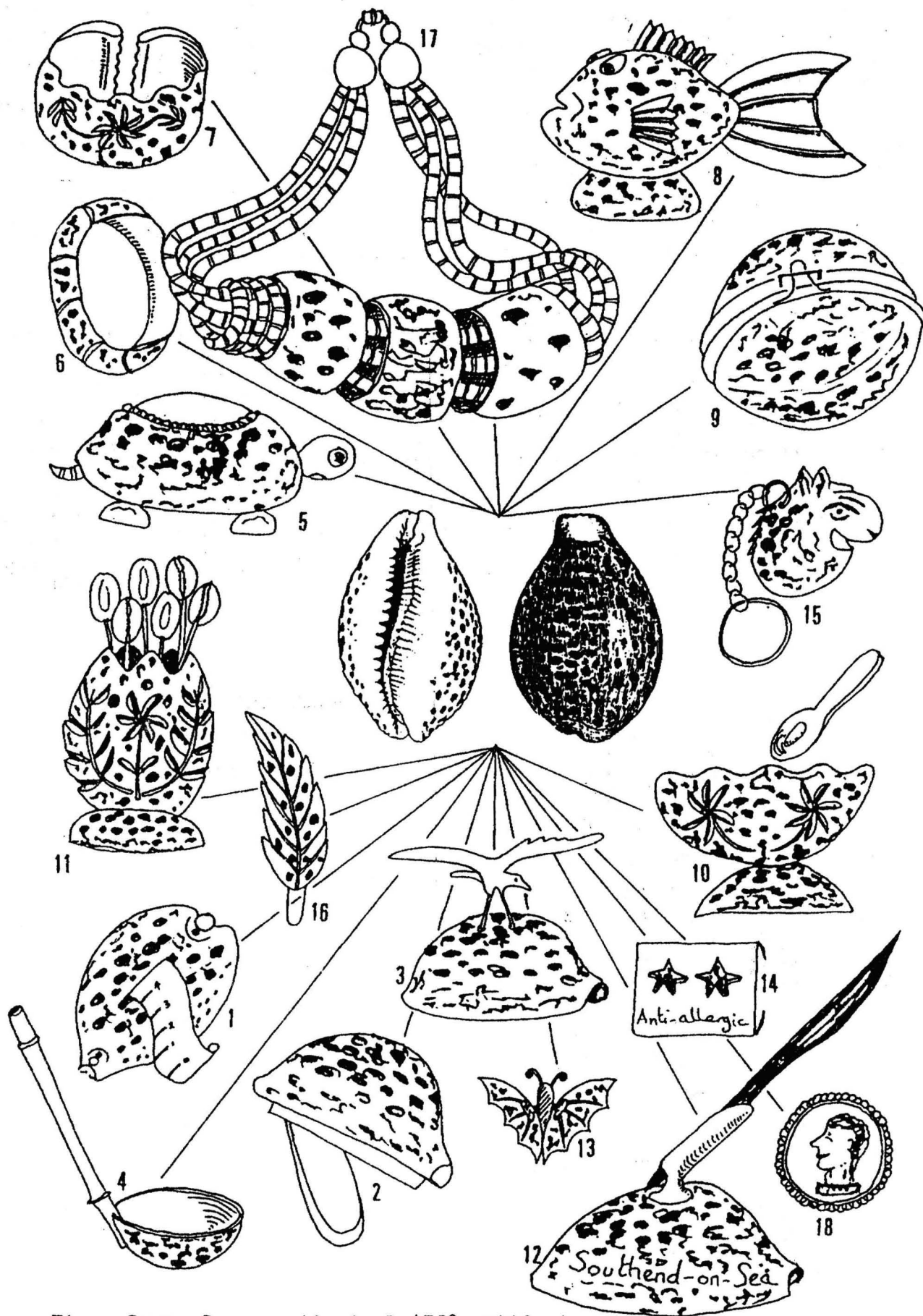


A tiger cowry nightlight from
Florida, 1988

Colour code key:

1. Blue sea with white flecks
2. Light brown beach
3. Red sun
4. Yellow sky running through to pale green
5. Turquoise blue
6. Dark green palm leaves
7. The word 'FLORIDA'
8. The sailboat

The untreated shell around the picture is spotted as in all tiger cowries used for this work and the letters for Florida are painted in red.



Tiger Cowry, *Cypraea tigris* L.1758 artifacts.



The Cow.

The Cowry.

The Cowry seems to be, somehow,
A sort of mouth-piece for the Cow:
A speaking likeness one might say,
Which I've endeavored to portray.

From How To Tell The Birds From
The Flowers
and other Wood-cuts
by Robert Williams Wood 1931

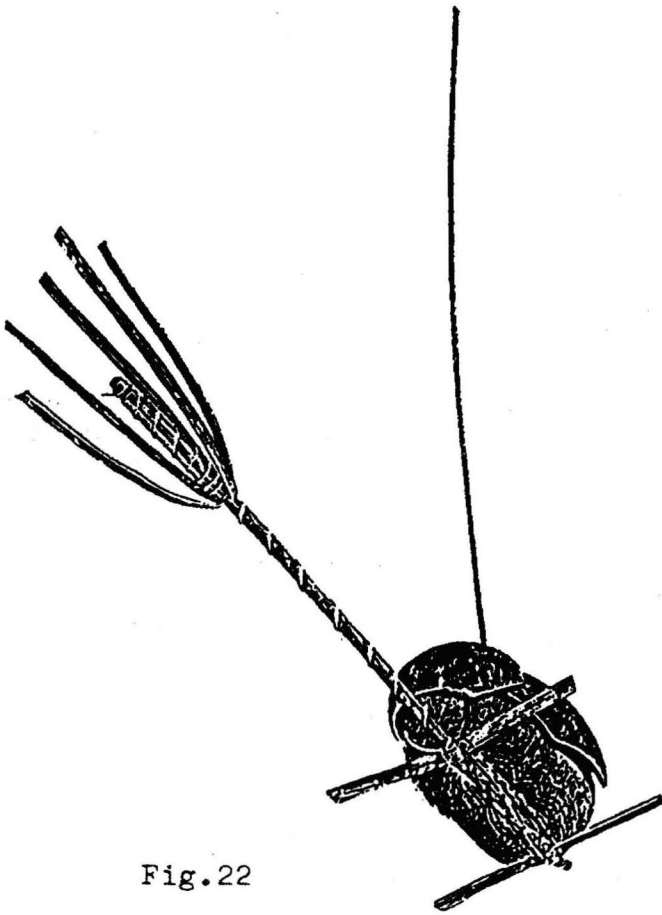


Fig.22

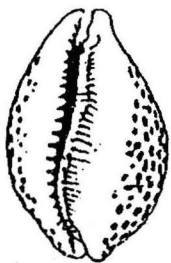


Fig.20



Fig.19



Fig.21

picture was then painted onto the white ground layer. For fun I have included a colour code key so that readers can colour the figure. They were certainly very attractive and only cost \$2.95 or roughly £2.

The last item, Fig. 18, is a cowry cameo brooch. They are not as common as the Cassis Cameo brooches but are very attractive when found. The one shown is probably late Victorian or early Edwardian with a filigree edge to it. This brings me on to the whole area of Cowry Cameos, a subject in itself. The third and last article about the Tiger Cowry will therefore deal with this subject in far more detail.

J. E. Llewellyn-Jones

NOTES ON ANOSTOMA

This genus of South American Bulimulidae is known to most shell collectors by its extraordinary aperture which is turned upwards so as to be practically horizontal so that the adult snail must carry the shell with the spire down. I have come across no literature which suggests any biological advantages of this behaviour but it seems unlikely that no one has commented on it. Studies of the living animal in the field certainly need to be made.

At least two of the species belonging to the genus have been known almost as long as shell collecting has been in vogue. My attention was drawn to the genus when one of my colleagues Dr. Ray Harley gave me two specimens collected alive (but unfortunately not drowned before putting into spirit) in Brazil, Goias State, near the town of Jardim, about 20 km. SE. of Dianopolis, 46°40'W., 11°50'S. on a calcareous rock outcrop with relict woodland. I thought naming so striking a species would be easy but the holdings of this genus in both the British Museum (Natural History) and the National Museum of Wales are particularly poor and Solem (in litt.) suggests most collections in North America are little better. The new book by Parkinson, Hemmen and Groh (1987) gives them very short shrift - odd for such a peculiar genus - perhaps the oddest shaped of all the bigger land snails. The little they do give is thoroughly inaccurate since the species they figure as A. ringens is not remotely that species. Fortunately Pilsbry (1901) dealt with them in the Manual of Conchology and Solem (1956) in a paper on the snails from the Matto Grosso.

Anostoma Fischer von Waldheim (1807) is based on his A. octodentatum but the species first given a binomial name which belongs to the genus is Helix ringens L.. Pilsbry refers to this 'Helix ringens Linne, Syst. Nat. (10) p.769, 1758 (exclusive of references)' but makes no mention of any specimen which might be the type. It seemed an attempt should be made to typify the species. Linne characterises the species thus under Helix -

ringens. 580. H. testa subcarinata imperforata convexa, apertura oblonga (sic);
labio postice quadruplicato
Bonan. recr. 3 t. 330
Argenv. conch. t. 32 f. 13
Habitat ----- e Museo Tessiniano
Testa magnitudine H. lapicida sed magis convexa, livida, anfractu in
medio carinato albo. Apertura H. caracollae, extrorsum dilatato-marginata
elongata. Labio postico plicis 4, sulcis 3.

It is rather extraordinary that Linne makes no mention of the upturned aperture but he probably thought the literature references would make this evident. As it is the description is longer than most. In order to find out what had happened to Count C. G. Tessin's collection I wrote to the Swedish Museum of Natural History.

Helix ringens was not among the species described in Linne's 'Museum Tessenianum' (1753) but must have been seen later. Tessin's collection was purchased in 1762 by King Fredrik V of Denmark for the newly established institute in Copenhagen at Charlottenlund and when this institute was abolished in 1772 its collections were transferred to the University Museum which had been established in 1770. In 1810 these collections were bought by Count J. G. Moltke and, together with his private natural history collection, again donated to the University where they came to form De grevlige Moltke'ske Universitetet tilhørende naturhistoriske Samlinger. Around 1864-67 the zoological collections of the University Museum and of the Royal Museum were united into the present Zoological Museum of Copenhagen. Unfortunately many of the types, especially of the molluscs, have been lost. Some of the specimens in the original Tessin collection came from the Albert Seba collection which was auctioned in 1752 after Seba's death in 1736. I am very grateful to Dr. Åke Franzen for the above information which is quoted more or less verbatim. I wrote to the Zoological Museum in Copenhagen to see if Tessin's specimen of Anostoma was still extant but unfortunately it is not. Pilsbry synonymises A. globulosa Lam. with A. ringens but Mermod (1951) does not mention any specimen of this species. There is then no direct way of proving the identity of Linne's ringens and the type locality is quite unknown. All we have is the description which does not fit the figures he cites. Under the circumstances Pilsbry's interpretation should be followed. The missing specimen must be accepted as the lectotype and not the illustrations else a confusing change of nomenclature would result. It is clear that Linne is basing his name chiefly on the Tessin specimen which he clearly examined; he merely considered that the figures were of specimens which were probably the same or at least they fitted in with his usually broad specific concepts. Solem following Weber (1925) divides Anostoma into three groups, 1) without any fissure or perforation at the parietal-peristomal angle (A. octodentatum Fischer von Waldheim, A. deshayesianum Fischer, A. depressum Lam. and A. verreauxianum Hupé); 2) with the angular and sutural lamellae separated only by a narrow fissure which is enlarged posteriorly to form a cavity (A. luetzelburgi Weber, A. rossi Weber and A. baileyi Solem); and 3) with the two lamellae fused and enclosing a circular perforation (A. ringens (L.) and A. carinatum Pfr.)

The specimens collected by Harley clearly come into group 1, measure 34 x 26 x 15 mm. and are quite obviously keeled which rules them out of being A. deshayesianum despite the dentition of one of them being similar. The two specimens are both dark brown with the peristome and aperture dark brown but the teeth much paler particularly in one specimen where they are quite white. The two specimens are not identical in dentition. One has 7 labial lobes arranged much as in Pilsbry's plate 6, fig. 43 but including an obscure additional one between the paired group and the basal lamella and 3 parietal lobes the upper pair in planes at right angles to each other actually joined and not separate as in Pilsbry's figures. The other specimen has the same parietal arrangement but only 5 labial lobes arranged as in Pilsbry's fig. 40. There is no doubt Harley's two specimens are the same taxon and that dentition is variable. The dentition indicates A. octodentatum but the size and colour agree better with A. depressum. Solem indicates A. deshayesianum from Goias, Anapolis but does not mention colour and as mentioned the distinct peripheral keel of Harley's specimens seem to preclude this identification. I have concluded that at least subspecific status is indicated and a description will be given later in the Journal of Conchology.

Figures in the literature seem more contradictory than usual. Parkinson et al. (1987) figure an 'Anostoma ringens' from Ceara which clearly comes into group 1 and has nothing to do with ringens at all. They figure another group 1 species (in fact it looks con-specific with their 'ringens') under the name A. depressum Wood, 1828 which even if it exists (and I could not find the name) is obviously a later homonym of depressum Lam. Chenu and Wood both figure group 1 species as ringens presumably led astray by Linne's references to earlier figures. It is clear that absolutely no help can be obtained from the popular literature.

Although Tessin's specimen was not present in the Copenhagen collections Annie Vedelsby kindly loaned to me another specimen which had been in Count Moltke's collection. This is a large specimen 4 x 2.9 cm. and clearly nothing to do with the species described by Linne. The old original label with the specimen states 'Orig. Chem. IX t.109, f.919-20 H. ringens L. p.86 Anostoma depressa Lam. Jamaica Mus. Moltk.' This indicates it is the original for the illustrations in Martini & Chemnitz. It is clearly a group one species and according to Pilsbry's account ought to be A. octodentatum since he cites Chemnitz's figures under this and it matches his figures and measurements.

Since information on this genus appears sparse it seems worth detailing the material available in the British Museum (Natural History) and the National Museum of Wales.

Brazil, Bahia; ex Mus. Cuming	Group 3 and labelled correctly <u>A. globulosum</u> Lam. = <u>A. ringens</u> (L.). 2cm. maj. diameter.
Brazil, no loc.; ex Mrs. De Burgh coll.	Group 1 <u>A. deshaysianum</u> Fischer, labelled as <u>A. intermedia</u> ,
No loc.; Biggs coll., one ex Bostock coll. & one ex Gynge coll. via Fulton	Group 3 labelled <u>A. globulosum</u> = <u>A. ringens</u> .
Brazil, Para; ex Mus. Cuming	Group 1 correctly labelled <u>A. octodentatum</u> . 3.7-4.3 cm. major diameter.
Brazil, no data	Group 3 labelled <u>A. globulosum</u> = <u>A. ringens</u> .
Ditto	Ditto but a freak specimen with damaged mouth.
Brazil; ex H.F./ W.T. Blanford coll.	Group 3 labelled <u>A. globulosum</u> .
Brazil; coll. Trenchmann	Group 1 cf. <u>A. deshaysianum</u> . 2.7 cm. major diameter.
Brazil; ex Mrs. De Burgh coll.	Group 3 <u>A. carinatum</u> . Very near <u>A. ringens</u> , probably only a variety. 2.5 cm. major diameter.
Brazil; ex Mus. Cuming	Labelled ' <u>intermedium</u> Pfr.' and <u>deshaysianum</u> Fischer var. 2.8 cm. major diameter.
Brazil, Ceara Prov.; ex Gardner	Three specimens group 1 ? <u>A. depressum</u> ; 3.7 cm. major dia- meter. One specimen group 3 <u>A. ringens</u> , 2.1 cm. major dia- meter.
Brazil; ex Mus. Cuming	Group 1 labelled <u>A. verreauxianum</u> Hupe = <u>A. depressum</u> . Major diameter 3.4 cm.
Brazil, Ceara, Iraucuba, very dry caatinga vegetation on open rocky burnt over slopes at 220m. G.P.Lewis (comm. B. Verdcourt)	<u>A. depressum</u> ; major diameter 3.2 cm.

A further specimen of A. octodentatum is in the Cracherode collection being one which was figured by Children in 1823 and by Leach in 1815. An account of this has been given by Wilkins (1957: 145 & 153, pl. 25, fig. 10).

National Museum of Wales.

Brazil; 3825 cat. Melvill	<u>A. depressum</u> ; major diameter 3.5 cm.
Brazil; Ceara	Labelled <u>A. depressum</u> but very worn <u>A. octodentatum</u> according to dentition.
Brazil; Para	<u>A. depressum</u> ; two specimens with only four teeth
Brazil; Ceara	<u>A. octodentatum</u> ; major diameter 4 cm.
Brazil; without any locality	Group 3 labelled <u>A. ringens</u> ; carinate; major diameter 2.5 cm.
No data	Group 3 labelled <u>A. carinatum</u> but exactly as last save major diameter 2.2 cm.
No data	Group 3 labelled <u>A. carinatum</u> and one specimen is very carinate; major diameter 2 cm.
No data	Group 3 labelled <u>A. globulosum</u> ; four specimens same as rest and slightly carinate; major diameter 2 cm. One label states specimen figured but I have not worked out where, possibly in Reeve, Conch. Icon.

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Bernard Verdcourt

THE LONELINESS OF THE SOLITARY SHELL HUNTER

If a passer-by happens across a field meeting, it is usually evident what is going on, although he may need enlightenment as to the interest of the members -

whether mycology, malacology or mammalogy. Some of the enthusiasts present will usually be delighted to provide information. The situation is very different when one goes shell hunting alone - one is very often under those circumstances taken for an eccentric of some undefined kind, or possibly someone in need of help. As an example, it happened to me one day in a beech wood, when I was lying prone on some quite productive leaf litter, with my face about four inches from the ground, happily engaged in finding a good selection of small molluscs, that I gradually became aware of the proximity of two human beings and I rolled over to confront a pair of faces full of concern at what seemed a serious situation and doubt as to their necessary action. Explanations resulted in considerable relief although the visitors did resume their ramble with a just discernible shake of the head.

Lonely places, I suppose, in these degenerate days, always suggest the possibility of assault, although I still feel the risk is a very small one in this country. Nevertheless, it is good to have a companion on one's expeditions. However, there are other dangers, as recently pointed out to me in a letter from Hildegard Zeissler who lives in the City of Leipzig, now busy making history, an activity in which she has not joined. Hildegard does an incredible amount of molluscan census work in Thuringia and she writes about her latest expedition as follows:

"My last field excursion was an adventure. I went to a small nature reserve called Grenzgraban, that is situated nearby a main railway line. It is a wet place between fields. I had been there twice already as Nature Protection asked me to look there for mollusca. That last time I lay on the ground seeking for minuties e.g. Carychium. Those were scarce and so I lay there for a while scarcely moving. Later on when I searched for Pisidia in a ditch, at once some cars were coming and stopping in the midst of the protected area. Fire Brigade, a Doktor and his assistants. They had been alarmed by a passenger who had seen me lying there and thinking that I might have had an accident, perhaps fallen out of a passing train. And the people of the adjacent farm also came looking for the corpse I showed my passport to the policemen and also the legitimation form 'Nature Protection' that I am allotted to work in protected places, and they were quite kind and sensible. Only the Doctor was angry for being called in vain, but I was quite innocent. Then the cars had to leave, but they stuck in the wet soil, and at the end a tractor had to come from the farm to tear them out.

But imagine how the protected small place was looking after that. Of course I gave an account of the event to Nature Protection and it all was well meant. But Dr. Falkenberg, our head for the Leipzig area, was shocked."

It may not always be easy to 'look alive' on these occasions and I'm not sure what moral should be drawn except to bag one's leaf litter and deal with it at home. Even then, there are people who object, with reason, to the removal of compost from woods, at any rate in sizeable quantities, so you may be in trouble again. Hard is the lot of the naturalist.

T. E. Crowley

RECORDING MOLLUSCA IN IRELAND : SEA AREA 34

In the autumn of 1989, I became the Recorder for Sea Area 34, as Elizabeth Platts, the former recorder, had returned to England after many years of taking care of this area. My thanks go to her for all her helpful advice to me. This article discusses only my own recent experience in recording from this area. Many other fieldworkers have also visited the area and found new records, including several Conchological Society trips - the most recent being the meeting I led to Donegal in June 1989.

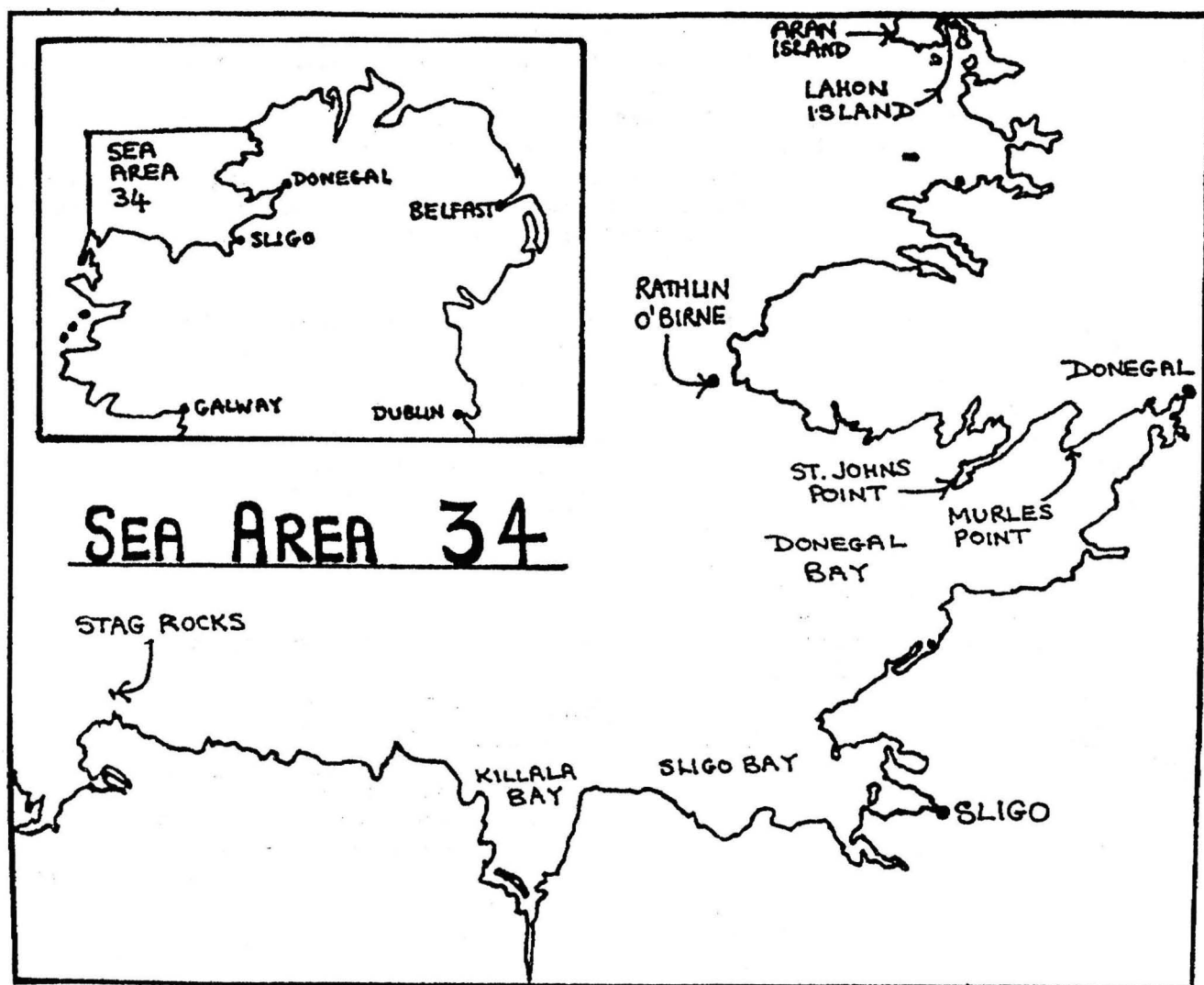
Sea Area 34 encompasses the whole of a huge bay on the north-west coast of Ireland, from Erris Head to Rathlin O'Birne, together with the coastline north up to Lahon and Aran Islands near Burtonport. I have recorded mollusca from five different areas in this bay over the past 3½ years (1986-1990). These areas are shown on the map - Lahon Island, Rathlin O'Birne, St. John's Point, Murles Point and the Stag Rocks. During a general search, samples of algae/hydroid/bryozoa were collected and examined for molluscan fauna (methods as in Conch. N.L. 95, p.316 [1985]), except that sublittoral material was first kept in sea water for 1-2 days to allow small sea slugs to crawl out!

Lahon Island, Co. Donegal is a small island which can be reached on foot over sand at low spring tide. It exactly straddles the 55° N line of latitude, and can therefore be considered to lie in both Sea Areas 34 and 33! (sorry, Dennis!!). I have looked at both the littoral and sublittoral (<6m) habitats, and also dived the southern end of Aran Island which lies further offshore (<38m). It has a typical molluscan fauna of a habitat of bedrock on sand, with only the rissoid species Rissoa rufilabrum, R. lilacina and Pusillina inconspicua, and the small gastropod Rissoella opalina being of interest.

Rathlin O'Birne, Co. Donegal is a small, largely granite, island lying 2-3 miles offshore from a narrow natural harbour called Malin Beg, near the village of Glencolumbkille. The island is very exposed to the Atlantic swell, and partial shelter is normally found only in the small bays on the south side. Generally the fauna is dominated by urchins (Echinus esculentus), black sea-cucumbers (Holothuria forskali) and large starfish (Marthasterias glacialis). Dogfish are common in the south bays, and it is the northernmost site for the sea fan Eunicella verrucosa. I have dived this area seven times (20-45m) over the past 3 years. In Malin Beg harbour is a tall stack, which offers an interesting snorkel or shallow dive (0-12m). The steep sided stack has many crevices and overhangs underwater for a wide variety of marine life to shelter in. The shore of the harbour itself is a vertical cliff, with large barren boulders at the head of the inlet. However, there is a small bay to the north of Malin Beg, which has a gentle slope and easy access. It consists largely of an upper shore of boulders and stones with exposed bedrock on the lower shore. The whole area is generally excellent for mollusca, especially nudibranchs (16 species), which are plentiful on the red algae below about 8-10m. Facelina bostoniensis was seen crawling over sand at about 5m. Cuthona viridis, an unusual sea slug was also found in this area.

St. John's Point, Co. Donegal is a long narrow peninsula projecting south-west into Donegal Bay. The shore at the tip by a lighthouse is very exposed bedrock, with small mussels being the dominant fauna on the lower shore. A partly submerged rock at the end of the peninsula drops southward towards an underwater cliff face. The hard Carboniferous Limestone here has been eroded into caves, gullies and overhangs. A kelp fringe at about 2m gives way to patchy red algae down to about 20m. Boulders lie at the foot of the cliff on a gentle slope to 30m and beyond. At about 10m in depth, the rare nudibranch Hancockia uncinata was found with its spawn - the northernmost record for this species in the British Isles. St. John's Point is well known for its unusual molluscan fauna - it is the type locality for the sea slug Cuthona rubescens. On the east side of the point is a wide sheltered sandy bay, with sublittoral Zostera beds on the sand, and rocky shores to the side with maerl. The shore and sublittoral fauna proved to be disappointing. Unfortunately, I have had no opportunity yet to explore the maerl bed.

Murles Point, Co. Donegal is also a peninsula projecting into Donegal Bay. It is probably the richest single shore site in Ireland for mollusca. I have personally recorded 106 live species here, including 22 species of nudibranch. Doorin Point, which is to the south-west of Murles Point, has a superficially similar geology of limey sandstone and shale, but is species poor by comparison. Murles Point is a huge beach, with a wide variety of habitats - bedrock with crevices and overhangs;



lagoons with gravel/sandy floors and Zostera beds; areas of shelter with little current, and others with streams of water flowing over them. Consequently, it is an excellent site for every type of mollusc - chitons, nudibranchs, rissoids, bivalves. Amongst the live species of note: - Manzonina crassa, Caecum glabrum, Vitreolina philippi, Raphitoma linearis, R. purpurea, Epilepton clarkiae (with its sipunculid host), Arca tetragona (an overhang was riddled with their holes!), Irus irus; Thracia distorta and seven species of pyramidellid. However, it is for nudibranchs that Murles Point is well known. A few of the rarer species were: Goniadoris castanea (rarely seen on the shore), Onchidoris sparsa and O. depressa (on their specific encrusting bryozoan food), Facelina annulicornis and Aeolidiella sanguinea (only known from a few localities in the British Isles) and Janolus hyalinus (normally considered to be sublittoral - this is the first record from the shore).

The Stag Rocks, Co. Mayo are a group of pinnacles and small islands about 2-3 miles offshore. The cliffs extend below water to depths greater than 40m. I have dived here five times (30-40m). The marine life is rich and varied, with jewel anemones (Corynactis viridis) being a special feature of the cliff faces. However, it was not especially rich in mollusca, only yielding, for example, eight species of nudibranch. The only item worth mentioning here is that the white form of Calliostoma zizyphinum occurred sublittorally here around the rocks, although less than 50% of the total population of this species.

In total, I have recorded 136 live species from Sea Area 34 (34 of them nudibranchs) with 45 new or updated records for the Atlas (published by the Conchological Society of GB & Ireland [1982] ed. D. Seaward). The richest area is clearly northern Donegal Bay. However, there are many sites still to explore within Sea Area 34, and I hope that I, and others, will be able to visit them in the near future. If any member of the Society has the opportunity to visit Sea Area 34, please send me your records!!

Acknowledgements: I would like to thank the following: Queens University Belfast Sub-Aqua Club (1986/87), Dolphins Sub-Aqua Club (1988/89/90) and Graham Day for diving support; all those who have helped me with my shore surveys; Shelagh Smith for assistance with identification of the more difficult species.

Julia Nunn

CHECKLIST OF SPECIES *new or updated record for Sea Area 34

1 = Lahon Island
4 = Murles Point

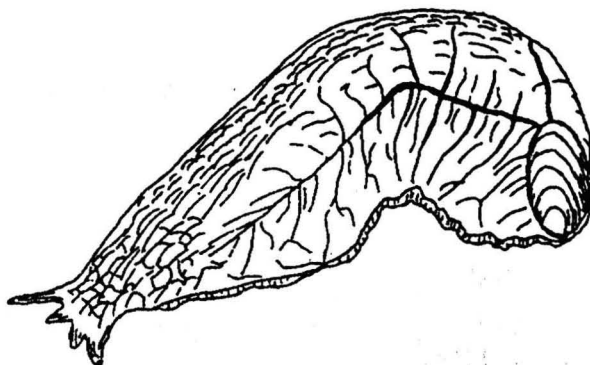
2 = Rathlin O'Birne
5 = Stag Rocks

3 = St. John's Point

Leptochiton asellus* (3,4); Lepidochitona cinereus (4); Tonicella rubra* (2,4); Callochiton septemvalvis* (4); Acanthochitona crinitus (4); Emarginula fissura* (3); Diodora graeca (4); Tectura testudinalis* (4); T. virginea (2-5); Patella aspera (1,3); P. vulgata (1-4); Helcion pellucidum (1-4); Margarites helycinus* (2); Monodonta lineata (3,4); Gibbula cineraria (1,2,4); G. umbilicalis* (1-4); Calliostoma zizyphinum (1-5); Tricolia pullus (1-3); Bittium reticulatum (2-4); Marshallora adversa (4); Cerithiopsis tubercularis (4); Lacuna vincta (1-4); L. pallidula (1-4); L. parva (1-3); Littorina neritoides (1-4); L. littorea (1-4); L. mariae* (1-4); L. obtusata (1,4); L. neglecta* (1-4); L. saxatilis (1-4); Barleeia unifasciata (2); Rissoa lilacina* (1,3,4); R. rufilabrum* (1,4); R. interrupta (1-5); R. parva (1-5); Pusillina inconspicua* (1); Alvania punctura (2-4); A. semistriata* (1,4); Manzonina crassa* (4); Cingula cingillus* (1,4); Onoba semicostata (1-4); Skeneopsis planorbis (1,3,4); Caecum glabrum* (4); Potomopyrgus jenkinsi (4); Trivia arctica (2-4); T. monacha (1,4); Simnia patula (2,3,5); Lamellaria latens (1,4); L. perspicua (1,2,4); Euspira poliana* (2,3); Vitreolina philippi* (4); Nucella lapillus (1-4); Buccinum undatum (4); Hinia incrassata (1-4); Hinia reticulata (1); Mangelia nebula (dead)* (3); Raphitoma linearis* (4); Raphitoma purpurea (4); Odostomia plicata (4); O. turrita* (4); O. unidentata* (4); Brachystomia albella (4); B. eulimoides* (4); B. rissoides* (4); Jordaniella nivosa* (4); Rissoella diaphana* (4); R. opalina* (1); Omalogyra atomus* (4); Philine punctata* (4); Diaphana minuta* (4); Retusa truncatula* (1,4); Limapontia senestra* (1,2); Elysia viridis (1,2,4); Aplysia punctata (1-4); Berthella plumula (4); Hancockia uncinata* (3); Doto coronata (2,4,5); Goniodoris castanea* (4); G. nodosa (2,4); Acanthodoris pilosa (2-4); Adalaria proxima (4); Onchidoris bilamellata (2-4); O. depressa (4); O. muricata (2,4); O. sparsa (4); Aegires punctilucens (2); Limacia clavigera (2-4); Polycera faeroensis (3,5); P. quadrilineata (2,3); Cadlina laevis (2); Archidoris pseudoargus (1,2,4,5); Discodoris planata (4); Jorunna tomentosa (1,4); Janolus cristatus (2); J. hyalinus* (4); Coryphella browni (1,5); C. lineata (2,5); Cuthona amoena (3); C. foliata (4); C. viridis* (2); Eubranchius pallidus (5); E. tricolor (2); Facelina annulicornis (3,4); F. bostoniensis (2); F. coronata (4,5); Favorinus branchialis (4); Aeolidia papillosa (4); Aeolidiella glauca (2,4); A. sanguinea (4); Leucophytia bidentata (4); Mytilus edulis (1,2,4,5); Musculus discors (1,4); Modiolarca tumida (1-5); Modiolus modiolus (2-4); Arca tetragona (4); Ostrea edulis (4); Chlamys varia (4); Aequipecten opercularis (2); Pecten maximus* (3); Anomia ehippium (4); Pododesmus patelliformis (4); Pododesmus squamula* (1-5); Lucinoma borealis (4); Lasaea rubra (1,2,4); Kellia suborbicularis* (4); Mysella bidentata* (4); Epilepton clarkiae* (4); Parvicardium scabrum* (4); Dosinia exoleta (3); Tapes decussatus (3,4); Irus irus* (4); Venerupis senegalensis (1,4); Turtonia minuta (1); Hiatella arctica (1-5); Psiloteredo megotara* (1); Thracia distorta* (4); Eledone cirrhosa (3).

TESTACELLA HALIOTIDEA DRAPARNAUD 1801 IN A GODALMING GARDEN

Whilst digging over an "undisturbed" area of my garden in February this year, a friend uncovered five specimens of a Testacella species. The slugs were put in a container and observed. Once crawling and thus fully extended, the lateral grooves on the dorsum of the animals were clearly seen to converge underneath the shell, a diagnostic feature of T. haliotideae. A drawing of one of the animals was made and is figured here. This animal was then preserved and sent to Mr. Adrian Norris who confirmed the identification.



Testacella haliotideae, Godalming, February 1990. Extended length: 75mm.

Ever since I first learnt about slugs which bore vestigial shells, I have wondered and suspected that I might unearth Testacella in my garden. This suspicion was entirely intuitive but might have had something to do with the fact that the house is Victorian and built on a steep hillside with a garden that, until recently, was cultivated only to the threshold of wilderness. The terrain might be more suitable for a herd of mountain goats or the establishment of a vineyard, but a plethora of dry stone walls has meant that the mollusc count is relatively high for a garden. Up until the finding of Testacella the species tally stood at 30, these records being the work of Ian Killeen and Beryl Rands.

On passing details of the find to Michael Kerney I discovered that the only other record for this 10 km. square (SU 9--4--) relates to a note in J. Conch. 11 (1906) entitled "Testacella haliotideae at Godalming" by Oswald H. Latter. "Last evening I captured five specimens of Testacella haliotideae upon a stone wall bounding the garden of one of my colleagues here. The slugs were apparently crawling down the wall from the ivy which climbs thickly over the top. They were about five feet above the ground. I imagine that the recent heavy rains had driven them out of the ground, and that they had taken refuge in the ivy, and on the return of hot dry weather were making for their usual subterranean quarters. I have never heard of this slug being taken here before, though I have lived here for over fifteen years and have always kept a look out for it for the sake of our museum collections."

The Public School, Charterhouse, is located in Godalming and its presence and activities pervade the town. Although it was tempting to assume that the museum referred to was Haslemere Museum (Godalming Museum having a very low profile on the natural history front), the mention of "a colleague's garden" hinted at the School. A quick phonecall to a friend who is a Master established that Oswald Latter had indeed been a Master at Charterhouse. Further enquiries of the School Archivist

drew the following information.

Oswald Latter came to Charterhouse as a boy in 1878 and found there, in his own words, "two Science masters and no laboratory." Moreover both then and until he returned as a master in 1890 the teaching of Biology was specifically banned as a demoralising subject, except to out of school hours to a few future medical students!! During his 36 years as Senior Science Master great progress was made in the development of science teaching at Charterhouse so that when he retired there were six laboratories, five classrooms and seven Science masters. Biology remained Latter's special province; he also wrote text-books and his principal interests were Lepidoptera, Diptera and Hymenoptera.

Further enquiries of my friend confirmed that the museums referred to were still in existence although the majority of the collections made over the years were housed in a collection of fine cabinets in the cellars beneath the former Science block and could be viewed by arrangement only. This I did and was able to look at, amongst other things, large numbers of insects and birds' eggs, amassed by master and boy alike, at a time long before terms such as 'over-collecting' and 'endangered species' came into use. There were also four less orderly drawers of molluscan specimens through which I had a necessarily hasty look in the hope I might find evidence of Latter's molluscan contributions to the School's collections. Time did not permit detailed unravelling of the contents of these drawers for some hours would be needed to sort the material which contained both non-marine and marine specimens.

Throughout his life Latter was a highly respected Naturalist. He died at Godalming in 1948. In an obituary Sir Julian Huxley wrote "Latter was a first-class naturalist as well as an excellent biologist. His interests were wide, his observation acute and never-failing. He was a research naturalist, not only one who enjoyed nature and making observations; and he made not inconsiderable contributions to British natural history."

My particular interest in Oswald Latter and his five slugs stems from a coincidence. He was a Housemaster and for part of his career lived in Robinites, one of the School's boarding houses. Many of the School's masters lived, as they still do now, in flats and houses which are situated within close proximity to, and owned by, Charterhouse. My own house is one such property although it is many years since the School sold it on the open market. My back garden disappears into the ancient woodland which skirts the south boundary of Charterhouse. I like to think that it might have been my garden where Latter found his five Testacella specimens on that fine dry evening in June almost ninety years ago.

Janice Light, [REDACTED], Godalming, Surrey, [REDACTED]

(Postscript: a few days after writing this article and whilst browsing along the shelves of a second-hand book shop, I came across a copy of a book entitled *The Natural History of Some Common Animals*, published by Cambridge University Press in 1904. The author of said book is Oswald H. Latter and his stated object in writing the book was "to set forth the natural history of those animals which usually serve as types of animal structure in elementary courses of zoology." It seemed appropriate that I should add this book to my own shelves containing as it does a well-written section on Mollusca.)

LAND MOLLUSCS IN CENTRAL NORTH AUSTRIA

Ten days in the upper Saalach valley of the Kitzbühler Alps in August 1989 gave me an opportunity to see something of the land molluscs there, contrast lime-

stone and more acid areas within travelling distance, and see how the fauna compared with an area of the Valais, Switzerland, visited in 1988.

Hinterglemm, where we stayed, is about 1000m above sea level. It is primarily a ski resort since the Paleozoic shales in the area have produced rather rounded mountains, rising about 1000m above the valley floor, with relatively gentle rock-free slopes from which the forests can be quite easily cleared.

A pre-holiday inspection of Klemm's very detailed report of 1973 on the distribution of land snails in Austria showed only one record from near where we were based - Arianta arbustorum at Saalbach, 3Km downstream from Hinterglemm - and it was soon apparent why. This species was abundant along damp valley bottoms and road and track verges, especially where there was a dense growth of Butterbur (Petasites sp) near or under Grey Alder (Alnus incana). Such sites were where most of the local land molluscs occurred. The conifer woods, where uncleared, on the mountain sides and the grazed alps near and on the summits showed very few traces of molluscs with single sightings of Limax cinereoniger under a Spruce log at 1300m and what looked like Deroceras agreste in an acid wet flush at about 1150m.

The "Butterbur zone" was dominated by the snails and slugs which were busily reducing the Butterbur leaves to tatters. Besides Arianta, Trichia unidentata was common; it is rather globular when adult, densely hairy, and with a very small umbilicus; the characteristic tooth on the labial rib is only apparent in dead shells. Young Vitrea pellucida were sometimes common on the underside of Butterbur leaves as was Columella edentula segregate. Juvenile Perforatella umbrosa, superficially like Trichia striolata until a lens revealed the characteristic surface sculpture, were present in small numbers, but full grown specimens were only found as fresh dead shells. I also found occasional Arion subfuscus and Deroceras reticulatum and, possibly, D. agreste. Ground litter under the Butterbur produced a few additional species: Aegopinella nitens, Vertigo substriata, what was probably Eucobresia diaphana, Cochlicopa lubrica, Carychium tridentatum and, once, Vitrea crystallina. A narrow wooded valley at Elmau, just east of Hinterglemm, also had Euconulus fulvus, and the two or so large Sycamore (Acer pseudoplatanus) supported Clausilia dubia, Limax marginatus and one specimen of Discus ruders under loose bark. Rotting planks at the base of these trees had 4 Macrogastra plicatula (with a much larger aperture than seen elsewhere) and a juvenile Isognomostoma holosericum. I found no molluscs on Grey Alders.

A brown form of Arion ater was common, early in the morning, on road verges near Hinterglemm. Helix pomatia was seen at two sites near houses, one being an "imported" limestone wall and Perforatella incarnata also turned up once on a road verge. Elsewhere around Hinterglemm I noted Nesovitrea hammonis once, a shell of Eucobresia diaphana on a damp grassy bank at 1100m, and (in leaf litter associated with a Sycamore) Punctum pygmaeum and a juvenile Ena obscura.

Lured by the limestone mountains to the north I took a hot post bus trip to Saalfelden (followed by an equally hot walk to the wooded valley of the Kaltenbach), and my wife, Pat, and I paid a similar half-day visit to Diesbach where there is a small wooded valley with a waterfall on the east side of the Saalach gorge. Both these places are at the foot of the bare peaks of the Steinernes Meer which form the boundary with the Berchtesgaden salient of West Germany. Many of the molluscs had also been seen round Hinterglemm - Arianta arbustorum, Trichia unidentata, Perforatella umbrosa, Columella edentula, Vertigo substriata, Aegopinella nitens, Macrogastra plicatula and (at Diesbach) Clausilia dubia, and Eucobresia diaphana which was kindly identified by Dr. L. Lloyd-Evans. In addition, among the helicids Isognomostoma isognomostoma was relatively frequent, and crevices among boulders at Diesbach yielded 2 shells of Chilostoma achates. Vertigo pusilla was common in long grass at the edge of a hillside path above the Kaltenbach, and also was living on a mossy boulder at Diesbach. The Vitrea present at both sites turned out to be V. subrimata, and both places also had Discus rotundatus. Orcula dolium was common

among rubble at Diesbach, where Sycamore woodland at the base of the cliffs produced Ena montana and a fresh immature shell of Acicula polita. Probable Clausilia parvula (which I failed to collect for verification) and dead shells of Semilimax semilimax were found by the stream at Diesbach.

Although Austria is noted for the variety of its Clausiliid fauna, exploration of the Saalach valley had only produced three species. I did better on a Saturday afternoon coach trip to the Liechtensteinklamm gorge about 60 miles east of Hinterglemm and south of St. Johann-im-Pongau. The gorge was narrow, damp, and full of rushing tourists and water. It is cut in slates which appear to be calcareous as the wet rocks and trees had a variety of snails which I was able to snatch at as I was pushed along. These included Lymnaea truncatula and Pyramidula rupestris, together with Ena montana and Clausiliids - Clausilia dubia and Macrogastra plicatula again, but also M. ventricosa and M. densestriata. On the return journey a refreshment stop at the village of Goldegg, west of Schwarzach produced Clausilia parvula on a wall top and Alinda biplicata at the base of a wall in the churchyard.

The search for molluscs at high altitude had been unsuccessful on the mountain tops overlooking the upper Saalach. A day trip to the Grossglockner Pass gave just enough time to note small Vitrinids at 2500 meters at the Edelweisswand, where I did not look in the right place for the Austrian endemic Helicid Cylindrus obtusus. The slopes above the glacier at the Franz Josephs Höhe (c.2430m) produced Euconulus fulvus and a dark slug which I would call Limax marginatus in Britain, but possibly the form called L. rupicola Lessona and Pollenera 1884 or L. janetscheki Forcart, 1966.

How did all this compare with the vicinity of Les Marecottes and St. Maurice in the Swiss Valais? Away from the villages molluscs seemed more numerous in the Saalach valley than on the crystalline rocks round Les Marecottes, but in both these areas the variety was not large. Some differences in species present were a function of range - Perforatella umbrosa for example. The softer rocks around Hinterglemm did not produce boulders and crevices so there was no sign of Helicigona lapicida. Cepea was not noted at all in Austria, nor Oxychilus. The finding of a wider variety of small species in Austria was partly due to my taking a sieve this time, and partly perhaps to denser ground cover. But once again, seeing what was there was great fun and it was not safe to assume identifications by a glance in the field.

Acknowledgements: Dr. David Holyoak kindly checked the identification of the Clausiliidae, Dr. Chris Paul that of the Columella specimens; Dr. Lewis Lloyd-Evans was good enough to examine a Eucobresia diaphana, and Fred Naggs confirmed the generic identification of some unfortunately immature Trichia. My wife, Pat, was unfailingly patient as I rummaged in the undergrowth. Dr. Holyoak and Dr. Mary Seddon lent essential literature.

David Long

REFERENCE: Klemm, W., 1973. Die Verbreitung der rezenten Land-Gehäuse Schnecken in Österreich. Denkschriften der Österreichischen Akademie der Wissenschaften. Math. nat. Klasse 117, 1-503.

CONCHOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND

1022nd. (Ordinary) meeting held on 17th. February 1990 at B.M.(N.H.)

In the Chair: Mrs. M. Fogan with 36 members and friends present.

Deaths: Mr. H. Lomas (member since 1977). The death was also announced of Dr. N. Eales

Nominations and elections to membership: Harman Sciences Library Institute,
Hebrew University, Jerusalem, Israel. (elected as an institutional member)

Lecture of the day: Mr. Peter Jamieson - "The Marine Molluscs of New Zealand".

Exhibits:

- A. Seccombe - Shells of New Zealand.
- I. Killeen - "New Scientist" article on Cephalopods.
- T. Pain - New Zealand species of the genus Penion Fischer, 1884 (Buccinidae).
- B. Colville - Some Antipodean land snails.
- M. Willing - Conservation topics information (i) Cairngorm ski lift development
(ii) West Sussex proposed county conservation strategy
(iii) Nature Conservancy Council - proposed split.
- J. M. Light - Antipodean Scallops.
- J. Reynolds - Limax valentianus.
- D. W. Guntrip - Two Antipodean non-marine molluscs now living in the U.K.
- A. Rundle - Modern and fossil Cephalopod statoliths.
- J. M. Light - Testacella haliotide from a Godalming garden.

Meeting closed at 5.13 p.m.

1023rd. (Annual General) meeting held on 17th. March 1990 at B.M.(N.H.)

In the Chair: Mr. D. C. Long with 37 members and friends present.

Death of members: The deaths were announced of -

- Dr. W. S. S. van der Feen - member since 1924.
- Dr. G. A. Solem - member since 1961.
- Dr. B. Prashad - life member since 1923.

Appointment of 2 scrutineers to count postal votes:

Mrs. C. J. Pain and Mr. Worth were appointed.

Nomination and election of new members: None.

Report of Council presented by Hon. Secretary: Read and accepted.

Interim Report of the acting Hon. Treasurer: Report presented by Mrs. J. M. Light
in the absence of the acting Hon. Treasurer. Read and accepted.

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

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

Report of the Hon. Junior members Officer: Read and accepted.

Report of the Hon. Field Meetings Officer: Read and accepted.

The chairman thanked all officers and retiring members of Council for the services they have given to the Society.

Members' exhibits: see appendix.

TEABREAK

Election of auditors: Mr. N. Light and Mr. Worth were elected.

Presidential address: Mrs. M. Fogan on "Molluscs in Fiction". This address was
concluded with a question and answer session. A vote of thanks for the
address was proposed by Mr. Crowley.

Announcements and correspondence: National Museum of Wales - current exhibits in-
clude Leather-backed turtle washed-up on a Welsh beach and a "Shell in Art"
exhibit.

Results of postal ballot: All officers were elected. The new members of Council
are: Miss J. Reynolds, Dr. A. J. Rundle and Mr. M. F. Symonds.

Any other business: A framed photograph of Helix pomatia by Mr. D. G. Rands was
raffled with proceeds going to the Society.

Meeting closed at 5.06 p.m.

Appendix: members' exhibits

- B. Colville - Some snails of Crete.
E. Fogan - Murella sp. from around harbour at Mahon, Menorca.
F. Woodward - Margaritifera from Callander showing effect of acid rain.
J. E. Reynolds - Archachatina marginata Swainson. Also comics and books about snails and slugs.
C. Street - Shells of St. Martins, Scilly.
E. B. Rands - Children's books with snail theme.
D. C. Long - Marine Invertebrates of Southern Australia.
B. Verdcourt - J. Meisenheimer's "Die Weinbergschnecke", L. Forcart's "Schnecken und Muscheln". Also one of the late Alan Solem's last papers.
T. Pain - Nucella lamellosa (Gml.), Bristol Bay, Alaska Puget Sound, Washington, Trinidad Head, California.

1024th. (Ordinary) meeting held on 21st. April 1990 at B.M.(N.H.)

Joint meeting with the Tertiary Research Group

In the chair: Mrs. M. Fogan with 42 members, friends and members of the Tertiary Research Group present.

It was announced that the Hon. Secretary had resigned from that position and that Mrs. E. B. Rands has been accepted as the "Acting" Hon. Secretary.

Nominations and elections of new members:

- For election: Dr. Maria Teresa Aparicio, Museo Nacional de Ciencias Naturales, José Gutierrez Abascal, z, 28006 Madrid, Spain.
Wareo Bodon, [REDACTED], 16166 Genova, Italy.

Transfer from full to family membership: Mr. & Mrs. Whiteley.

Lecture of the day: Four short talks were given about Tertiary Fossil Mollusca.

- Mr. Steve Tracy - Eocene shells.
Dr. Adrian Rundle - Preservation of Tertiary Fossils.
Dr. Peter Long - The Coralline Crag.
Mr. John Cooper - Sheppey: a lead-in to the field meeting of the following day.

Members' exhibits and TEABREAK: (between talks nos. 2 & 3)

Announcements and correspondence: Details were read out of two field meetings:

- (i) The Isle of Sheppey, 22 April 1990.
(ii) Oulton Broad, Suffolk, 5 May 1990.

Meeting closed at 5.06 p.m.

Appendix: Members' exhibits

- Mr. S. Tracy - Some large Tertiary molluscs.
Mr. T. Pain - Genus Neptunea Roding, 1798 Type by S. D. Sandberger, 1861 Murex antiquus L., 1758.
Mr. Jim Bryant - A colour banded Tertiary mollusc (Theodoxus passeyi).
Dr. M. T. Aparicio & Dr. D. T. Holyoak - Moroccan Helicellinae.
Mr. D. C. Long - Pliocene marine molluscs from Suffolk and Cyprus.
Dr. J. Chatfield - Phenacolimax major from Massif Central, France. Collected during field meeting of the Association Française pour

Dr. A. J. Rundle

l'etude de Mollusques Continentaux.

- Some examples of Tertiary mollusc preservation. Also polythene bags and gelatine capsules for sale.

GENERAL NOTES

SNAILS ON COINS

Snails on stamps are now quite numerous; many countries which have very attractive indigenous snails have issued such stamps but I was not aware of any coins depicting them. Several of my colleagues at Kew have recently been to Cuba and one presented me with a 5 centavos tourist coin bearing a plan view of Polymita picta (Born). Doubtless some numismatist among our members will be able to add other examples. I was also given a collection of molluscs.

B. Verdcourt

ILLUSTRATIONS OF OVATELLA

Phil Palmer is right to draw attention to the lack of published illustrations of upper shore pulmonates, and his illustrations (Conchologists' Newsletter 114) are a useful addition. However, he failed to note that Otina ovata, Leucophytia bidentata and Ovatella myosotis [as Phytia myosotis (Drap.)] are all depicted and briefly described in G. E. Beedham's Identification of the British Mollusca (Hutton Group Keys, 1972), a simple but useful paperback.

Dr. T. P. O'Connor

THE SNAIL SURVEY

I am thirteen years old. I am very interested in snails. I keep some and this year they have bred. In May 1990 I did a land snail survey and about twenty five people did the survey which lasted for a week. I gave them all a notebook after they'd filled in a form saying they'd do the survey. It came to the week of the survey and it was hot and sunny every day. When the weather is like that land snails don't come out till late at night - still I didn't mind - I can't decide what the weather is going to be like. Despite the weather seventy four land snails were seen. Some people drew the snails, some people described the snails they saw and one person photographed them. I have drawn three graphs from the information that people found. One graph is of how many land snails were seen on each day of the survey. Surprisingly no land snails were seen on the Thursday. The next graph is to show where the land snails were seen and the final graph is to show the colours of the land snails that were seen. I am going to do another snail survey next year (1991) which will last for two weeks. If you would like to do it, write to: Miss Z. Robertson, [REDACTED], Warley, West Midlands, [REDACTED]. (Enclose a S.A.E. and I will send you the information about it.)

NOTE ON GOTTFRIED NÄGELE

In my note 'An undescribed snail from Tanzania' (Newsletter 112: 263) I asked if some German reader could throw some light on a person G. Naegele. Dr. Artur Roll of Tübingen has kindly written to me via Mr. Negus with a little information. Gottfried Nägele was born on 10th. November 1841 at Bonndorf (Black Forest) and was ordained as a Catholic priest on 4th. August 1868. He was pastor in Waltersweiler (actually a suburb of Offenburg) from 7th. August 1875 until his death on 17th. January 1914. It does not appear that he could have collected in Africa. Since

there is a large Catholic Mission Station at Kipatimu where most of the snails described by Boettger were found it seems likely Nägele received them from a Catholic colleague working at the Mission.

B. Verdcourt

FRESHWATER MOLLUSCS: IDENTIFICATION AND NATURAL HISTORY

A weekend course: Friday 19 April - Sunday 21 April 1991: Tutor Dr. June Chatfield at The Rogate Study Centre, near Petersfield. Residential £70, Non-residential £48.

This course concentrates on freshwater molluscs. The range of shells and their identification will be covered and excursions made to collect from a selection of habitats. Living specimens will be examined in the laboratory and their natural history discussed and observed. A series of books relating to freshwater molluscs will be on display.

Enquiries and bookings to: Anne Finlay, Rogate Study Centre, The Red House, Rogate, nr. Petersfield, Hampshire, GU31 5HN

OF SEA AND SHORE MAGAZINE, P.O. Box 219, Port Gamble, Washington 98364. Thomas C. Rice, Editor and Publisher.

I am pleased to announce the resumption of the magazine Of Sea and Shore. The Fall 1990 issue (Volume 13, Number 3) appeared last September. From 1970 to 1983, we published fifty issues of our quarterly magazine. Subscription rates are \$12.00 per year (4 issues) to U.S. addresses, \$17.50 elsewhere. Mailed First Class to U.S. & Mexico \$17.50; First Class to Canada \$19.00; Air Mail to Europe, North Africa or South America \$24.00

ADVERTISEMENT

If you are interested in malacological journals such as Journal de Conchyliologie, please contact: Dieter Schierenberg BV. Rare illustrated books and periodicals on Natural History. [REDACTED], 1016 HP Amsterdam, Netherlands. Tel.: [REDACTED] - Fax: 20-265650. All catalogues free upon request.

CHRISTMAS 1990 AND THE NEW YEAR

The Newsletter Editor sends Seasonal Greetings and good wishes for 1991 to all readers.

YOUR NEWSLETTER

My thanks to all those who wrote or telephoned in response to my 'Editorial Comment' in the June issue, no. 113. It is quite clear that the great majority are entirely satisfied with the Newsletter as it is at present. Only a very small minority expressed dissatisfaction and demanded various changes. The style and cost of all the Society's publications have been under careful review by a working party reporting to Council.

Several constructive suggestions were made in some replies which I received and these will, of course, receive careful consideration. For example, a queries and answers section, notes of exhibitions, museum displays, etc.. Suggestions con-

cerning the content of the Newsletter are naturally dependent on you, the members, to submit the material.

1989 was a good year for contributions. By now the majority of these have appeared, leaving only a small number of items 'on file' for the issues in 1991. So, during the next three or four months I shall hope to receive many more articles, field reports, notes of general interest, queries, problems, etc., etc.. It is now up to you!

P. E. Negus, Hon. Newsletter Editor

MUD CREEPERS IN CORNWALL

On 7th. August 1990 Mrs. Simper and her children of Hemington, near Bath, brought into the City Museum and Art Gallery, Bristol, a shell which they could not identify. Having looked around our display of tropical shells, they were able to identify it provisionally as the Mud Creeper Telescopium telescopium L., a fact which I was later able to confirm for them.

T. telescopium is a dull coloured, horn snail of the family Potamididae with a spire reaching a maximum of about 10cm. It is a common species of the Indo-Pacific region where it grazes on mud flats, in particular in mangrove swamps. Indeed in some islands of Indonesia it has regularly formed part of the local diet.

What is interesting in this particular case is that the shell along with about thirty of its brethren, were found by the Simper family along the tide-line of a beach at Portscatho, near Falmouth, Cornwall. The shells were found in February following severe gales and had apparently been washed up.

The origin of these shells, all around about 4cm in size, is quite a puzzle. Did a local shell shop dispose of its unwanted stock? Had a tanker flushed out its hold? Is the greenhouse effect really taking off and mangroves sprouting in Cornwall?! If anybody can explain this occurrence, I would be very pleased to hear, as would Mrs. Stella Turk at the Cornish Biological Records Unit, Institute of Cornish Studies, Trevenson House, Pool, Redruth, Cornwall, TR15 3RE.

Ray Barnett

Natural History Section, City Museum and Art Gallery, Queens Road, Bristol, BS8 1RL

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Market Harborough,
Leicestershire,

March 1991

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MOLLUSCS OF THE FALKLAND ISLANDS

On two separate occasions (August - September 1988 and February - June 1990) I have worked in the Falkland Islands as a fisheries observer. The work involved visiting commercial fishing vessels for periods of up to five weeks taking regular catch samples and recording basic biological data. This provided a good opportunity to learn about the fishery as well as looking for different molluscs. Most of my time was spent at sea but there were some chances to look at the coastline and general scenery. This is a short account of the environment, fishery and conchology.

The land consists of rocky outcrops forming hills and low mountains which resemble some parts of Wales or W. Scotland. In between are plains and valleys of peat, boggy in places, which is covered in low moorland-type vegetation where it is dry and coarse grass where the ground is more damp. On the coast there is a large grass, tussac, which forms clumps to 3m. high and was once common but is now restricted to more isolated areas. The houses in Stanley have gardens and hedges of Cupressus macrocarpa, gorse or Hebe elliptica which is native though now rare in the wild. The weather is hot and dry in summer and cool with occasional rain and snow in winter. Strong winds are common to all seasons.

There is a fishery protection zone surrounding the islands and ships from a wide range of countries buy licences valid for specific areas and seasons. The most important catch (economically) is a species of squid, Illex argentinus, which occurs around the continental slope in mid water or near the bottom. Most of the ships are jiggers from Japan, Korea and Taiwan which use a number of lines with lures and hooks attached to attract the squid. These are continuously lowered and raised from the water during the night when squid can be attracted to bright lights on the ship. East European trawlers also fish for this species. Jiggers rarely catch other animals but sometimes other species of squid, such as the larger Moroteuthis ingens, and penguins are hooked up. There are large numbers of jiggers and management of Illex stocks is an important problem.

The other ships are mainly West European trawlers which fish on the bottom at 150 - 250 m. for hake or for another squid, Loligo patagonicus. There are usually three or four tows per day. Various other fish are also processed as a bycatch. Most of these ships come from Vigo (Spain). I visited British and Spanish Loligo trawlers, a Bulgarian Illex trawler and a Japanese jigger as well as observing three day's experimental fishing on one of the patrol ships.

In addition to the required catch, many unwanted animals are often caught by trawlers. Some common fish are not worth processing, especially Notothenia spp., which are about 10 - 20 cm. long and live near the bottom. It is possible that there may be a threat to the benthic ecosystem in those areas where there is heavily concentrated bottom trawling. The amount of benthos disturbed may be several

tonnes per ship per day and there may be 10 or more ships at some times of the year. Most of the other discarded material consists of jellyfish or benthic invertebrates. The proportion of discard and its composition are variable and depend upon the locality and details of fishing gear. However, some generalisations can be made.

In trawls with a fine mesh, the most common small invertebrates could be seen. Bryozoans and hydroids were common at times as were large flattened isopods and asteroid starfish, representing hard and soft substrates respectively. There was much variety amongst these, and many of the erect, calcareous bryozoa and hydroids were large. Other common animals included a great variety of sponges, ophiuroids and brachiopods, as well as solitary, and a few branched, corals. Other classes could be found occasionally or if searched for, and penguins were sometimes caught.

Of the shelled molluscs, the most common large species were scallops (Chlamys patagonicus) or whelk-like gastropods (Fusitriton magellanicus). A volute (Adelomelon ancilla) was also sometimes common but almost always trawled in with a damaged shell. Different volutes were found further North and one of them, Provocator corderoi always has a particular anemone covering its shell. Small molluscs were not as common as the brachiopods and most were Hiatella but a few interesting Trophons, calyptraeids, trochids, bucciniids, and Marginellas could be found if searched for carefully.

The usual method of finding large molluscs (over 5 cm.) was to watch the conveyor and pick them out, at the same time as taking the fish samples for work. Small organisms could only be found on the open deck after shooting of the nets. Shells etc. would be shaken out having been trapped in the finest mesh which was clogged with hydroids. This was done for each tow unless the debris had been washed away in bad weather. Usually, only a few small shells could be found per tow (5 or 10) and often there were none.

I was able to spend a few days on land at roughly three-weekly intervals as well as a more extended period in June 1990. During this time I was able to visit most of the beaches and coastal features near Stanley. The coastline is very convoluted so it was easy to visit very exposed and very sheltered sites on the same tide on foot. Sheltered sites, such as Stanley Harbour resemble Scottish sea-lochs and are surrounded by rocky or cobbly shores covered in low (5cm.) green and brown algae. Fine filamentous algae are found lower down and large ribbed kelps, Macrocystis pyrifera, float offshore. They are anchored up to 10m. below and the holdfasts are only exposed on very low tides. Animals include about 5 spp. of starfish, 10 sponges, 5 crabs and various worms and isopods which are abundant. The most common mid-shore molluscs are limpets (Pachysiphonaria lessoni, a pulmonate, and Nacella aena) and mussels (Mytilus chilensis, Brachydontes purpuratus). On the upper shore Lasaea may form layers beneath stones. Low down, under stones are large chitons (Plaxiphora aurata) and small bluish whelks (Pareuthria fuscata). Washing of fine algae yields many small, grey rissoaform molluscs and little white bivalves. Coiled gastropods did not seem as common as in Britain.

Exposed rocky shores are clothed with tufted algae and Brachydontes beds down to the level of the large kelp. The kelp in these places is a species resembling a more robust version of our Laminaria hyperborea with fronds up to 2m. across and 2cm. thick with a 5 - 10 cm. thick stipe which dries solid on the beach. There are other large kelps including the long stringy one of more sheltered localities. Upper shore molluscs include another limpet (Kerguelenella lateralis) and a small wrinkle (Laevilittorina caliginosa). There are few other animals. In the low rock pools are sponges, anemones, chitons (Tonicia atrata) and whelks (Pareuthria magellanica). The lowest sand-blasted rocks have 10 cm. keyhole limpets (Fissurella maxima) which are very difficult to remove, even with a firm grip under

the shell.

The beaches have fine whitish sand and often piles of huge kelp remains in some places. A few shells can be found at middle exposure sites. Various trochids, calyptraeids, Trophons and bivalves can be picked up as well as the shore species. The washed-up kelp often has Nacella mytilina, like a large (2cm.) Patina, and Gaimardia, a 1cm. yellow bivalve attached by byssus. Shell sand can be found in places and contains small bivalves (most common), rissoacea, cerithiacea and small muricids.

There is a commercial SCUBA diver in Stanley and I was able to arrange a couple of dives in shallow water. In 2m. off the jetty was a Mytilus bed with tunicates, anemones and the large muricid, Trophon geversianum. At another site further out were long strands of Macrocystis on rocks and cobbles. The rocks were covered in starfish, sea-cucumbers, ascidians and sponges; and golf-ball sized sea urchins formed layers between rocks with their 5cm. spines sticking out. As I had dived only in Britain before, it was quite impressive. The large chitons and key-hole limpets were there as well as trochids with spiral red bands (Photinastoma) and a small brownish volute with a red animal. There were many nudibranchs which were larger than those we see here. There were also a few brachiopods attached to the rocks at 5m. A seal would swim round to examine us occasionally. Visibility was about 6m. and the water slightly cooler than the Irish Sea (comparing winter temperatures).

My last trip before leaving in June 1990 was a flight to Pebble Island, one of the Northern islands about 60 km. from Stanley. The general marine ecology was similar but there were a few local changes such as the presence of large numbers of volute shells on the beaches and I was also able to see more of the birds and sea-lions. There seemed to be very few land snails at any site. I found a few (zonitids ?) washed up on a beach and there are slugs (Arion lusitanicus ?) on the footpaths near gardens at night in Stanley but after several walks looking for non marine molluscs I decided time spent on the coast would be much more productive. There is almost no life in the small, peaty rivers, ditches and streams.

Identification of the specimens provided some problems. A search through various biological abstracts pointed part of the way and references from papers were some help. However, many old and obscure papers were unavailable and the more recent reports tended to describe only new species and dismiss the common ones as well known, in spite of the fact that they are figured in very few publications. My identifications were achieved with help from others and a little use of identification by a process of elimination! Some of the most useful references are given below.

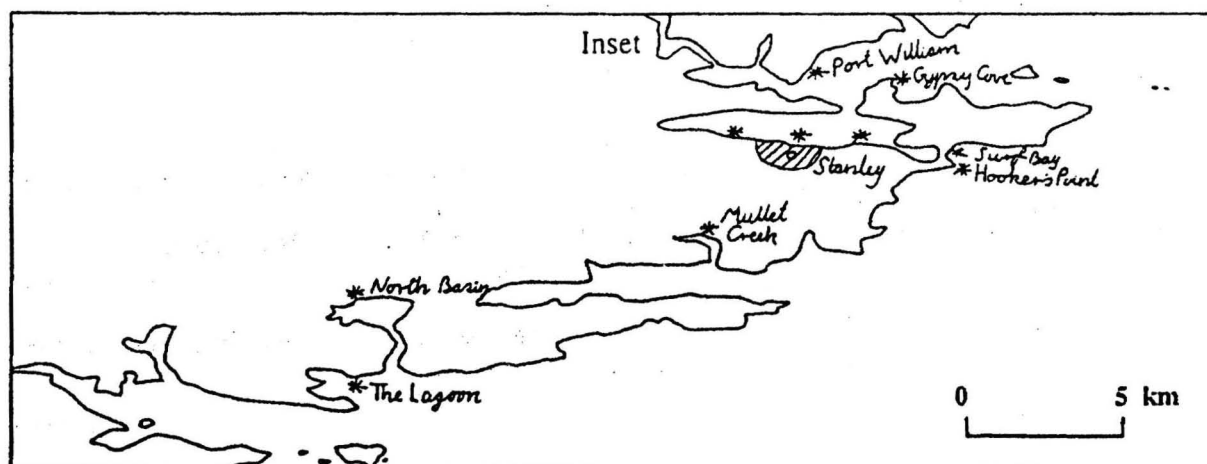
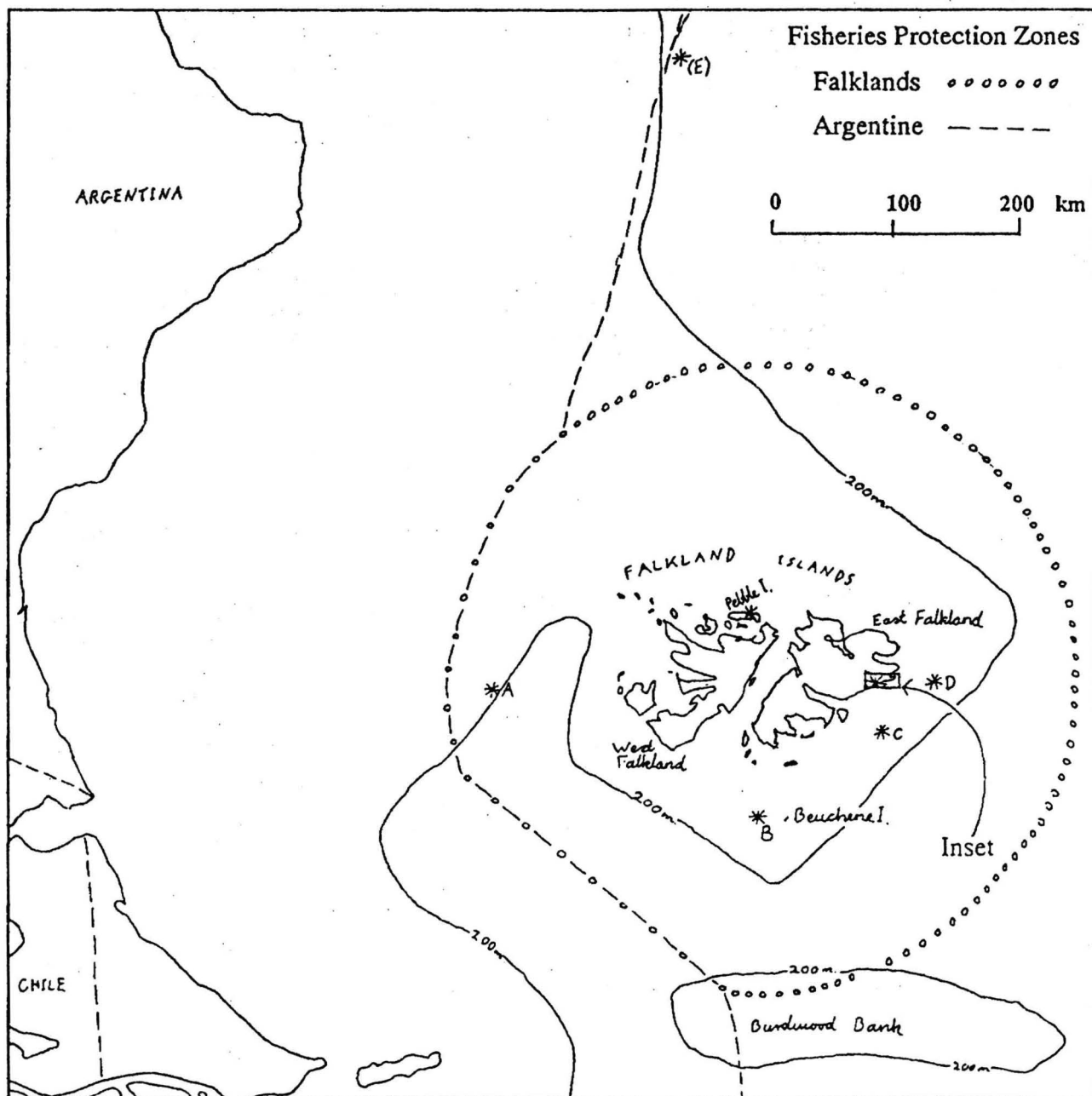
I am grateful to Frank Swinnen for provision of contacts and to the following people for help with identifications: R. A. van Belle, J. Christiaens, R. Houart, W. Ponder, G. Poppe, D. Reid, A. Verheiken, R. van Walleggem. I would also like to thank Marie Carter and Alison Trew for obtaining references.

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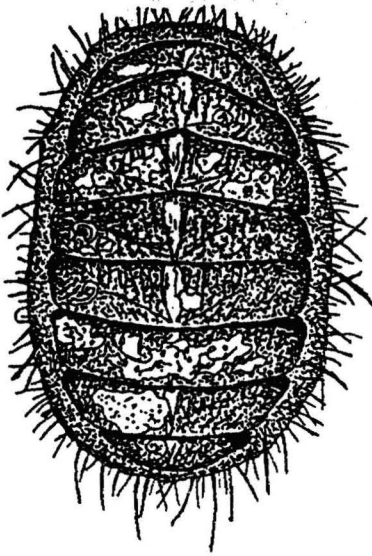
Tim Worsfold

Map showing sites visited (*)



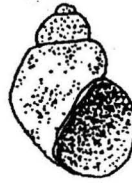
Some intertidal shells

Plaxiphora aurata
(Spalowsky, 1795)
Hooker's Point, 1988



I

Laevilittorina caliginosa
(Gould, 1849)
Hooker's Point, 1988



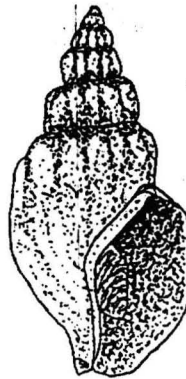
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Kerguelenella lateralis
(Gould, 1846)
Hooker's Point, 1988



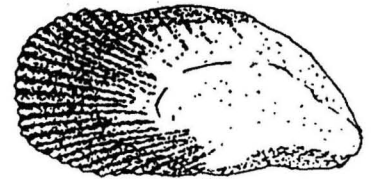
I

Pareuthria fuscata
(Bruguiere, 1792)
Stanley, 1990



I

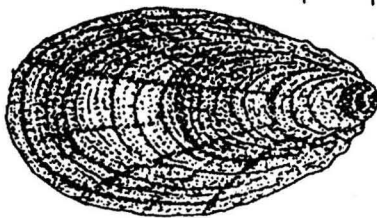
Brachydontes purpuratus
(Lamarck, 1797)
Mullet Creek, 1990



I

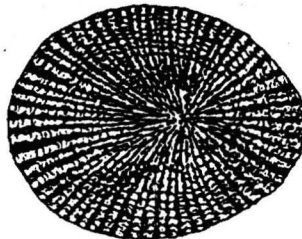
Some shallow water and beach shells

Nacella mytilina
(Helbling, 1779)
Gypsy Cove, 1990



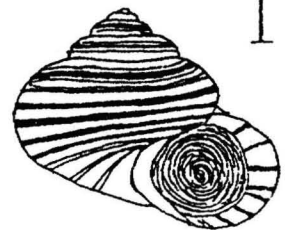
I

Nacella flammea
(Gmelin, 1791)
Port William, 1990. 5m.



I

Photinastoma taeniata
(Wood, 1828)
Port William, 1990. 5m.



I

Xymenopsis corrugatus
(Reeve, 1840)
Stanley, 1990. 5m.



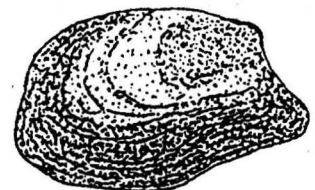
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Trophon lamellosus
(Gmelin, 1791)
Port William, 1990. 5m.



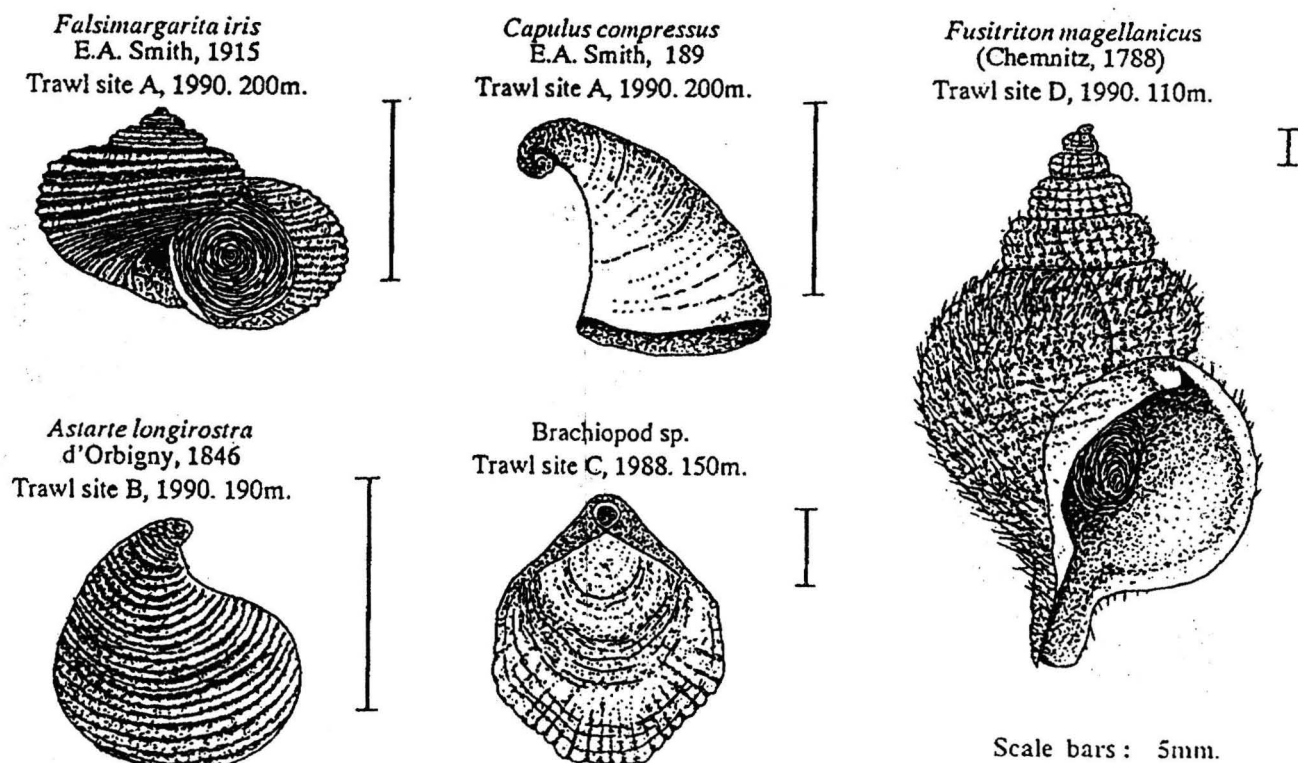
I

Gaimardia trapesina
(Lamarck, 1822)
Pebble Island, 1990



I

Some deep water (trawled) shells



LYMNAEA STAGNALIS (L.), RECENT AND FOSSIL, IN ANGLESEY

Many years ago a geological friend (Joe Davies) gave me a small sample of a freshwater marl from "near Benllech" in Anglesey. Mr. Davies told me (in litt. 14.8.1950) that it was "Quite an extensive deposit. A long trench dug into the deposit showed a thin covering of peat overlying shell-marl - not bottomed." Later, I could not ascertain the exact site and neither Greenly (1919) nor the geological map of the Geological Survey mentioned the deposit. Recently, however, Miss Frances Cattanaach of the North Wales Wildlife Trust considered Mr. Davies' deposit to have been the present Nature Reserve of Cors Goch which is about 1½ miles SW of Benllech.

A stratigraphical survey has been made (Scourse & Davis 1987) and the generalised sequence of deposits is clay, followed by marl with freshwater shells overlaid by peat and lastly a fen vegetation.

The molluscan spp. in the small sample I examined were Valvata cristata Müller, V. piscinalis (Müller), Lymnaea stagnalis (L.), L. peregra (Müller), Sphaerium corneum (L.), Pisidium hibernicum Westerlund and P. nitidum Jenyns. (The Pisidium spp. were determined by Dr. J. G. J. Kuiper).

None of these species needs comment except L. stagnalis. As a Recent species L. stagnalis is recorded from several hard-water localities in Anglesey, and then there is a large gap (some sixty miles) to the east before the species appears in Cheshire. The species is notoriously easy to introduce and establish but its occurrence in a freshwater marl of post-glacial age confirms that the species is truly native in some, at least, of its Anglesey habitats.

The Anglesey localities are Llyn Coron and Llyn Maelog (both Boycott 1936), Llyn Llywenan 1953 (coll. Hynes: McMillan 1956), the river Cefin close to Malldraeth Yard, 1920 (coll. Stelfox: McMillan 1957) and the following four localities kindly supplied by Dr. Kerney; Cemaes, 1981 coll. K. Alexander: Llangefni square (no further information), 1973 coll. A. Bush; Pen-y-Parc, reservoir 1989 coll. A. P. Bowles; and Gors Goch 1964, coll. J. B. Hall.

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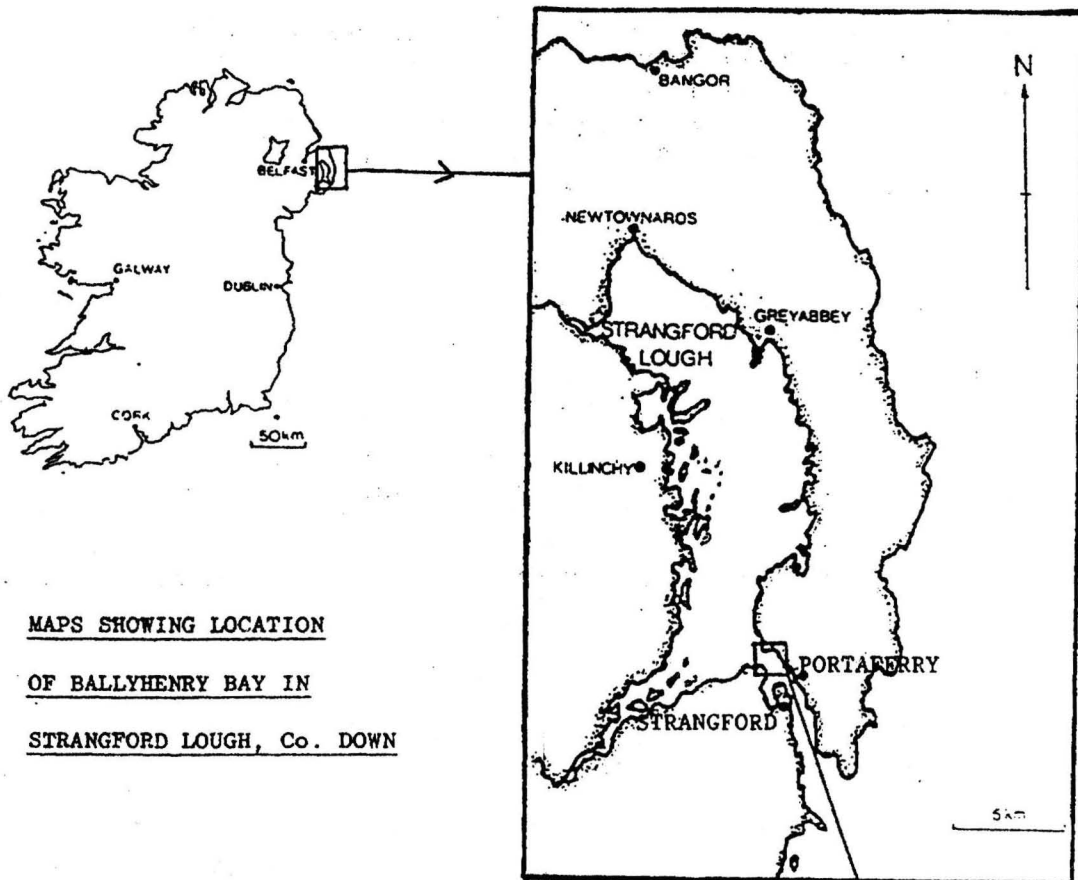
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Nora McMillan, Dept. of Zoology, Liverpool Museum

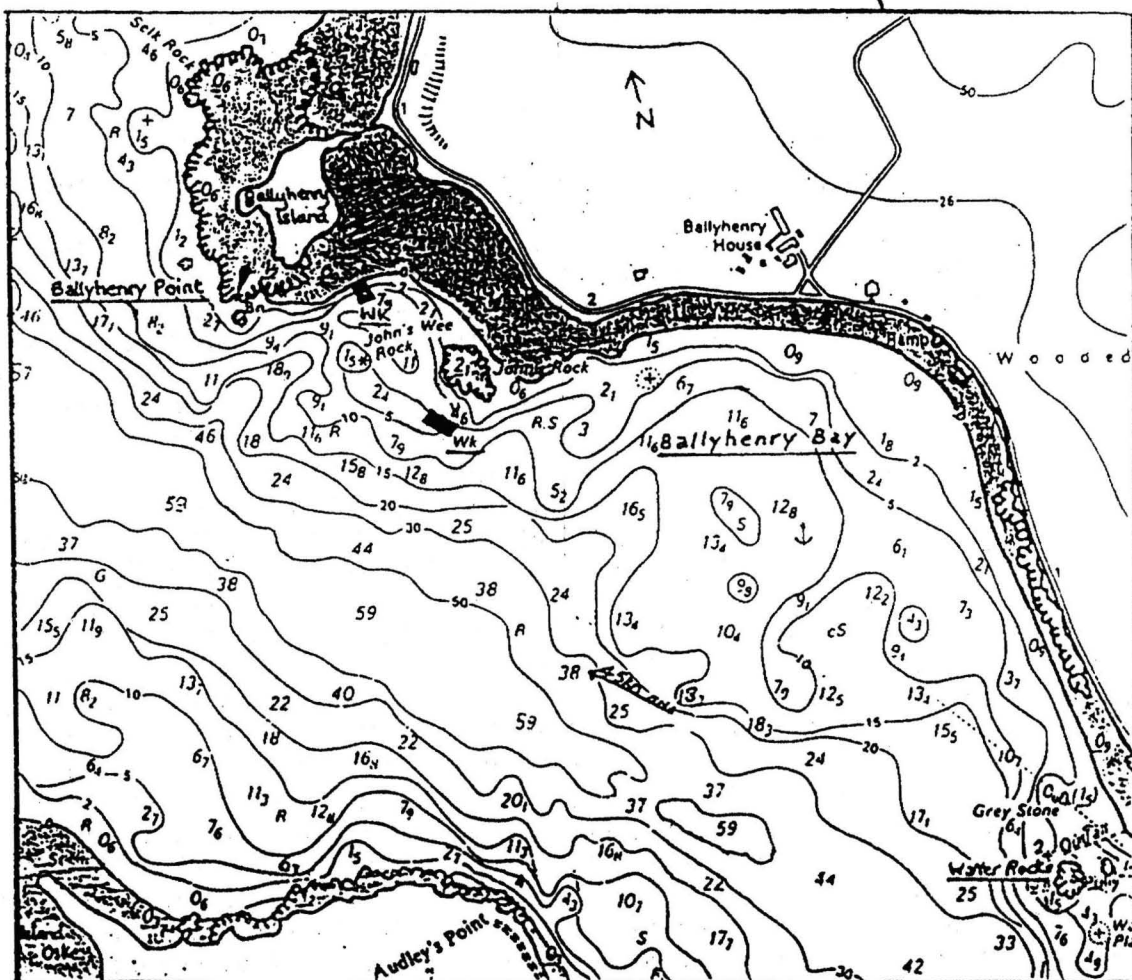
RECORDING MOLLUSCA IN IRELAND: BALLYHENRY BAY, STRANGFORD LOUGH, CO. DOWN

Strangford Lough is a shallow sea lough about 15 miles long (from north to south), and a maximum of 5 miles wide (see maps). It is connected to the sea via a narrow channel ('The Narrows') to the south-east. The lough is sheltered from wave action, but currents, particularly in 'The Narrows' can be strong - up to 8 knots. The lough is fully saline apart from small localised influences, and has a tidal range of up to 4 metres.

For about 3½ years, I have been regularly visiting Strangford Lough to collect and record the molluscs - both through studying the shore and diving. In particular, in the autumn of 1988, I started a part-time MSc. based at the Marine Biology Station, Portaferry, to study the molluscan fauna of the lough. Of the many excellent sites there, Ballyhenry Bay stands out as one of the richest areas for mollusca (see maps). The majority of the shore is boulders and stones on gravel and muddy sand, with little algae present. To the north, between Johns Rock and Ballyhenry Island (owned by the National Trust), the boulders lie on sediment, with mud in the bay between the island and mainland. A causeway of muddy gravel links Ballyhenry Island to the main shoreline. The island itself is soft bedrock as is Johns Rock, Walter Rocks, and outcrops to the south of the main bay. The dominant algae here is Ascophyllum nodosum, with a fringe of Fucus serratus, leading to kelp at low water. The bay is very sheltered to wave action, but Ballyhenry Point and Walter Rocks are exposed to current, and can only be dived during a 30 minute slack period around high or low water. Offshore, the majority of the bay is less than 20 metres deep, with kelp on boulders in the current-swept areas, and sand/mud gravel in the bay itself. The bay then drops sharply down to a 60m trench running up the centre of 'The Narrows'. This creates cliff faces at Ballyhenry Point and Walter Rocks which are particularly rich in marine life - lobsters, octopus, hydroids, dead men's fingers, boring sponges are all common here. There are two wrecks in the bay. The largest and most conspicuous, an iron Liberty ship called the Empire Tana (but known locally as Lees Wreck) broke into two sections while being towed to a breakers yard. Outer Lees Wreck (the stern) is visible at all states of the tide, with the depth to the sea bed being 11 - 15m. It is swept by strong currents, but can be dived at any time on an ebbing tide. It is covered with sponges and plumose anemones. Inner Lees Wreck is grounded near Ballyhenry Island



MAPS SHOWING LOCATION
OF BALLYHENRY BAY IN
STRANGFORD LOUGH, Co. DOWN



in very shallow water, but unfortunately it is just out of reach on foot at low spring tides. In the main bay is a small wooden wreck in about 8 - 10m, known as 'The Pins' from the large copper pins to be found there. It can be dived at any state of the tide. There are many species of red algae on and close to this wreck. Finally, the southern part of Ballyhenry Bay is used as an anchorage for small boats.

During the period in which I have investigated this area, I have had 6 visits to the shore, and dived the bay (three times 8 - 16m), Outer Lees Wreck (thirteen times 12 - 21m) and Ballyhenry Point (seventeen times 12 - 45m). Samples of algae/hydroids/bryozoa were taken after a general search from both the shore and while diving, for further examination at home. Those from the shore were soaked in fresh water overnight, and the detached mollusca preserved in 70% alcohol. Samples from sublittoral sites were put into trays with sea water, and left for 1 - 2 days to allow any small nudibranchs to crawl out. These animals were removed, and the samples thereafter treated as those from the shore.

131 species (119 live) were recorded from this area, making it one of the richest sites in Ireland. A provisional checklist of mollusca for the whole lough, incorporating all sources of records, has 274 species (dead and live), with 225 of these species seen living since 1960. The total for Ballyhenry Bay therefore represents more than 50% of the recently known living mollusca in the lough. In addition, 25 new or updated records for Sea Area 28 for the Sea Area Atlas (published by the Conchological Society of GB & Ireland [1982] ed. D. Seaward) have been found. Few of the species were exceptionally rare, but some species normally considered to be sublittoral or only found at extreme low water were found higher on the shore than expected - an example of the 'emergence phenomenon'.

Notes on selected species:

Acanthochitona crinitus: found on the shore at Ballyhenry Island and sublittorally down to 5m. Not normally found in 'The Narrows'. Locally very common further north in the lough.

Emarginula fissura: normally considered a sublittoral species, but found here and elsewhere in the lough at low water; an example of the 'emergence phenomenon'.

Calliostoma zizyphinum: a common species on the south side of Ballyhenry Island, but not on the more exposed point. The white form 'lyonsi' is common in the lough, and here constituted 77% of the population on the shore, and 63% offshore.

Rissoa porifera/Rissoa rufilabrum: New records for Sea Area 28, porifera and rufilabrum are now considered to be subspecies of Rissoa lilacina. This is the first record of porifera from Ireland.

Cerithiopsis tubercularis: a new area record from Outer Lees Wreck, found only at one other site in the lough.

Rissoella globularis: this is a new published record for Ireland (see Ir. Nat. J. 23 p.161 [1989]). An earlier unpublished record has recently been brought to my attention (Shelagh Smith pers. comm.) from elsewhere in the lough.

Pyramidellids: seven species of pyramidellid have been found here. Jordaniella nivosa has been found at only one other site in the lough.

Nudibranchs: the majority of the species were found in the sublittoral, and all were relatively common. Lomanotus marmoratus, Ancula gibbosa and Cothona foliata are amongst those seen less often.

Crenella decussata: found in its normal habitat amongst sandy/shelly gravel both on the shore at Ballyhenry Island, and offshore there.

Eledone cirrhosa: can be seen in the open at about 20-30m off Ballyhenry Point.

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Julia Nunn

Checklist of species

*new or updated record for Sea Area 28

Live: Leptochiton asellus; Lepidochitona cinereus; Tonicella marmorea; T. rubra; Acanthochitona crinitus; Emarginula fissura; Diodora graeca; Tectura testudinalis; T. virginea; Patella vulgata; Helcion pellucidum; Margarites helicinus; Gibbula cineraria; G. tumida; Calliostoma zizyphinum; Tricolia pullus; Lacuna pallidula; L. parva*; L. vineta; Littorina littorea; L. mariae; L. obtusata; L. neglecta*; L. saxatilis; Rissoa porifera*; Rissoa rufilabrum*; R. interrupta; R. parva; Alvania punctura; A. semistriata*; Onoba semicostata; Cingula cingillus; Skeneopsis planorbis; Cerithiopsis tubercularis*; Trivia arctica; T. monacha; Lamellaria latens; Velutina velutina; Euspira poliana*; Boreotrophon truncatus*; Nucella lapillus; Ocenebra erinacea; Buccinum undatum; Hinia incrassata; Raphitoma linearis*; Chrysallida spiralis*; Odostomia turrita*; Odostomia unidentata*; Brachystomia albella*; B. eulimoides*; B. rissoides; Jordaniella nivosa*; Rissoella diaphana; R. globularis*; R. opalina; Omalogyra atomus; Retusa obtusa*; Alderia modesta; Elysia viridis; Berthella plumula; Tritonia hombergi; T. plebeia; Lomanotus marmoratus*; Dendronotus frondosus; Doto coronata; D. dunnei; D. fragilis; Goniodoris nodosa; Ancula gibbosa; Acanthodoris pilosa; Onchidoris muricata; Aegires punctilucens; Limacia clavigera; Polycera faeroensis; Cadlina laevis; Archidoris pseudoargus; Discodoris planata; Jorunna tomentosa; Coryphella browni; C. lineata; C. verrucosa; Flabellina pedata; Cuthona concinna; C. foliata*; Catriona gymnota; Eubbranchus pallidus; E. tricolor; Facelina coronata; F. bostoniensis; Nucula nitidosa*; N. nucleus; Mytilus edulis; Crenella decussata; Musculus discors; Modiolarca tumida; Modiolus modiolus; Palliolum striatum*; P. tigrinum; Chlamys distorta; C. varia; Aequipecten opercularis; Pecten maximus; Anomia ehippium; Heteranomia squamula; Pododesmus patelliformis; Lasaea rubra; Kellia suborbicularis; Parvicardium exiguum*; P. scabrum; Circomphalus casina; Paphia rhomboides; Venerupis senegalensis; Clausinella fasciata; Timoclea ovata; Turtonia minuta; Mya truncata; Hiatella arctica; Thracia phaseolina*; Eledone cirrhosa.

Dead: Turritella communis; Manzonina crassa; Aporrhais pes-pelecani; Glycymeris glycymeris; Limatula subauriculata; Lucinoma borealis; Cerastoderma edule; Spisula solida; Macoma balthica; Corbula gibba; Thracia villosiuscula; T. convexa.

SOME NOTES ON EAST AFRICAN ENDODONTOID SNAILS - PART 1

'We are very small and God meant us to deal with little things' E. Temple Thurston, 'The Open Window' 1913.

The term endodontoid in the title is used advisedly. Since the publication of Solem's two magnificent volumes on the group as it occurs in the Pacific (1976, 1984) the former delimitation of the family Endodontidae is known to have been too wide and the family has been split. The Endodontidae themselves are now restricted

to the Pacific Basin. In the rest of the world the family has always been used in a wide sense. How many families are actually involved will remain uncertain until all areas have been subjected to the same thorough coverage. I have always been interested in the group in Tropical Africa where material has mainly been referred to Punctum and Trachycystis, at least recently. In the early days other erroneous or wide-embracing generic placings were used of course. Recently Van Bruggen (1984) has used the family Punctidae for all the species described from Africa which have at some time been ascribed to Punctum; and Charopidae for Trachycystis and other genera mentioned in these present notes. One species formerly always considered a Punctum he has transferred to Toltecia, a genus also recently used for the Mediterranean and Madeiran Punctum pusillum (Lowe). Toltecia was established by Pilsbry (1926) as a subgenus of Thysanophora Strebel & Pfeffer for three species, one from Nicaragua, one from Mexico, Jalisco (the type of the subgenus) and the third from Guatemala. At that time its position was uncertain but 'it recalls Punctum somewhat'. It has recently been shown that Toltecia pusilla should be called Paralaoma caputspinulae (Reeve) (Gittenberger et al., 1980; Climo, 1981; Roth, 1987). Although Lowe's epithet is much older Helix pusilla was twice pre-occupied before he used it so the name is not available. It turns out that Paralaoma caputspinulae, described from New Zealand, is one of those species which has spread easily and become widely distributed. It must have reached Madeira before 1830 but that island was visited by most ships sailing to New Zealand from the earliest time to take on wine and fresh food. The type species of Paralaoma, P. raoulensis Iredale from the Kermadec Islands is a synonym. The type of Thysanophora subg. Toltecia is T. (T.) jaliscoensis Pilsbry; Pilsbry later considered this to be a subspecies of Punctum conspectum (Bland) but this is now considered a synonym of Paralaoma caputspinulae. I am satisfied that none of the tropical African species is this, but it should be looked out for.

As a start I give a chronological list of species, admittedly a thoroughly unscientific proceeding, together with references, distributions, drawings and notes.

Not only are the species mainly small and difficult to dissect, little living material has been available. Until all have been dissected or, at least had an examination made of their radula, it will not be certain if some belong to Punctum and its allies or to Trachycystis sensu latissimo. Almost certainly a larger number of genera are involved. Watson (1934), in a classical paper on the South African species, divided Trachycystis Pilsbry into a number of sections, many of which would probably now be given generic rank.

LIST

Punctum cryophilum (von Martens)

Helix (Patula) cryophila von Martens, 1865: 182; 1866: 94; Blanford, 1870: 474; Jickeli, 1874: 54, t.1/4 & 4/17; Bourguignat, 1883: 111.

Punctum cryophilum (von Martens); Connolly, 1928: 167; Bacci, 1951: 78.

TYPE LOCALITY. Ethiopia: Simien, near Bayeta, leg. Schimper (fortuitously) (Holotype, Humboldt Univ. Mus., E. Berlin; paratype, BM).

The type was probably the first to be obtained from a herbarium specimen. It was found by Dr. Graf zu Solms-Laubach in the Berlin herbarium in earth between the roots of Primula simensis (now Primula verticillata Forssk. subsp. simensis (Hochst.) Smith & Forrest) collected in the Simien near Bayeta at 3000 m. I could find no material from this locality at Kew but turning to Engler's 'Ueber die Hochgebirgsflora des tropischen Afrika (Abhandl. der Königl. Preuss. Akad. Wiss. Berlin for the year 1891): 329 (1892) I found that the specimen was collected by W. Schimper under his number 1854. For notes on Schimper see J. B. Gillett 'W. G. Schimper's botanical collecting localities in Ethiopia' Kew Bull. 27: 115-128 (1972).

I noted in 1958 that the holotype had unfortunately been ruined, presumably by Thiele for a radula. It has been re-examined in 1989 but this merely confirms it is really too poor for comparison with fresh material since the damage unfortunately obscures the fine sculpture; there were probably fine lines between the ribs; spiral sculpture is not evident now above but there are traces in places on the base. Quite possibly species I mentioned at the end of this account does actually belong here. The possible conspecificity of cryophilum and hottentotum should be borne in mind but much more material from the whole of tropical Africa will need examining before serious comment can be made. Topotypic material of cryophilum is much needed since this is the earliest epithet for an African Punctum. Jickeli's figures are presumably drawn from his own collections made at Hamaszen, MeKerka (Hamacen) i.e. near Asmara in Eritrea and Mt. Enjetal, Habab Nacfa which he identified with von Martens' species. He also records material collected in 'S. Abyssinia' by Heuglin and Steudner and at Lasta and Adigrat by Blanford. Connolly (1928) records it from Serpent Lake, Wouramboulchi collected by Omer Cooper.

Trachycystis abyssinica (Jickeli)

Helix (Pella) rivularis von Martens, 1866: 93 non Krauss.

Helix (Patula) abyssinica Jickeli, 1874: 54, t.4/17; Bourguignat, 1883: 35 & 111.

Pyramidula (Gonyodiscus) imitata E. A. Smith, 1903: 317, t.4/14.

Trachycystis pseudocharopa Preston, 1911: 468, t.11/14.

Trachycystis approximans Preston, 1911: 468, t.11/15.

Punctum abyssinicum (Jickeli); Bacci, 1951: 78.

TYPE LOCALITY. (of abyssinica). 'Central Ethiopia', leg. Heuglin (Humboldt Univ. Museum, E. Berlin). (of imitata). Kenya, 'E. Uganda' (the Kenya/Uganda border was far to the east at this time), Mau Escarpment, 6500-9000 ft., leg. Doherty (syntypes, BM 1901.12.21. 126-129). (of pseudocharopa). Kenya, Naivasha, leg. R. Kemp (holotype, Tervuren, MRAC 26225). (of approximans). Kenya, Mt. Kenya to Rumuruti, leg. ? (holotype, Tervuren, MRAC 26210; paratypes BM 1911.10.12.198-199).

The following additional material has also been seen. Kenya, Naivasha (Hale Carpenter), Muguga (Verdcourt), Limuru, 7200 ft. (D. C. Thomas) and Marsabit, Lake Paradise (Hesse). Tanzania, between Ngare Nanyuki and Usa (Verdcourt).

The holotype of T. abyssinica was examined in 1958 and again in 1989. It also is spoilt but is distinctive by its rather large size and very strong transverse sculpture with only an obscure spiral element. Only recently did it become evident to me that it is conspecific with T. imitata and a direct comparison of the types settled the matter. Examination of the holotype of T. pseudocharopa showed it to belong to the same species and was more adult than the type of T. imitata; it is a dirty specimen but shows a smooth apex, very strong close ribs and no obvious spiral striae but 2-6 fine transverse striae are visible between the ribs. T. approximans was also discovered to be the same species and also more adult than the types of T. imitata; the paratypes are far too poor to establish this identity but examination of the holotype leaves no doubt.

Afropunctum seminium (Morelet)

Helix seminium Morelet, 1873: 329.

H. zanguebarica Craven, 1880: 217, t.22/4 a,b,c.

Thapsiella connollyi Preston, 1912: 70, f.3.

?Sitala kigomaensis Germain, 1919: 351, f.32,33.

Afropunctum mermodi Haas, 1934: 221, f.1; Verdcourt, 1959: 91.

Kaliella connollyi (Preston); Connolly, 1939: 165.

Thapsia vesti sensu Sparks & Grove, 1961: 359, t.2/K-M non Jickeli.

Afropunctum zanguebaricum (Craven); Verdcourt, 1963: 158; van Bruggen, 1966: 343.

A. seminium (Morelet); Verdcourt, 1981: 325, f.1; 1987: 437; 1988: 90.

TYPE LOCALITY (of seminium). Gabon, without locality, leg. Marche & de Compiègne (syntypes BM 1893.2.4.990-2); (of zanguebarica). Tanzania, East Usambara foothills, Magila, leg. Craven (syntypes BM 1891.3.7.16-18); (of connollyi). Zimbabwe, Victoria Falls, leg. Connolly (BM); (of kigomaensis). Tanzania, Kigoma, leg. ? (type not found, Paris ?); (of mermodi). Zaire, Kasai, Luluabourg, leg. ? Romieux (syntypes, Geneva).
More details may be found in my 1981 paper and 1987 & 1988 notes. Sparks & Grove figure the species but their rather poor figures do not show the characteristic sculpture. A good SEM picture is still a desideratum and the species still awaits dissection to establish its position*; suitable material is now available for this collected in Nigeria. It is very distinct and easily identified.

Punctum brucei (Jickeli)

Helix brucei Jickeli, 1874: 57, t.4/19; Bourguignat, 1883: 111.

Punctum brucei (Jickeli); Bacci, 1951: 78.

TYPE LOCALITY. Ethiopia, environs of Mekkerka, leg. Jickeli (Humboldt Univ. Mus. E. Berlin).

Once again the material is in a very bad condition and has been re-examined recently. The type is striate but the spiral element obscured by damage.

Punctum abbadianum (Bourguignat)

Helix brocchii Jickeli, 1874: 56, t.4/18 non Calcara.

H. abbadiana Bourguignat, 1883: 110.

Punctum abbadianum (Bourguignat); Bacci, 1951: 78.

TYPE LOCALITY. Eritrea, near Massawa, Sceic Said I., (Beccari Exped., leg. Issel).

Punctum hottentotum (Melvill & Ponsonby)

Helix hottentota Melvill & Ponsonby, 1891: 239; 1892: 94, t.4/6.

Trachycystis paula Melvill & Ponsonby, 1907: 99, t.6/11.

Trachycystis hottentota (Melvill & Ponsonby); Connolly, 1912: 138.

Punctum hottentotum (Melvill & Ponsonby); Connolly, 1925: 149; 1939: 257.

Toltecia hottentota (Melvill & Ponsonby); van Bruggen & Meredith, 1984: 161.

TYPE LOCALITY. (of hottentotum). South Africa, Cape Province, Port Elizabeth, leg. Crawford (holotype, BM, 1905.1.26.23). (of paula). South Africa, Transvaal, Johannesburg, leg. McBean (holotype, BM, 1907.7.20.43).

How far this species extends north is uncertain. Van Bruggen and Meredith record it from Nairobi and a number of specimens from East Africa resemble it fairly closely.

Comparisons with the species described from Ethiopia whilst all the types were in my hands showed that abyssinica is much larger with much more pronounced raised transverse striae; brucei is more similar but has a larger protoconch and narrower umbilicus and is also smaller but not adult; cryophilum is rather smaller with more spaced, more regular ribs, not so tall and somewhat more angular above but probably closely related. P. hottentotum has very strong spiral striae within the umbilicus. It is much larger than P. pygmaeum and unquestionably quite different.

* A. J. de Winter tells me (in litt.) that this is a Euconulid near to 'Guppya rumrutiensis'; his findings will be published soon.

Prositala butumbiana (von Martens)

Helix butumbiana von Martens, 1895: 179 & 1897: 58, t.3/22; Verdcourt, 1969: 176, 180.

Sitala (Prositala) fernandopoensis Germain, 1915: 288 & 1916: 231, t.9/11, 10/9-11; Connolly, 1928:538.

Prositala butumbiana (von Martens); Verdcourt, 1983: 180, figs. 1, 2, t.14/1-4.

TYPE LOCALITY (of butumbiana). Uganda, Kigezi, Butumbi, Migere, leg. Stuhlmann (holotype, Humboldt Univ. Mus., E. Berlin) (seen) (paratype, BM). (of fernandopoensis). Fernando Po (Malabo), Bahia de S. Carlos, Basile, leg. Fea (syntypes Paris & Genoa).

This species has been fairly adequately dealt with in my 1983 reference but dissection is still needed.

Within East Africa the species has also been found in Uganda, Toro District (Fisher) and Kenya, Kakamega Forest, Kisieni (Holm) & Cherangani Hills, Kamatira Forest (Holm). As mentioned in my 1983 paper Germain (1913) made Helix butumbiana the type of a subg. Massaihelix of Halolimnohelix Germain. Massaihelix has priority over Prositala Germain but is a most unfortunate name; it is not a Helicid and comes from nowhere near Masai country, was not properly described nor was the type seen by Germain. I am suggesting that it should be suppressed.

Punctum ugandanum (E. A. Smith)

Pyramidula (Gonyodiscus) ugandana E. A. Smith, 1903: 317, t.4/13.

Punctum sp.; Verdcourt, 1983: 220.

Punctum ugandanum (E. A. Smith); Verdcourt, 1988: 150, figs. 1-6.

TYPE LOCALITY. Kenya, 'E. Uganda', Mau Escarpment, 6500-9000 ft., leg. Doherty (lectotype and three paratypes, BM 1901.12.21.132-5).

The species is widespread in Kenya occurring at Kijabe, Lake Naivasha, Isuria Escarpment, Kakamega Forest and Marsabit but few specimens have been collected. Full details are given in my 1988 note.

Trachycystis lamellifera (E. A. Smith)

Pyramidula (Gonyodiscus) lamellifera E. A. Smith, 1903: 317, t.4/15.

Trachycystis rugosa Preston, 1911: 468, t.11/16.

Trachycystis lamellifera (E. A. Smith); Verdcourt, 1984: 373, t.21.

TYPE LOCALITY. (of lamellifera). Kenya, 'E. Uganda', Mau Escarpment, 6500-9000 ft., leg. Doherty (syntypes, BM 1901.12.21.136-140). (of rugosa). Mt. Kenya, 9000-10000 ft., ?R. Kemp (holotype, Tervuren; paratypes, BM 1911.10.12.203-4 & 1937.12.30.2082, 2041 & Liverpool, Salisbury Collection 1965.141).

There is also material at the BM and Liverpool labelled rugosa var. levior. T. lamellifera has been found in Kenya at two sites on Mt. Elgon, Timboroa, Molo, Maralal, Mt. Kenya (several sites) and in Tanzania in the Crater Highlands at Oldeani and Ngorongoro. Full details and an SEM picture are given in my 1984 note.

Trachycystis (Psichion) ariel (Preston)

Phortion ariel Preston, 1910: 531, t.8/15.

Trachycystis ambigua Connolly, 1922: 116 & 1925: 141, t.4/9 & 1939: 265; Verdcourt, 1952: 62, fig. 3.

Sitala ariel (Preston); Haas, 1936: 20.

Trachycystis ariel (Preston); Verdcourt, 1960: 112, 115 & 1978: 19 & 1983: 220; van Bruggen, 1969: 56, fig. 19 & 1984: 162.

TYPE LOCALITY (of ariel). Kenya, Shimba Hills (holotype, Tervuren: paratype, BM 1911.10.12.76). (of ambigua). Mozambique, 40 km. NW. of Macequece, headwaters of R. Inyamkarrara, Cressy (holotype, BM, 1925.8.4.29).

This species belongs to Psichion Gude, kept up as a genus by Thiele but given subgeneric rank by Watson (1934). The species is widespread in East Africa and also in Mozambique, Malawi, Zimbabwe and Zululand. Kenya: Marsabit (Holm 149, 152), Kakamega Forest, Yala R. (Powell), Elgon, S. side, Kimilili R. (Holm 115), Kijabe (B. & L. D. Verdcourt), Nairobi City Park and Karura Forest (Verdcourt), Kamiti Forest (Polhill 201), Thika, Chania Falls (Polhill 119); Ngong Hills (Verdcourt, Polhill 61, 105), Nyambeni Hills (Hemming, Howland & Verdcourt), Shimba Hills (? Kemp), Mrima Hill Forest (Verdcourt). Tanzania: East Usambaras, Amani & by R. Kwamkuyu (Verdcourt), West Usambaras, Mkusi (Verdcourt) & Bumbuli (Kohl-Larsen fide Haas), Ngorongoro, Gibb Farm (Ngorongoro Safari Lodge) N. of Karatu (A. C. & W. H. van Bruggen); Uluguru Mts., Bunduki, Gorge Mungula, 1500 m. (Basilewski & Leleup in MRAC 788872-77).

Material from Kenya, Teita District, Bura Hills, Vuria Peak, 2175 m. (Polhill & Verdcourt 35) has a wider deeper brown shell and may represent a different species or subspecies. Detailed anatomical study throughout the range of the species might show it should be split but this is not immediately obvious from the shell. Detailed comparison is also needed with T. inclara (Morelet) from Port Elizabeth and T. miliaris (Morelet) from the Comoro Islands which has very fine transverse striae and obscure spiral striae very similar to T. ariel. No material for dissection has come to hand.

Phortion flavidula Preston MS from the Nyambeni Hills is probably T. ariel and Zingis microcancellata Preston MS from N. of Mt. Kenya certainly is (see Verdcourt, 1980: 240).

Trachycystis pseudocharopa Preston = T. abyssinica (Jickeli)

Trachycystis approximans Preston = T. abyssinica (Jickeli)

Trachycystis iredalei Preston

Trachycystis iredalei Preston, 1912: 187, t.32/8.

Trachycystis bernadinae Connolly, 1925: 470, t.28/9.

TYPE LOCALITY. (of iredalei). Kenya, Igembi Hills to Nyeri, leg. R. Kemp (holotype, Tervuren, MRAC 27278). (of bernadinae). Kenya, Mt. Kenya, Solai Forest, 7000-9000 ft., leg. R. Kemp (holotype, BM 1937.12.30.2077) (Note: I have traced no Solai Forest on Mt. Kenya - probably Solai north of Nakuru at about 00°6'S, 36°12'E was meant).

Examination of the holotype of T. iredalei shows it to be a half-grown specimen of the taxon later described by Connolly. The paratype material of iredalei is poor and useless. Connolly re-described this small elegant species from a shell which he had found under a manuscript name amongst a large collection of African Mollusca handed over to him by H. B. Preston. He maintained the same epithet but I do not know which lady it was supposed to commemorate. Amongst material from the Salisbury collection now at the Liverpool Museum (1945: 141) I detected the only other specimen I have seen apart from the type which had been collected in Kenya in the Cherangani Hills by C. R. S. Pitman unfortunately without more precise details. The species is well characterised by the very depressed shape, like a miniature Tayloria, with a very wide umbilicus, close very strong transverse ribs with about four fine striae between pairs but no spiral element save for some vague traces within the umbilicus; the apical whorls are smooth. Dissection of the animal is needed to confirm its position but I think it is unlikely not to be an endodontoid.

Punctum pallidum Connolly

Punctum pallidum Connolly, 1922: 119; 1925: 151, t.4/17, t.f.16; 1939: 258, t.9/9-

10, t.f.21; van Bruggen & Meredith, 1984: 161; van Bruggen, 1988: 11.

TYPE LOCALITY. Mozambique, Mt. Vengo, leg. Cressy (holotype, BM, 1925.8.4.26).

Known from Mozambique, Malawi and Zambia but not positively identified from East Africa. It must occur at least in S. Tanzania. It is a very small pale almost white shell quite unlike any other species mentioned but with the typical spaced ribs with fine radial and spiral striae between. It is smaller than any other species mentioned and also much smaller and paler than P. pygmaeum (Drap.) and with a narrower umbilicus.

Trachycystis bernadinae Connolly = T. iredalei Preston

Trachycystis igembiensis Connolly

Trachycystis igembiensis Connolly, 1925: 471, t.28/10.

TYPE LOCALITY. Kenya, Igembi Hills to Nyeri, leg. R. Kemp (holotype, BM, 1937.12.30.2078).

The type is in poor condition and the type locality hardly precise. The transverse and spiral sculpture are very similar to that found in Punctum which is probably where the species belongs.

Afrodonta kempi (Connolly)

Endodonta kempi Connolly, 1925, 472, t.28/13.

Afrodonta kempi (Connolly); Solem, 1970, 363.

TYPE LOCALITY. Kenya, Igembi Hills, 6000 ft., leg. R. Kemp (holotype, BM, 1937.12.30.2762).

The only other specimen known to me is one collected in the Cherangani Hills near Kapenguria by J. G. Williams. Solem reported this locality as Nufenguri which I am afraid is partly due to my bad handwriting on the label. The species is minute and doubtless much more widely distributed although it was not in the Holm collection and he paid particular attention to minute species so it may be genuinely uncommon.

Trachycystis monotropha Germain, 1934: 269; Editeurs Journ. de Conchyl. 1952: 169, t.8/15.

This was a sadly erroneous placing and the species is actually an operculate, Elgonocyclus koptaweliensis (Germain). See Verdcourt (1982) for details.

Trachycystis koptaweliensis Germain, 1934: 269; Editeurs Journ. de Conchyl. 1952: 168, t.7/14.

This is actually an operculate, Elgonocyclus koptaweliensis (Germain). See Verdcourt (1982) for details.

Punctum hottentotum mkusiensis Verdcourt

Punctum hottentotum var. mkusiensis Verdcourt, 1952: 60, fig. 1, 2.

TYPE LOCALITY. Tanzania, W. Usambaras, Mkusi, 1650 m., leg. B. Verdcourt (holotype and paratype, Nairobi, radula slide ? Tervuren).

The original publication contains an error; Venmans altered the correct authority Melv. & Pons. given in my MS for some inconceivable reason so that it appeared as Moss & Webb. The shell has the characteristic sculpture of Punctum with transverse lamellae with fine transverse striae between and clear spiral sculpture. The radula is characteristic of Punctum. The only other specimens seen which I think are probably the same are Basilewsky & Leloup in MRAC 789029-789030 collected on the S. slope of Mt. Hanang at 2400 m. in May 1957. The type material was found

amongst Typha roots by a small dam. It may possibly prove to be P. cryophilum. A re-comparison with the type of P. hottentotum suggests it could be merely a juvenile of that species. Clearly all three are close.

Trachycystis lamellosa K. Pfeiffer

Trachycystis lamellosa K. Pfeiffer, 1952: 93, t.1/3.

TYPE LOCALITY. Tanzania, Mt. Meru, Momella, leg. K. Pfeiffer (holotype, Senckenberg Museum, Frankfurt, SMF 96718).

A juvenile specimen collected in the West Usambaras, Mkusi by myself probably belongs here. The shell is almost white with 3½ whorls, 1.2 x 0.8 mm with the apical whorls finely shagreened, almost smooth, with spaced lamellae, with transverse striae between and very fine spiral striae. It could possibly, however, be T. lamellifera.

Punctum kilimanjaricum Verdcourt

Punctum kilimanjaricum Verdcourt, 1978: 19.

TYPE LOCALITY. Tanzania, Kilimanjaro, near Peter's Hut, under large stones amongst Helichrysum and Euryops, 4050 m., Jan. 1955, B. Verdcourt (holotype, National Museum, Nairobi; paratype, Rijksmuseum Leiden).

Curiously no other material seems to have been collected on this mountain over which swarms of tourists have been climbing for over 90 years. More material is needed to compare it more adequately with other African species. It seemed a lesser evil to describe it than to ascribe it to some species which seemed very similar but perhaps not closely related. Type material of P. cryophilum in the BM is larger with more conspicuous spiral striae. The spiral striae in P. kilimanjaricum are regular but not strongly marked. This species lives in a formidable environment, shared by a helcid, of intense cold during the night and high daytime temperatures with clear sunshine. The boulders under which it lives probably retain the daytime heat.

Whilst all the types were available to me on loan, five of them were compared with the types of P. kilimanjaricum. P. hottentotum is about the same size but paler, much more finely striate and with the spiral element more obvious beneath. P. brucei is smaller with finer striae and smaller umbilicus but so damaged that it is difficult to compare and, moreover, is probably juvenile. P. cryophilum is slightly smaller, more finely striate and much less elevated. P. pallidum is much smaller, paler and very much more finely striate. T. abyssinica is very much larger with stronger striae and less elevated spire; it is clearly not congeneric.

B. Verdcourt

(Part 2, completion, will appear in the next issue, June 1991. It will include all the figures.)

A SECOND PEARL FROM THE CROMERIAN OF THE WEST RUNTON FRESHWATER BED

Preece (J. Conch., 33:[1988] pp. 106) has recently recorded a freshwater pearl from the type Cromerian of West Runton, Norfolk. On the 11 th. April 1989, during the Annual Field Meeting of the Quaternary Research Association, the locality from which the pearl was recovered was visited. Mollusc rich horizons in bed f of West (1980; The pre-glacial Pleistocene of the Norfolk and Suffolk coasts; Cambridge University Press) at TG 187432, the exact locality 172m east of Woman Hithe noted by Preece, were bulk sampled by the writer and Dr. G. R. Coope to obtain specimens of Cromerian Mollusca and Coleoptera.

The samples for Mollusca were subsequently used in practical demonstrations of non-marine molluscan analysis at Coventry Polytechnic. During one of these demonstrations a pearl was found by an undergraduate student, Mr. P. Finch, while sorting sediment for Mollusca. This second pearl is lustrous grey/pink in colour and being 1.7mm x 1.3mm in dimension slightly elliptical in shape. The pearl is somewhat abraded so that the characteristic layers from which pearls are constructed can be seen.

As Preece (J. Conch., 33:[1988] pp. 106) has noted pearls are distinctly rare in the fossil record and freshwater pearls especially so, it is therefore remarkable that the site at West Runton should yield the only two specimens known. The species of mussel which formed the pearl is unknown, but three species of unionid (Anodonta cygnea, Anodonta anatina and Unio pictorum) are recorded from the Cromerian at West Runton by Preece (in Gibbard, P.L. and Zalasiewicz, J.A. (eds.) 1989 The Pliocene-Middle Pleistocene of East Anglia. Field Guide. Quaternary Research Association, Cambridge), and the pearl could be from any one of these.

The pearl has been placed with other Mollusca from West Runton in the collection of the writer at Coventry Polytechnic.

D. H. Keen

Department of Geography, Coventry Polytechnic, Priory Street, Coventry, CV1 5FB

TWO TITLES FROM SHIRE PUBLICATIONS

LAND SNAILS OF THE BRITISH ISLES by A. A. Wardhaugh (1989) ISBN 0-7478-0027-8. £1.95

A concise and readable first introduction to British land snails, giving the basics of shell structure and features for identification as well as an account of their way of life. To help the beginner, the line drawings of the different species are grouped under habitats. For ease of reference in the field it would have been helpful to have had the drawings of species numbered or labelled individually and perhaps with an indication of scale. I would not have included Ashfordia granulata as a woodland snail - it lives in marshes and damp hedges in the west. There is a useful identification table with species in size order. A well written introductory book, likely to enthuse and encourage the beginner at a very modest price. The author is a member of the Conchological Society.

LIFE IN THE ICE AGE by Anthony J. Stuart (1988) ISBN 0-85263-929-5. £2.50

This book provides a potted introduction to the changing conditions of freeze and thaw that make up the several individual ice ages of the Pleistocene period and an introduction to the terminology applied to the stages that are important to know when reading about this period of geological history.

The ways of studying the different layers or strata are outlined with examples, together with the use of pollen, beetles and fossil shells in interpreting changes in climate of the past. Man's arrival on the scene is also covered and the take-off in human populations following improvements in climate and the end of the Ice Age.

The essence of this book is to provide background on the Ice Age and it does not go into great detail on molluscs. There are, however, references to the use of land snails and marine shellfish as food by prehistoric peoples and an example given of the West Runton Freshwater Beds near Cromer, Norfolk where both terrestrial and freshwater species of mollusc occur in the deposits. There is a brief mention of mollusc diagrams for use in stratigraphy as is also done with pollen and

beetle wing-cases.

A good introduction to an intriguing piece of geological history not so long ago, that puts our present world and its molluscs in context.

Shire books are obtainable from good book shops but they may also be ordered directly from the publishers - Shire Publications Ltd., Cromwell House, Church Street, Princes Risborough, Aylesbury, Bucks.

June Chatfield

REPORT ON FIELD MEETING IN THE MENDIPS

On Saturday July 7th. many members of the Conchological Society met at the Axbridge By-Pass Car Park in Somerset on a very misty, moist morning. Ideal weather for discovering and recording elusive non-marine Molluscs on two sites in the Mendips.

The first site visited was Rosewood, a private reserve owned by Mr. Len Cram, a member of the Somerset Trust for Nature Conservation and our leader for the day.

Many searching eyes soon discovered Ena montana, a characteristic 'local' snail of deciduous woodland, which was climbing ash trees in the wet weather. Helicigona lapicida was also discovered high on ash and sycamore trees. Both species appear to select and favour trees with smooth barks. In the leaf litter members found Zenobiella subrufescens, Acanthinula aculeata and Vitrina pellucida. Arion intermedius merged with moss and Discus rotundatus was revealed under several logs. Pomatias elegans in the calcareous soil was very common.

The afternoon was spent at Black Rock Gate, a reserve at the end of the Cheddar Gorge. The scree slopes harboured Pyramidula rupestris, Boettgerilla pallens, Limax maximus and Arion flagellus were found on the woodland slopes.

The total number of species recorded was 38 and the records were sent to the Somerset Trust for Nature Conservation. An enjoyable and enlightening day was spent by all members who attended this wet Field Meeting, and finding Ena montana for the first time alive certainly made my day.

Thank you all for your support and sharing your knowledge with a West Country member.

Susan Davies

NATURAL SCIENCE COLLECTIONS

South-Eastern Research Unit

The Federation for Natural Science Collection Research (FENSCORE), is concerned with setting up a national database to provide information about the existence, content and location of biological and geological collections. These can be institutional, i.e. in universities, colleges or museums, or, in private hands. The information will go onto the computer of The Museum Documentation Association, based in Cambridge and this will be in full compliance with the Data Protection Act.

To make the collection of data easier this is being organised on a regional

basis and the South-Eastern Research Unit covers Norfolk, Suffolk, Essex, Kent, Cambridgeshire, Hertfordshire, Greater London, Surrey, East & West Sussex, Buckinghamshire, Berkshire, Oxfordshire, Hampshire, Isle of Wight and the Channel Islands.

The information collected is quite basic and includes the name of the collection, its content in broad terms, status in terms of Types and Figured specimens, size and housing, together with brief biographical details about named collectors. The information is collected on a data record sheet, which has full guidance notes for completion. Much of the information can be supplied by ticking relevant boxes. Owners of collections can complete the sheets themselves, or, if preferred, a qualified curator can do this by mutual agreement.

Anyone in possession of a permanent collection is respectfully urged to co-operate with this research, which is aimed at providing scholarly information concerning collection material. In the first instance please contact Jim Bateman, who is co-ordinating the south-eastern research on behalf of the Museums & Galleries Commission. He is at [REDACTED], Wood Green, WITNEY, Oxon. [REDACTED]. Tel: [REDACTED].

SLUGS VERSUS SAFARI ANTS

This interesting note published in The Journal of the East Africa and Uganda Natural History Society vol. 16 (70):57 (1941) may have missed the abstracting journals (1941 is missing from my set of the Zoological Record: Mollusca). It seems well worth repeating in a molluscan publication. The slug would very probably have been Trichotoxon heyneimanni Simroth.

SLUG vs. SAFARI ANTS. The large white slug which is common in the wet forests of Kenya would seem to be quite unprotected against the attacks of the wandering ants. An observation which I made recently shows, however, that it has nothing to fear from their voracious hordes: A branch carrying a white slug about 6 inches long had fallen across a trail of siafu, which swarmed immediately all over it. On finding the slug they attacked it at once in such numbers that the slug was nearly hidden from view; it pulled in its horns, contracted a little and remained motionless, and apparently inactive. The siafus seemed to sink their jaws right into the slug, and then hung onto it without motion. After the first excitement of finding this prey in its way, the main trail resumed its marching order and passed on, leaving the victim covered with its aggressors.

For a few minutes nothing happened, when suddenly the covering of ants opened in one place, and the slug moved out from underneath unscathed, leaving them behind, their prongs well buried in the slime which it had exuded, and which it shed as if it had been a cloak.

Not one of the siafu seemed to realize that their prey was making an escape, for they continued to hold on to the slime left behind. P. R. O. Bally, Coryndon Museum, Nairobi. (Now The National Museum)

B. Verdcourt

REPORT OF THE BRITISH MARINE WORKSHOP, 24th. NOVEMBER 1990

The British Marine Workshop took place on November 24th. at Godalming. As usual, a group of enthusiasts spent a full day identifying specimens, exchanging material and information, studying difficult groups such as the pyramidellids and

learning techniques for recording.

The Workshops came about six years ago when Julia Nunn and I, relative novices at the time, felt the need for a 'teach-in' and asked the Society to organise such an event. We were saddled with the task which we undertook, enlisting the expertise of people like Shelagh Smith, Phil Palmer and Celia Pain. In time, pupils became teachers and so the trend continues.

This year the morning session was opened by Ted Phorson whose illustrated articles on juvenile shells in *Conchologists' Newsletters* have delighted and enlightened many. Ted brought an excellent display of growth series of sixty species of marine bivalve, each species mounted on card for easy examination under microscope. Tracing a bivalve back through a series of sizes, each specimen barely larger than its predecessor, enables observation of the mode and direction of growth increment. Such a technique helps to unravel the potential tangles of sorting out species in tricky genera such as Mya, Thracia, Tellina. Apart from the satisfaction of naming shells which might otherwise sit in a tube of unidentified residue from a sorted sample, it also imparts a degree of confidence in recording live juveniles which occur in weed and sand samples.

Later in the morning Ian Killeen demonstrated methods for separating Littorina obtusata and L. mariae and in the afternoon gave an illustrated guide to the molluscs which live on muddy, estuarine, brackish and saltmarsh shores - habitats which are often overlooked. Tips on finding some of the more elusive species such as Limapontia depressa and Alderia modesta were discussed, also the technique for distinguishing between the three Hydrobia species. The rest of the day was spent enlisting opinions on unidentified shells and tying up the loose ends from a year's molluscan expeditions. Non-marine and fossil shells also saw the light of day!

Field meetings over the last two years have moved to a mixed-disciplinary approach. This move has proved popular to judge from the significant increase in attendances at field meetings. In line with this trend it was decided to hold a mixed-disciplinary Workshop in 1991 with plenty on offer for marine and non-marine workers alike. Potential participants will be encouraged to state their requirements at the time of booking. Details will appear in the next newsletter.

Our thanks are due to Ian Killeen who organised this year's Workshop and to Ted Phorson for a highly instructive session.

Jan Light, [REDACTED], Godalming, Surrey, [REDACTED]

INTERNATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE, c/o. British Museum (Natural History), Cromwell Road, London, SW7 5BD

Applications published in the Bulletin of Zoological Nomenclature

The following Applications were published on 20 December 1990 in Vol. 47, 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, I.C.Z.N., c/o. The Natural History Museum, Cromwell Road, London, SW7 5BD

Case 2768 Lepidomenia Kowalevsky in Brock, 1883 (Mollusca, Solengastres): proposed designation of Lepidomenia hystrix Marion & Kowalevsky in Fischer, 1885 as the type species

David Heppell, Department of Natural History, National Museums of Scotland, Edinburgh, EH1 1JF, U.K.

Case 2739 Helicarion Férussac, 1821 (Mollusca, Gastropoda): proposed conservation, and proposed designation of Helixarion cuvieri Férussac, 1821 as the type species

Brian J. Smith, [REDACTED], Shepparton, Victoria 3630, Australia
Ron C. Kershaw, [REDACTED], Launceston, Tasmania 7250, Australia

- Case 2588 Haminaea Leach, [1820](Mollusca, Gastropoda): proposed conservation
Riccardo Giannuzzi-Savelli, [REDACTED], 90146 Palermo, Italy
Anthea Gentry, Secretariat, International Commission on Zoological Nomenclature, c/o. The Natural History Museum, Cromwell Road, London, SW7 5BD, U.K.
- Case 2670 Kobeltia Seibert, 1873 (Mollusca, Gastropoda): proposed confirmation of
Arion hortensis Férussac, 1819 as the type species
Thierry Backeljau, Koninklijk Belgisch Instituut voor Natuurwetenschappen, Vautierstraat 29, B-1040 Brussel, Belgium

ADVERTISEMENT If you are interested in malacological journals such as Journal de Conchyliologie, please contact: Dieter Schierenberg BV, Rare illustrated books and periodicals on Natural History, [REDACTED], 1016 HP Amsterdam, Netherlands. Tel.: [REDACTED] - Fax: 20-265650. All catalogues free upon request.

DISTRIBUTION OF THE MARINE MOLLUSCS OF NORTH WEST EUROPE

by D. R. Seaward. Dec. 1990. Now available from NCC.

In 1982, I produced the Sea Area Atlas of Marine Molluscs of Britain and Ireland, which was published for the Society by the Nature Conservancy Council.

I have now brought this up to date with many new records, and much older information from an extensive literature search, and as the title suggests, the new work covers a greatly extended area from Bergen to Brest and the whole North Sea, while still including deep water in the eastern Atlantic. Modern nomenclature has been incorporated. It has just been published for the Society, again by the NCC, and we are most grateful to NCC for this continuing generous support.

Copies are available from the Publicity Services Branch, Nature Conservancy Council, Northminster House, Peterborough, PE1 1UA, at £9.50 incl. p. & p., but at the privilege price of £5.00 incl. p. & p. to Conch. Soc. members, for 1991 only. Please state that you are a member if you wish to claim the special price. I hope that many will do so to ensure the continuing interest of NCC in our marine census scheme.

There are now no stocks of the 1982 Atlas remaining at NCC, but I have some copies left which are available at £7.00 each incl. p. & p. from me at the address below.

Having now brought together (I hope!) all the important historical records, and with reasonable modern cover at the coarse Sea Area scale, it is time for the marine census to move from this baseline to a new emphasis, which I hope will involve our Continental friends and colleagues, and some preliminary proposals will be aired in the next Newsletter - watch this space!

Dennis R. Seaward, Marine Recorder
[REDACTED], Sherborne, Dorset, [REDACTED]

Printed by: D. C. Armsworth, [REDACTED], Baldock, Herts. Tel.: [REDACTED]

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FIELD WORK IN THE AUVERGNE, FRANCE

From 8-14 April, 1990 a new French society (L'Association Francaise pour L'Etude des Mollusques Continentaux) held a field meeting recording molluscs in the Massif Central of France, which I attended from 10 April. The meeting was organised by Francois Carre, Curator of Natural Sciences and Archaeology at the museum in Chartres who knows the Auvergne well. Although much of the Massif Central is on acid rock, and generally less attractive to molluscs than the Dordogne or the Pyrenees, there are areas of less acid to alkaline rock which can be located with a geology map. Our leader proved to be a good guide to these more promising sites.

During the week over 80 species of mollusc were recorded and, being towards the south of France, the list included species which do not normally occur in Britain. Among these were: Sphyradium doliolum, Granaria frumentum, Chondrina avenacea, Pupilla triplicata, Jaminia quadridens, Zebrina detrita, Tandonia rustica, Clausilia parvula, Candidula unifasciata, Cernuella neglecta, Euomphalia strigella and Chilostoma sp.

In the Auvergne Phenacolimax major (a comparative rarity in Britain) was the common vitrinid and found alive in abundance. In Britain we associate this species with old woodland, but here in France it was in a wider range of habitats - roadsides and open places - wherever there was sufficient moisture, as well as under logs in woods. It was interesting to see how P. major lives in the main part of its range. Whilst most of the live specimens had the black mantle, the French malacologists pointed out that the body colour is somewhat variable and some individuals are paler. Specimens were exhibited at the April 1990 Conchological Society meeting.

Of the Clausilia species, the small C. parvula was the most common. Macrogastra rolphii (local only in Britain) was present and this species is far more widespread in France. Clausilia bidentata also occurred. As in Britain, Balea perversa is widely distributed but not common and we only found this in two sites. One of these was a stone tile roof of a farm building (near Marvejols) of a micaceous rock which I was attracted to by the moss species (Homalothecium sericeum) which suggested a fairly alkaline substratum - it was here that live Balea were found.

In open rubbly places on calcareous rock, where in Britain we would expect to find Helicella itala, the smaller and less flat Cernuella neglecta was found instead.

During the week we extended the known range of Hygromia cinctella and H. limbata (as shown in the European maps in Kerney and Cameron 1979). Helix

pomatia was found more frequently than H. aspersa, both Cepaea nemoralis and C. hortensis were common but Arianta arbustorum was, curiously, absent, even in marshy sites. Pomatias elegans, a strict calcicole, was found on the more alkaline rock outcrops.

The freshwater sites explored were streams (mostly with Ancylus fluviatilis and Lymnaea peregra) but we also investigated some marshes which yielded an abundance of empty freshwater shells.

The group was based in the village hall at Blassac, a small settlement on the hilltop, some were staying in the village and others camping or in hotels at Lavoute Chilhac in the river valley. From Blassac collecting excursions went in a number of directions - west and south to St. Flour and Marvejols, east to Le Puy and north to Issoire and Clermont-Ferrand. We searched on a range of different geological formations from acid rock, basalt, volcanic ash, calcareous sandstone to argillaceous deposits. The sites are included in the French Michelin maps 73 and 76.

The Association (AFEMC) was formed in 1988 and organises a field week at Easter and July each year, the results of these to be published in the forthcoming journal Vertigo. As with our Conchological Society, field meetings on acid soil without the lure of rare molluscs attract the dedicated few, so the Auvergne meeting of April 1990 was less well attended than last year's spring meeting in the Pyrenees. However, a small number of hard-working enthusiasts can achieve a good deal and a full programme of collecting was undertaken. The aim of the Association is to encourage meetings, particularly in the field, for amateurs and professionals working on non-marine molluscs and to assist the contribution of records to the French mapping scheme initiated in 1984 and organised by J. Andre from Montpellier. Anyone who would like to join in the activities of this new society should contact the Secretary (also a Conchological Society member) who is Colette Stevanovitch, 60 Esplanade Flechambault, 5100 Reims, France. The annual subscription (payable on 1 January) is 60 Francs (1990 rate).

June Chatfield

SOME OBSERVATIONS ON JUVENILES AND GROWTH SERIES OF LEUCOPHYTIA BIDENTATA (MONTAGU 1808) AND OVATELLA MYOSOTIS (DRAPARNAUD 1801)

Earlier in 1990, Jan Light passed on to me a sample of fine shell sand taken in The Fleet, Dorset, so that I could work on the very many small shells it contained. I wish to thank Jan for her kindness since the sample was, indeed, richly endowed with a range of small specimens almost down to protoconch size. Among the specimens were sufficient examples of Leucophytia bidentata and Ovatella myosotis to assemble long growth series of each species.

The preparation of the specimens was not without difficulties. In many cases the apertures of the smallest shells were clogged with the particularly sticky, greyish silt of The Fleet and it was necessary to stick the specimens down, using gum tragacanth, so that the silt could be removed. This was done using the smallest sable brush available, moistened with a little water; some specimens disintegrated in the process.

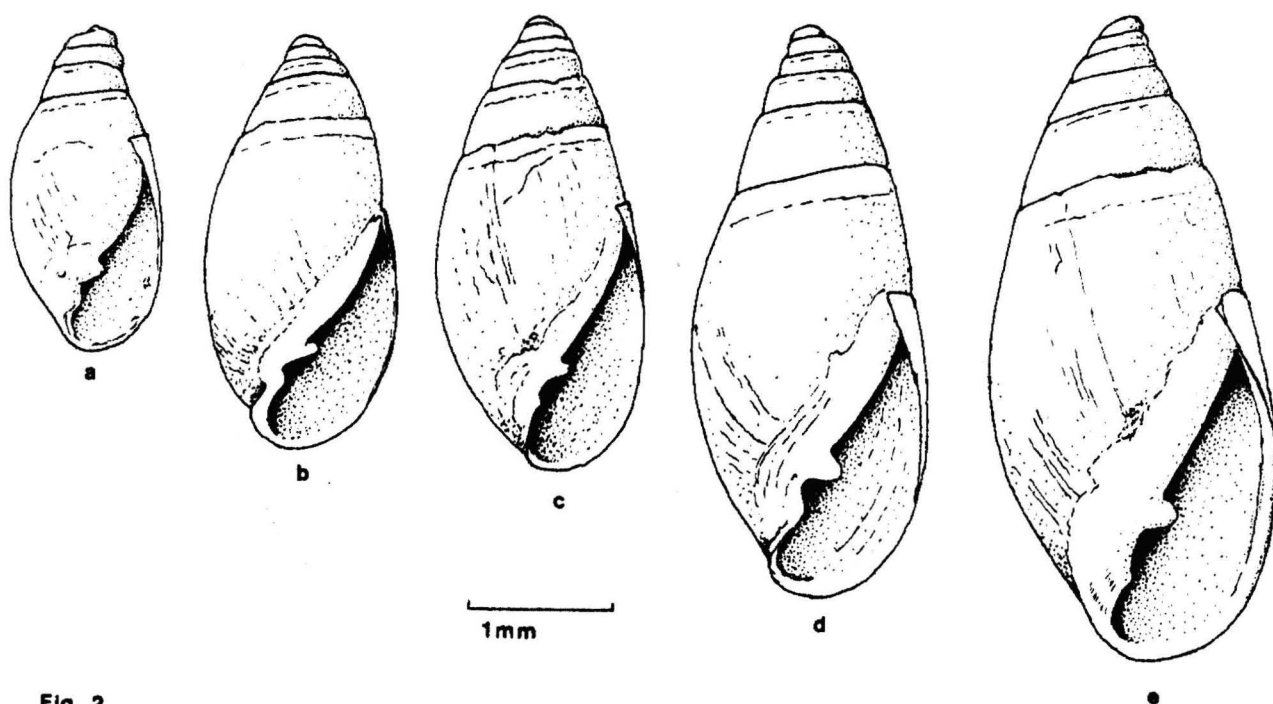
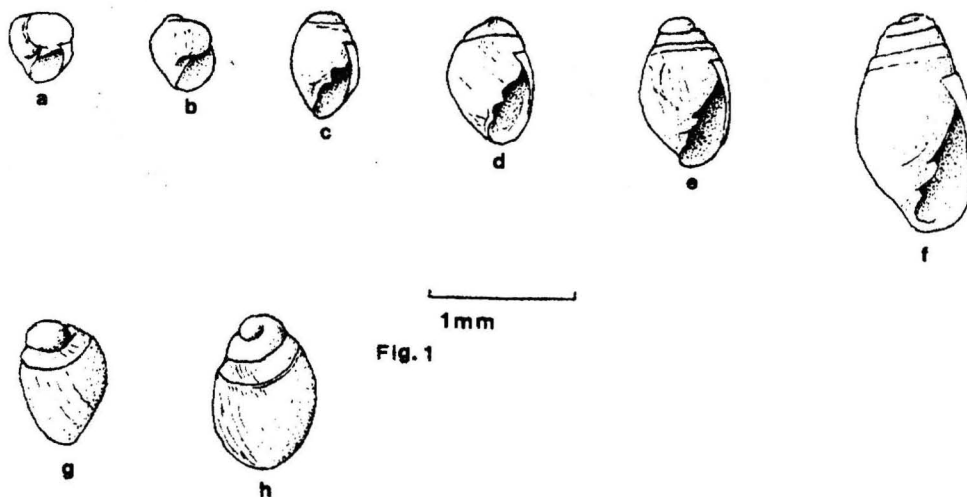


Fig. 2

Plate A *Leucophytia bidentata* (Montagu 1808)

Fig. 1a-f: Growth series of small specimens, apertural view. g, h: Oblique apical view of two small specimens.

Fig. 2a-e: Continuation of growth series in apertural view. All specimens show adult characteristics.

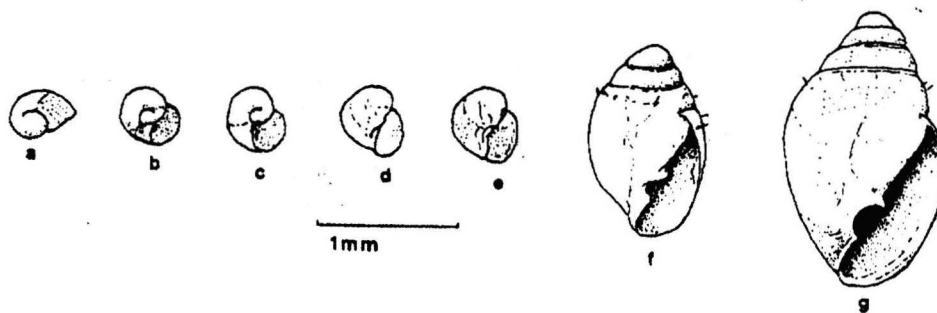


Fig. 1

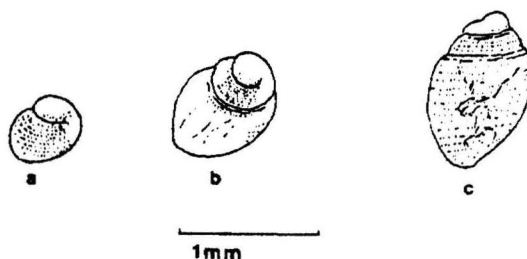


Fig. 2

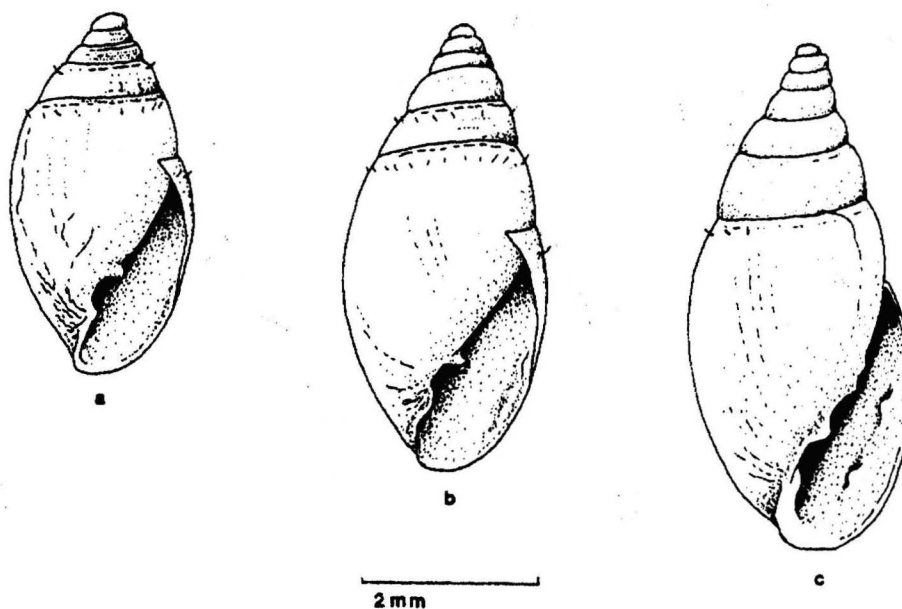


Fig. 3

Plate B Ovatella myosotis (Draparnaud 1801)

- Fig. 1a-g: Growth series of small specimens, b-g in apertural view.
 Fig. 2a,b: Small specimens, oblique apical view. c: small specimen in abapertural view.
 Fig. 3a-c: Continuation of growth series in apertural view showing beginning of development of adult characteristics.

The accompanying illustrations (Plates A and B) show representative specimens of the longer growth series which were finally put together. A recent issue of The Conchologists' Newsletter (Sept. 1990) contained a paper by Phil' Palmer which included excellent illustrations and descriptions of adults of L. bidentata and O. myosotis. I hope Phil' will not mind if I offer this present piece as an addendum to his article, my illustrations showing the earlier development of the shell structure up to a size rather smaller than his specimens.

As these two species may be found together, it is all the more necessary to be able to recognise which is which. In separating the two species, the diagnostic features for adults are very clearly set out by Phil' in his paper. With juveniles, however, other features may have to be taken into account.

It will be seen from the illustrations that the smallest specimens of L. bidentata have a small chink for an umbilicus, whereas in the case of O. myosotis the "bulb" of the protoconch is visible on the underside (Plate B, Fig. 1b, c) until it is "lost" beneath the developing whorl of the growing shell. The apertures of the smallest shells are also different, those of O. myosotis being more rounded. A notable difference between the smaller juveniles is that on the whorls of O. myosotis (but not of L. bidentata) there are very fine spiral rows of puncta; these begin immediately after the transition from the protoconch to the teleoconch (Plate B, Figs. 1a, b, e and 2a). These rows of puncta are not invariably present, however, and an unusual smooth specimen is shown in Fig. 1f.

In the case of adults, colour is a clear diagnostic feature for separating the species: L. bidentata shells are creamy-white, those of O. myosotis a reddish-brown (unless they are old and bleached white!). In the case of juveniles, however, the shells of both species are transparent so that one has to rely on other criteria. Further distinctions between the juveniles of the two species may be observed from the two growth series. For example, the apex of very small shells of L. bidentata tends to be blunter and the whorls flatter than in the case of O. myosotis.

With adult shells, the number of columellar teeth present is the clearest of distinguishing features, but it will be seen from the growth series that this criterion does not hold with juveniles. The smallest shells of both species are entirely without teeth and each develops first a single, vestigial tooth and acquires gradually its appropriate full complement of teeth. For some time during development O. myosotis has only two teeth (Plate B, Fig. 1f-g and Fig. 3a, b). The final figure for this species (Fig. 3c) shows the almost full complement of teeth while the corresponding teeth on the inner surface of the aperture are also beginning to appear. It should be noted therefore, that intermediate-sized juveniles of both species have two teeth.

A detail of O. myosotis not often described is the row of small "hairs" or "spikes" which develops from the periostracum just below the suture of larger juveniles (Plate B, Fig. 1f, g and Fig. 3a-c). This does not appear to be present on adults, either because it is worn off or perhaps because it is no longer produced.

Should there be any readers who still recall an earlier article in which I refer to juveniles as "delinquents" (C.N. June 1984, pp. 161-171) please note that the small juveniles shown in Fig. 35 of that article and which I could not then identify, I now know to be O. myosotis. For some time I thought it might be L. bidentata because of its two teeth and I provisionally recorded it as such, adding a question mark to remind myself that I had not really resolved the

problem. The unknown small juvenile of Fig. 34 is Acteon tornatilis: I am certain of this having seen well-authenticated SEM photographs of juveniles of this species. It has a single shallow tooth on the columella and spiral rows of puncta on the whorls, but in general configuration and in aperture shape it is different from O. myosotis at a similar size.

POSTSCRIPTUM The "mystery shell" in my piece in the Newsletter of September 1990 (p.314) is a Thracia. My thanks go to Dr. Shelagh Smith who wrote very promptly and to Dick Hoeksema of Middelburg, Holland, whose letter and a copy of a paper he had written in 1976 followed soon afterwards. As it happens, in the interval between my writing the article and its appearance in the Newsletter, I had managed to solve the problem for myself with quite a good growth series obtained from shell sand taken in Achmelvich Bay in N.W. Scotland this summer.

September 1990. J. E. Phorson, [REDACTED], Belmont, Durham, [REDACTED]

UNCOMFORTABLE COLLECTING

Reading Crowley's note (Newsletter 115: 329) on the loneliness of the solitary shell hunter and especially the lines on Hildegard Zeissler's adventure, the remembrance of a field trip in France came back into my mind. Several years ago my wife attended a medical congress in Bordeaux and for one day I escaped the ladies programme, despite champagne at lunch time and grand cru's in the evening, to make a long one-day excursion to the western Pyrenees. I went there to see the endemic snails of the area in their habitats and, most of all, to collect Cryptazeca spec. alive, for anatomical study, to ascertain its systematic position (near Azeca). De Folin & Bérillon (1877 [see Gittenberger, 1983]) had given a detailed description of a site with even two Cryptazeca species, the estate "Bramepan" near St. Pierre-d'Irube SE of Bayonne. That village was my prime goal.

To my surprise nobody in St. Pierre knew about "Bramepan". Finally a policeman advised me to go to the town hall, to ask there. And yes, this brought a partial result. A very kind functionary listened carefully to my story about science and snails, culminating in the question about "Bramepan". He then disappeared for ca. ten minutes and re-appeared with a mysterious smile on his face. "It still exists", he told me, "but the name has been changed". I should visit Madame XX, the former director of the "institute". She could tell me everything about the estate. With detailed notes how to find Madame XX's place, I continued the time-consuming search. Madame XX could be located in a big house, surrounded by a high wall that hampered our initial conversation, as did both a violently barking dog and my inferior knowledge of the French language. She let me in, listened to my story that started with De Folin & Bérillon because she looked intelligent and then, again a smile. "The former estate is a mental hospital now", she told me, "surrounded by a high wall; I'll 'phone the director". So she did, the director agreed with my activities in the park around the clinic, and I was told how to drive. It happened to be visitors' time and the gate was open.

Having parked the car, I walked into the sterile looking park, initially amidst the patients and their relatives. The weather was very nice and everybody looked and behaved quite normally, except me. Looking for the humid Cryptazeca habitat, I had to leave the paths, entering the shrubs until I reached again and

again the high wall surrounding the entire area. Not a single interesting site was found, but nevertheless I started crawling on all fours, eagerly grubbing in the earth, especially where I considered myself well-hidden. This was a very uncomfortable situation and every noise alarmed me. Would a nurse of the mental hospital immediately accept that simply a person from the Netherlands was collecting rare snails, less than a cm. in length? Not everybody could have been informed about my activities in such a short period of time... These thoughts turned around in my mind, but after all, nobody asked what I was doing and nothing of interest was found. The gate was still open when I left, relieved. A successful story was all that could be brought back to the ladies programme of two more days, in Bordeaux.

Epilogue: Don't try again. Dr. Hans Boeters also visited the former "Bramepan", years ago. He was told that the construction of a highway, long ago, destroyed the lowest, most humid parts of the park. Meanwhile, the systematic position of Cryptazeca has been solved convincingly by Gomez & Angulo (1987).

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Edmund Gittenberger

SOME NOTES ON EAST AFRICAN ENDODONTOID SNAILS - PART 2

NOTES ON SOME UNIDENTIFIED MATERIAL

This data has some zoogeographical significance and, moreover, may help collectors to obtain more material so that the identities can be established or the species described.

- 1). Ethiopia: Manegasha National Park, 2600 m., 10 Feb. 1969, leg. Å. Holm 157 and same place, 158 (Stockholm Museum).

The shell is very pale, 1.5 mm. wide with strong spaced ribs with the characteristic punctoid sculpture of fine transverse and spiral striae between. Punctum sp. and a comparison with the type suggests it could be P. cryophilum. P. hottentotum is much larger but less strongly ribbed.

- 2). Kenya: Maralal, 2200 m., 2 Jan. 1973, leg. Å. Holm 273 (Stockholm Museum).

A juvenile shell with uniform striae; probably Trachycystis.

- 3). Kenya: Mt. Elgon, E. side at Suam R., 2170 m., 29 Dec. 1961, Å. Holm 34a (Stockholm Museum).

Punctum or Trachycystis.

- 4). Kenya: Milimambogo, 1500 m., 6 Dec. 1977, leg. Å. Holm 380 (Stockholm Museum).

With spaced transverse ribs and finer ones between; possibly a Trachycystis but could be a juvenile flat lamellate Streptaxid. The animal is quite retracted and not examinable without destroying the shell.

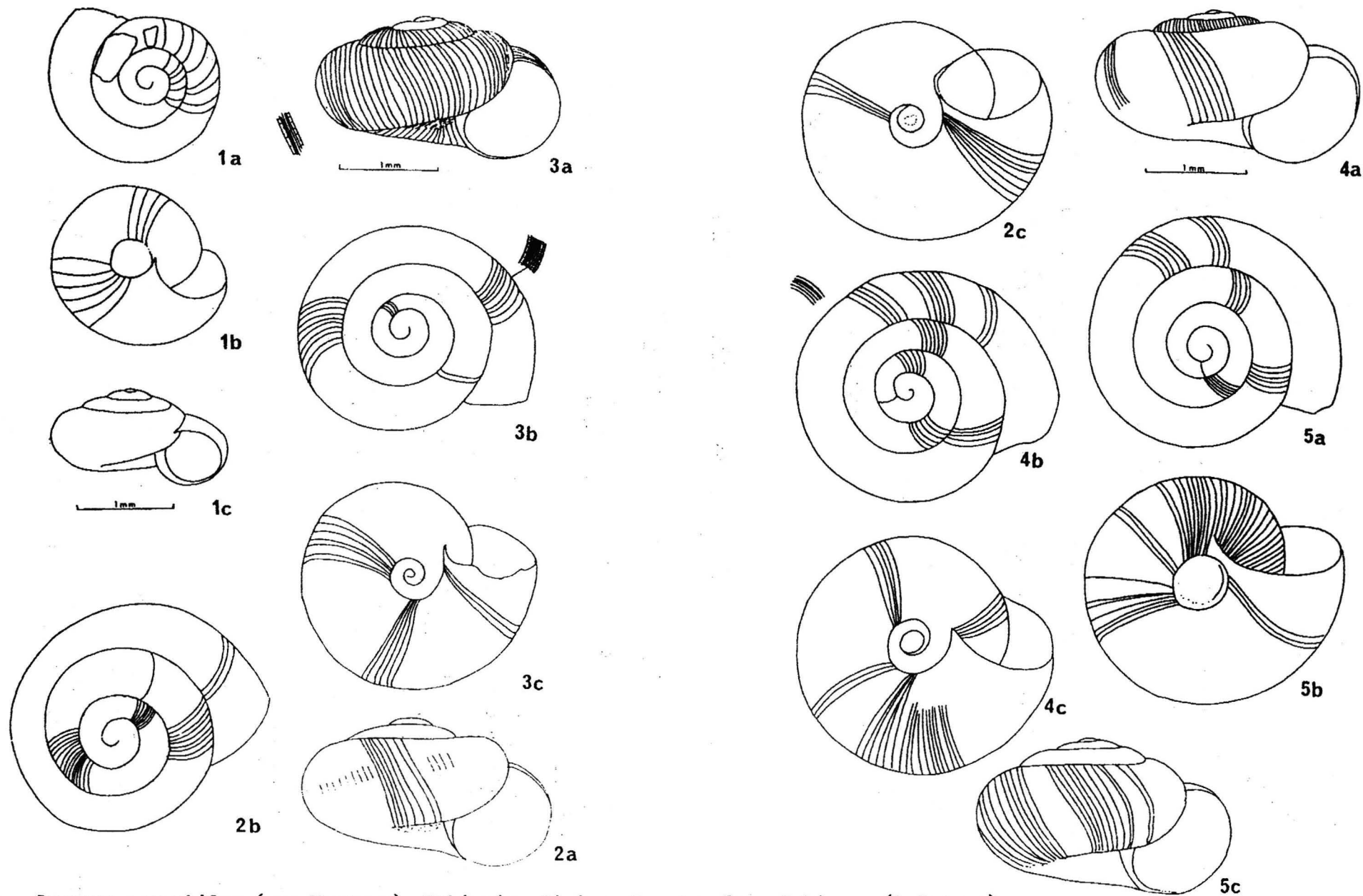
- 5). Kenya: Turi, leg. D. C. Thomas (National Museum, Nairobi).

Probably a Trachycystis.

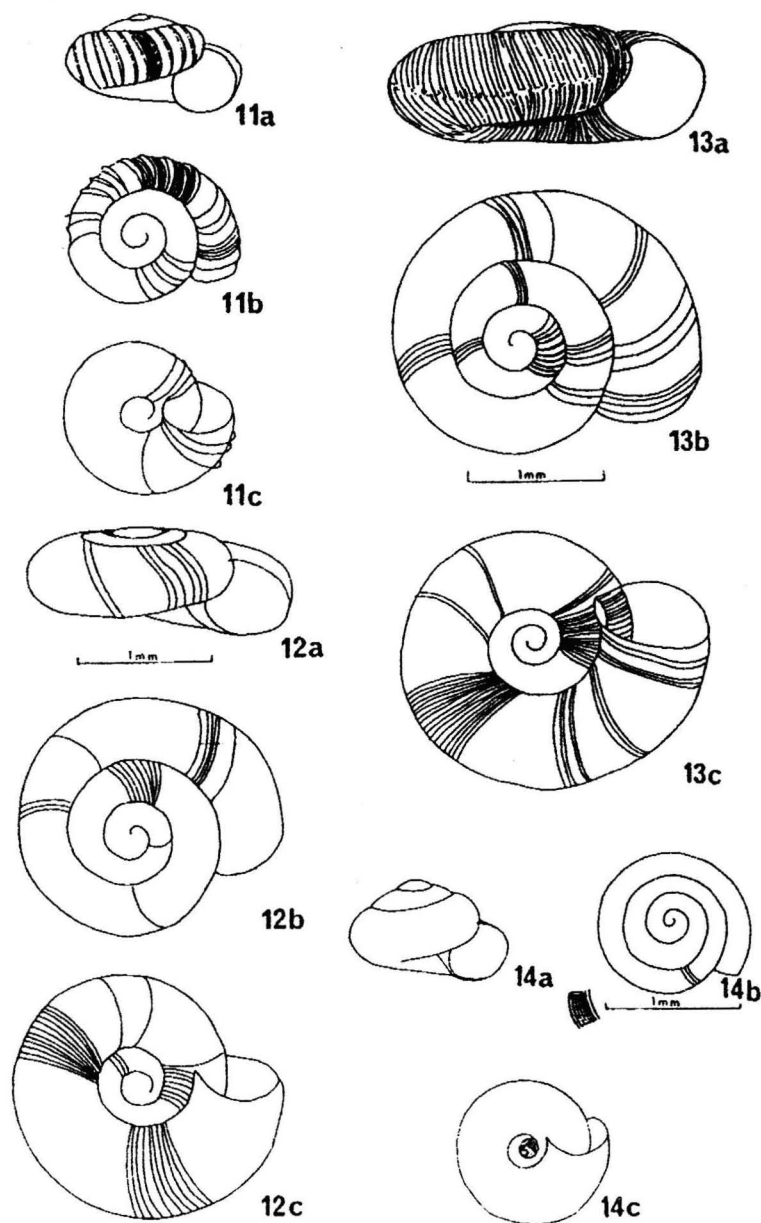
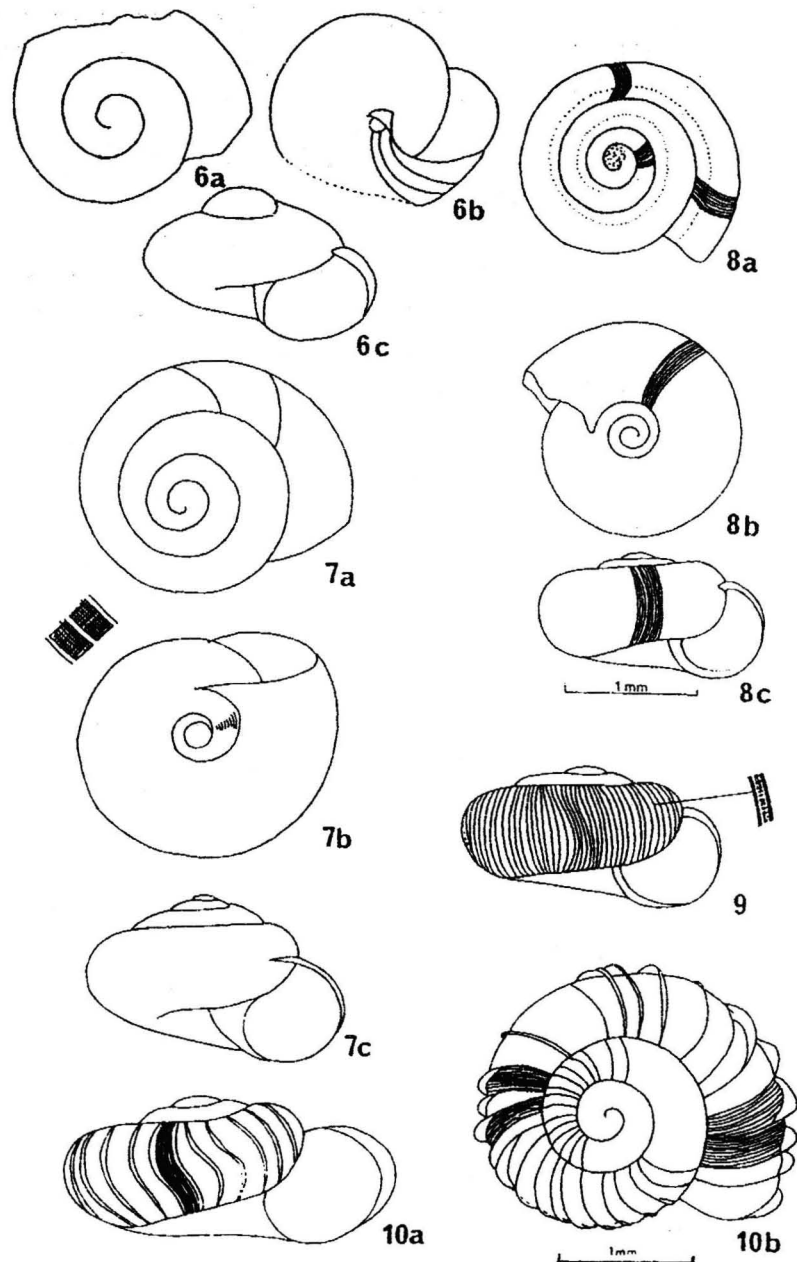
- 6). Kenya: W. end of Lake Naivasha, leg. R. M. Polhill 247b.

- 7). Kenya: Limuru, 2160 m., 1 May 1953, D. C. Thomas (National Museum, Nairobi).

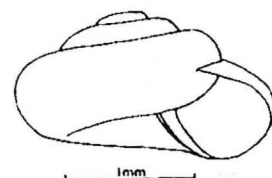
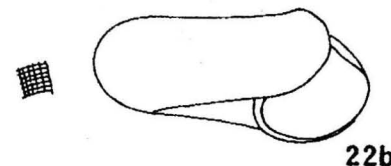
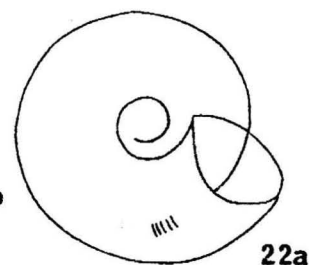
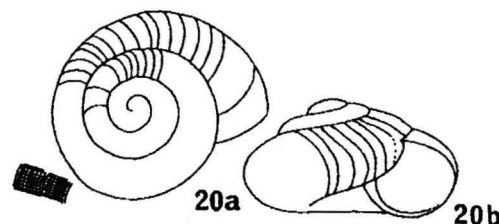
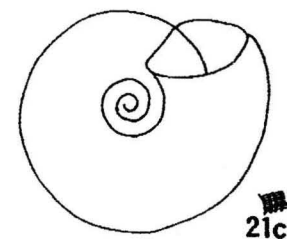
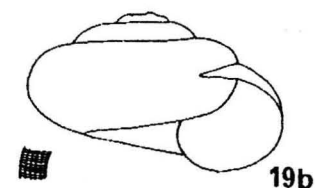
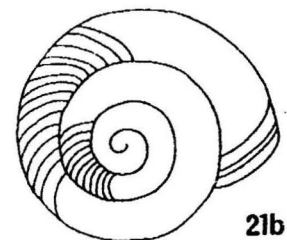
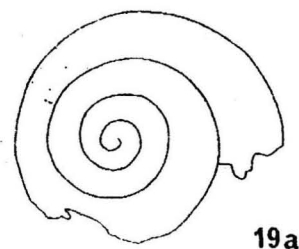
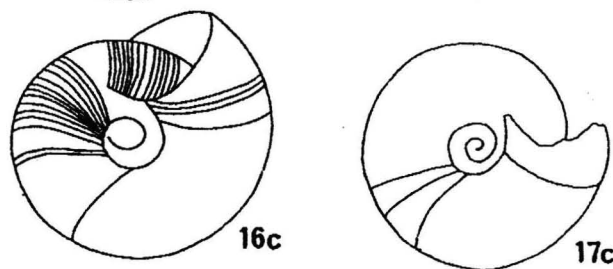
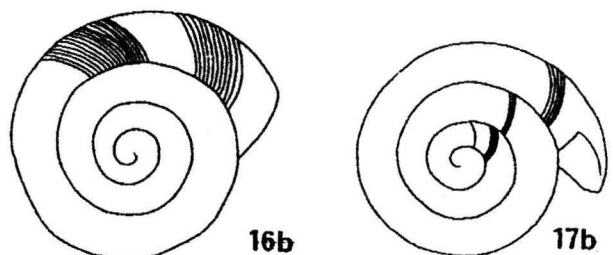
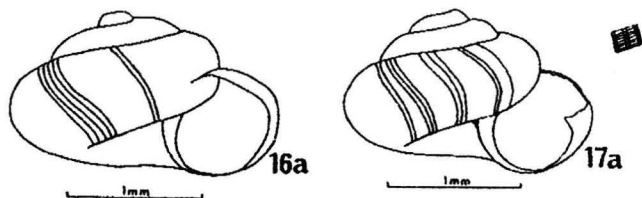
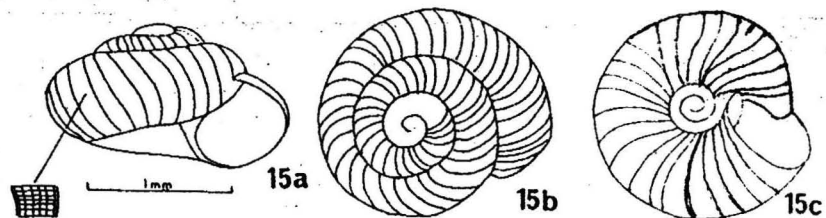
Possibly Punctum hottentotum. Shell of small specimen 1.5 x 1.25 x 1 mm.,



- 1, abc. *Punctum cryophilum* (von Martens). Ethiopia, Simien, Bayeta, leg. Schimper (holotype).
- 2, abc. *Trachycystis abyssinica* (Jickeli). Ethiopia, 'central Ethiopia', leg. Heuglin (holotype).
- 3, abc. *T. abyssinica* (Jickeli). Kenya, 'E. Uganda', Mau Escarpment, leg. Doherty (syntypes of *imitata* Smith, BM 1901, 12. 21. 126-129, a is one syntype, b & c another).
- 4, abc. *T. abyssinica* (Jickeli). Kenya, Naivasha, leg. Kemp (holotype of *pseudocharopa* Preston, Tervuren MRAC 26225).
- 5, abc. *T. abyssinica* (Jickeli). Kenya, Mt. Kenya to Rumuruti, leg.? (holotype of *approximans* Preston, Tervuren MRAC 26210).



6, abc. Punctum brucei (Jickeli). Ethiopia, Mekerka, leg. Jickeli (holotype). 7, abc. P. hottentotum (Melvill & Ponsonby). South Africa, Cape Province, Port Elisabeth, leg. Crawford (holotype BM 1905. 1. 26. 23). 8, abc. P. ugandanum (Smith). Kenya, Mt. Marsabit. leg. Holm 152. 9. P. ugandanum (Smith). Kenya, near Kijabe, Polhill 130 (SMF 306859). 10, ab. Trachycystis lamellifera (Smith). Kenya, Mt. Elgon, south side, Kimilili R., leg. Holm 115 [the 114 of my 1984 note is an error]. 11, abc. ?T. lamellosa K.Pfr. Tanzania, W. Usambaras, Mkusi, leg. Verdcourt. 12, abc. T. iredalei Preston. Kenya, Igembi Hills to Nyeri, Kemp (holotype, Tervuren, MRAC 27278). 13, abc. T. iredalei Preston. Kenya, Cherangani Hills, leg. Pitman (specimen named bernardinae, Liverpool Museum 1965: 141). 14, abc. Punctum pallidum Connolly. Mozambique, Mt. Vengo, leg. Cressy (holotype, BM 1925. 8. 4. 26).



15, abc. P. ? hottentotum mkusiensis Verdcourt. Tanzania, S. slope of Mt. Hanang, 2400m., leg. Basilewsky & Leloup (Tervuren, MRAC 789030). 16, abc. P. kilimanjaricum Verdcourt. Tanzania, Kilimanjaro, near Peter's Hut, 4050m. leg. Verdcourt (holotype). 17, abc. P. kilimanjaricum Verdcourt. ditto (paratype). 18, abc. P. ? cryophilum (von Martens). Ethiopia, Manegasha National Park, leg. Holm 157. 19, ab. P. ? hottentottum (Melvill & Ponsonby). Kenya, Limuru, leg. Thomas. 20, abc. P. ? hottentottum (Melvill & Ponsonby). Kenya, Limuru, leg. Thomas. 21, abc. P. sp. Kenya, Kisumu to Kericho, Kapsarok, leg. Durham University Exped. comm. M. Pickford. 22, ab. P. sp. Tanzania, Ngorongoro Crater, leg. Hesse. 23. P. pygmaeum (Drap.). England, Bedfordshire, Markham Hills, leg. D. Guntrip.

more or less lamellate with transverse and spiral striae between the ribs extending up to protoconch, the extreme apex smooth; $2\frac{1}{4}$ whorls of reticulate sculpture. A larger darker brown specimen, 2 mm. wide with 3.5-4 whorls. Very similar to East London material labelled P. hottentotum and to P. cryophilum.
8). Kenya: Nairobi, Karura Forest, 1660 m., 13 Dec. 1964, leg. Å. Holm 6 (Stockholm Museum).

Shell spoilt, probably a Trachycystis.

9). Kenya: Mt. Kenya, Upper Kerita West Valley, 3750 m.

Possibly Punctum sp. near P. pallidum.

10). Kenya: N. slopes of Mt. Kenya, Mar. 1966, leg. R. Harmsen (National Museum, Nairobi).

A damaged juvenile 1.5 mm. wide with sculpture of Punctum, very similar to P. hottentotum mkusiense and to P. cryophilum.

11). Kenya: Kisumu to Kericho, Kapsarok, leg. Durham University Exped. via M. Pickford (National Museum, Nairobi).

Punctum with strong transverse ribs and spiral striae particularly near umbilicus and within it.

12). Kenya: Kakamega Forest, Kisieni, 1600 m., 19-21 Jan. 1969, leg. Å. Holm 141 (Stockholm Museum).

A shell 1.8 mm. wide of 4 whorls, granulate apex, very close transverse striae but no spirals; probably a Trachycystis.

13). A fragmentary specimen with same data as last but apparently not the same.

14). Tanzania: Ngorongoro Crater, leg. P. R. Hesse (National Museum, Nairobi).

This damaged shell 2.2 mm. wide resembles the type of hottentotum but is darker. In its striation and its radula it is very similar to P. kilimanjaricum but a recent re-comparison with the type has convinced me it probably is P. hottentotum.

It is clear nothing can be done with these odd specimens until much more material is available and a careful comparison made with the early-described species from Ethiopia and South Africa. There may be many species or very few. These notes serve to show, however, that the group is widespread in East Africa. With the exception of T. ariel which can occur as low as about 200 m. the rest extend from 1400 to over 4000 m. and definitely belong to montane or submontane associations. With the exception of Haplohelix and various Vitrinidae Punctum is the only other genus to occur above 4000 m. in East Africa.

My thanks are due to Dr. R. Kiliass (Berlin), Dr. P. Mordan (British Museum, Natural History) and Dr. F. Puylaert (Tervuren) for kindly loaning me types.

B. Verdcourt

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REVIEW OF AN ATLAS OF SEA AREA 15

Occasionally, the familiar stream of frustrating circumstances we call 'life' is punctuated by something pleasing. One such is Jan Light's privately published "The Marine Mollusca of Wight (Sea Area 15) a Provisional Atlas". Several years of field work in Area 15 is now encapsulated in an A4, 64-page atlas, as neat and tidy as any I have seen.

Two introductory pages are followed by 232 maps of SA15 showing the distribution of 219 species, leaving 13 blank maps for additional species. The coast covered by each map extends from near Peacehaven in Sussex, to just beyond Swanage in Dorset. Part of Poole Harbour actually extends beyond the western boundary of SA15, but is sensibly included. There are no historical records, all are post 1980, the majority post 1985.

Each map is overlain by a grid of 2-minute latitude and longitude rectangles, making 577 rectangles on each map. The recording symbols are: a solid black circle for a live record; an open circle enclosing a star for 'fresh-dead'; and an empty open circle for any 'dead-shell'.

It is a provisional 'state of the art' atlas so it would be unrealistic to expect comprehensive coverage, and it certainly looks as though the Isle of Wight has received considerable attention. Nevertheless, the two maps, (no. 29) Littorina littorea and (no. 134) Mytilus edulis, show that, even if the Isle of Wight has been a favourite venue, the overall coverage for SA15 has been pretty thorough. Further, considering the number of isolated off-shore live-dots, it is clear that the survey has not been confined to shore-recording: yet I am surprised to see two 'live dots' well off the east coast of the Isle of Wight, and one south of Brighton, for Mytilus edulis. I am not arguing, just surprised.

Enough praise: I have a small complaint. It is a pity that the zeros of the minutes of latitude have been lost in the reproduction and the binding process, lost because they are offset and protrude beyond the degree numbers. It hardly causes any inconvenience but it slightly detracts from an otherwise excellent publication. The notation for longitude does not suffer in this way.

Jan Light asks for all atlases to be returned, perhaps in December 1992, so that any new records can be transferred to master maps, and a new up-dated atlas produced and distributed 'at cost'. One can only admire such optimistic confidence that new records will be returned. My guess is that the only updates will be those provided by Jan and her working colleagues.

Finally, Ian Killeen, now well established in the marine scene, gets a well-deserved acknowledgement. There is a prodigious amount of information in the atlas, so that at £3.00 it is a real bargain in a world of diminishing bargains.

Phil' Palmer

A LETTER FROM SIR JOHN KIRK CONCERNING SHELLS

Whilst looking at letters concerning Emin Pasha in the Keeper of Zoology's Archives at the British Museum (Nat. Hist.) I came across one written by Sir John Kirk (see Newsletter 91) from Zanzibar dated 18 Oct. 1880 to Albert C. L. G. Günther (1830-1914) then Keeper of Zoology (1.17.256). The writing is worse than mine and I could not make out every word but he states that he has sent by the last steamer a box among the contents of which were some shells collected in Lake Tanganyika. He adds "I have since received two additional species and duplicates from the same lake and am sending them also". I am unable to make out the name of the consignee (? agent) but whoever it was had been told to put them at once in Günther's hands. To Günther he says please have them described. He was most anxious for this to be done quickly as 'we will be anticipated by other countries if we lose time as travellers now go everywhere in Africa'. He warns that Dr. Peters has a naturalist who is sending all he can to Berlin and laments 'I am not able to collect myself but I do what I can still to keep our museums ahead so if there is ----- new in the Tanganyika shells secure the first publication and keep the types with us'. Kirk, whose constant warnings about German political and economic expansion in East Africa were pointedly ignored by the Foreign Office and Government, must have been well pleased that his specimens were much appreciated and dealt with very quickly. On the 28 Jan. 1881 the Zoological Society received a paper from E. A. Smith 'On a collection of shells from Lakes Tanganyika and Nyassa and other localities in East Africa' which appeared in the Proceedings dated 15 Feb. 1881. Smith explains in his introduction 'The collection of shells about to be described has been derived from three sources. Part of it was collected by the Rev. Edward Coode Hore, of Ujiji, and presented to the British Museum by his brother John Coode Hore, to whose liberality that institution owes the possession of the valuable collection which I had the pleasure of reporting upon in these 'Proceedings' last year. The second set, partly collected by Mr. Hore and in part by Dr. John Kirk of Zanzibar, was kindly consigned to the Museum by the latter. The third, and by far the largest, series was collected by Mr. Joseph Thomson (Newsletter 84), who has recently returned from an exploring expedition in Central Africa despatched by the Royal Geographic Society, whose council has placed the specimens in the national collections'. So Kirk need not have worried. It was some five years before Bourguignat began his outpourings. Nearly all the peculiar Lake Tanganyika species were described by Smith, Woodward and Moore and by far the largest number by Smith. The paper mentioned has three excellent lithographed plates by E. H. Searle and it is sobering to reflect that several of the species depicted have never been re-collected to this day. Thomson's more than vague

'locality' 'Between Lake Nyassa and east coast' more or less following the Rovuma River has not been examined by many collectors.

B. Verdcourt

MARINE CENSUS SCHEME - AREA REPRESENTATIVES

Since my last notice of changes (Conch NL 101:19-20), the following Area Representatives have resigned: Dr. P. F. Kingston (S4W & S8), Mr. F. R. Woodward (S9), Dr. J. Llewellyn Jones (S12 & S13), Mr. D. Worth (S14), Dr. A. R. Brand (S26), Dr. B. M. Healy (S27). I would like to thank them all for their contributions to the scheme, in particular, Dr. Llewellyn Jones and Mr. Woodward.

A complete list of current representatives and vacancies is given below.

S1	SHETLAND	Mr. A. Skene (see S3).
S2	SUTHERLAND	Mr. R. G. Meiklejohn, [REDACTED], Thurso, Caithness, Scotland, [REDACTED].
S3	ORKNEY	Mr. A. Skene, [REDACTED] Stromness, Orkney, [REDACTED].
S4W	WEST VIKING	vacant.
S5	MORAY FIRTH	Dr. S. M. Smith (see S7).
S6	ABERDEEN	Dr. S. M. Smith (see S7).
S7	FIRTH OF FORTH	Dr. S. M. Smith, Woodleigh, Townhead, Heyton, Cumbria, CA4 9JH.
S8	NORTH SEA	vacant.
S9	NORTHUMBERLAND	Dr. J. Foster-Smith, Dove Marine Laboratory, Cullercoats, North Shields, Tyne and Wear, NE30 4PZ.
S10	DOGGER	Mr. T. Pain, [REDACTED], Millbank, London, [REDACTED].
S11	YORKSHIRE	Mr. A. Norris, Natural History Dept., City Museum, Municipal Buildings, Leeds, LS1 3AA.
S12	WASH	Mr. I. J. Killeen, [REDACTED], Felixstowe, Suffolk, [REDACTED].
S13	THAMES	Mr. I. J. Killeen (see S12).
S14	EAST CHANNEL	Mr. I. J. Killeen (see S12).
S15	WIGHT	Mrs. J. M. Light, [REDACTED], Godalming, Surrey, [REDACTED].
S16	PORTLAND	Mr. D. R. Seaward, [REDACTED], Sherborne, Dorset, [REDACTED].
S17	CHANNEL ISLANDS	Mr. R. N. Brehaut, [REDACTED], St. Peter Port, Guernsey, Channel Islands.
S18	PLYMOUTH	Mrs. S. M. Turk, [REDACTED], Camborne, Cornwall, [REDACTED].
S19	SCILLY ISLES	Mrs. S. M. Turk (see S18).
S20	NORTH CORNWALL	Mrs. S. M. Turk (see S18).
S21	BRISTOL CHANNEL	Dr. P. G. Oliver, Head of Invertebrate Zoology, National Museum of Wales, Cathays Park, Cardiff, CF1 3NP.
S22	CARDIGAN BAY	Dr. P. G. Oliver (see S21).
S23	ANGLESEY	Mr. E. I. S. Rees, School of Ocean Science, University College of North Wales, Menai Bridge, Gwynedd, LL59 5EH.
S24	LIVERPOOL BAY	Dr. I. D. Wallace, Keeper of Invertebrate Zoology, Liverpool Museum, William Brown St., Liverpool, L3 8EN.
S25	SOLWAY	Mr. H. N. Hammond, [REDACTED], Aspatria, Carlisle,

S26	ISLE OF MAN	vacant.
S27	DUBLIN	vacant.
S28	BELFAST	Mrs. H. C. G. Ross, Ulster Museum, Botanic Gardens, Belfast, BT9 5AB.
S29	CLYDE & ARGYLL	Dr. S. M. Smith (see S7).
S29a	ANTRIM	Dr. J. D. Nunn, [REDACTED], Belfast, [REDACTED].
S30	MINCH	Dr. S. M. Smith (see S7).
S31	LEWIS	Dr. S. M. Smith (see S7).
S32	UIST	Dr. S. M. Smith (see S7).
S33	NORTH DONEGAL	Mr. B. E. Picton, Dept. of Zoology, Ulster Museum, Botanic Gardens, Belfast, BT9 5AB.
S34	DONEGAL BAY	Dr. J. D. Nunn (see S29a).
S35	MAYO	vacant.
S36	GALWAY BAY	Mr. D. McGrath, Department of Zoology, University College, Galway, Ireland.
S37	FASTNET	vacant.
S38	CORK	Mr. L. S. Atkins, [REDACTED], Douglas, Cork, Ireland.
S39	NYMPHE BANK	Dr. D. Minchin, [REDACTED], Dartry, Dublin 6, Ireland.
S40	LABADIE	vacant.

In writing the Marine Molluscs of north west Europe (see notice in the last Newsletter, No. 116, p. 364), I was greatly helped by several Continental workers, and it is intended to maintain this contact for North Sea and Channel areas adjacent to those listed above. Such co-operation may in the future be formalised for these and other peripheral and offshore areas. The Marine Recorder will be glad to know of any work which adds to the knowledge of the distribution of marine molluscs within the area covered.

Please note that I resigned as Marine Recorder in March 1991, but continue as representative for S16, and that Mrs. J. M. Light succeeds me as Recorder while remaining representative for S15.

Anyone keen and interested who wishes to be considered for any of the above vacancies should write to Mrs. Light. It is not necessary to live within the area.

Dennis R. Seaward

MARINE RECORDER - VALEDICTORY MUSINGS

I have held the post of Marine Recorder since 1979 and consider the time has come for changes in direction of the marine census scheme, best introduced by someone new. I am also conscious that work in my own sea area of Portland and in other areas of interest has languished. Having cleared my desk of the sea area atlas 'update', it was an opportune moment to resign, which I did at the Society AGM in March. The new Marine Recorder is Mrs. Jan Light who needs no introduction, and whom I commend to you. I now claim the indulgence of a few personal thoughts on the scheme and its future.

Mollusc shells are attractive, collectable - indeed, many serious students became 'hooked' from the casual but compulsive hoarding of empty shells from the

strandline. But, most importantly, shells are persistent; so persistent, in fact, that it is sometimes difficult to tell whether a shell was vacated yesterday, or ten, or a thousand years ago. The scheme has three categories of record status - live, fresh shell, or worn shell. Even a fresh shell may have been moved a considerable distance by current transport. The collection and study of shells is highly important in, for instance, providing reference specimens, or in the assembling of growth series allowing reliable identification of juveniles as shown by Ted Phorson in his excellent series of Newsletter articles. But for recording purposes, and except in under-recorded areas, effort is now usually better directed towards finding live animals.

There are also three date categories of record - pre-1900, 1900-1950, and post-1950; thus making nine states! It is not desirable to use more than three symbols on distribution maps for clarity, and published maps have simplified portrayal in this way. Publication of the Sea Area Atlas and the Marine Molluscs of North West Europe ('MMNWE') has for most species provided a basis from which it will now be possible to concentrate on new records from a contemporary datum (1980? - 1990?), with reference back to those works for the earlier status.

Nomenclature should be stabilised for some time with the imminent appearance of a new 'British' list by Smith and Heppell with copious annotation and synonyms and a lot of surprises; it is to be hoped that it will be accepted in a European context. In the much longer term, work has just started on the preparation of a 'Check List of European Marine Molluscs' ('CLEMAM'), including the Mediterranean, with the support of Unitas Malacologica.

It is important to be clear of the identity of the animal that we are recording, and this can raise problems under several headings. In some groups, e.g. thyasirids, there is no satisfactory published definition of the species, while some guides are not easily accessible. In MMNWE, I give copious references to descriptions/illustrations of species, and even obscure works can be obtained through the invaluable local public library service. The annual 'workshop' sessions initiated by Jan Light provide an excellent way to improve personal identification skills. I had hoped to arrange for referees to help with difficult groups and, although some experts have helped greatly in this way, I have not formalised or publicised the arrangements; no doubt my successor will be more efficient. I am also conscious of being less than diligent in ensuring that voucher specimens are available for future reference. In a period of apparent rapid climatic change, we must expect more exotics to come to our notice, and I hope that MMNWE will help to break down the rather parochial way in which we tend to regard 'our British fauna'.

Mention of the effects of climatic change prompts me to suggest that we should add a quantitative element to the more-or-less exclusively qualitative marine census scheme as presently devised; it can hardly be called a census without enumeration in some form. Our resources in manpower are so slight - perhaps 5% of the membership actively interested in British/Irish marine molluscs? - that it is not realistic to do much more than photomonitoring or regular transects at some key sites.

Distribution data are usually portrayed in the form of presence/absence dot maps, where one dot may equally indicate one individual in, or abundance throughout, the unit of area chosen. Sea areas are so large and disparate, particularly in area, that dot maps on that basis, while considerably better than anything previously available, provide only a very crude picture. In future, I see sea areas as having little more than administrative significance, with area representatives co-operating in regional studies, not necessarily sea area based,

with the aim of producing regional atlases on a relatively fine, uniform grid. The smaller the area of the grid unit chosen, the more the product may be regarded as having a quantitative element. The pattern has been pioneered in the marine field by McKay and Smith with their 1979 East Scotland Atlas having a grid of 6' latitude x 12' longitude (roughly 11 x 11km) and continued by Smith, McKay and Nunn for West Scotland and Northern Ireland (in preparation), and is now followed by Light with her provisional sea area 15 Wight Atlas to the much finer 2' lat. x 2' long. grid (roughly 4 x 2½km) which is comparable to land-based county wide tetrad (2 x 2km) schemes. I floated the idea of a Channel Atlas to include the French coast and waters in 1987 (with a request for help - the response was underwhelming! - Conch NL 101:22). Is it realistic to hope that, in collaboration with our colleagues on the Continent, we have a series of compatible atlases covering the seas of north west Europe by the end of the century?

My thanks to all who have helped to make my period as Marine Recorder so enjoyable, and my best wishes to my successor.

Dennis R. Seaward

INTERNATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE

c/o British Museum (Natural History), Cromwell Road, London, SW7 5BD

Applications published in the Bulletin of Zoological Nomenclature.

The following applications were published on 26 March 1991 in Vol. 48, 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, I.C.Z.N., c/o. The Natural History Museum, Cromwell Road, London, SW7 5BD.

Case 2736 Haustator Montfort, 1810 (Mollusca, Gastropoda): proposed conservation Richard E. Petit, [REDACTED], South Carolina 29582, U.S.A.

Jacques Le Renard, Muséum national d'Histoire naturelle, Paris, France
Abstract. The purpose of this application is the conservation of the turritellid generic name Haustator Montfort, 1810 by the suppression of Aculea Perry, 1810, an unused senior subjective synonym.

Case 2769 Laeocochlis Dunker & Metzger, 1874 (Mollusca, Gastropoda): proposed conservation as the correct spelling

David Heppell, Department of Natural History, National Museums of Scotland, Edinburgh, EH1 1JF, U.K.

Abstract. The purpose of this application is to establish Laeocochlis Dunker & Metzger, 1874 as the correct spelling of the generic name for a European triphoroid mollusc. The valid name of the type species is L. macandraeae (A. Adams, 1856).

Case 2732 Ceratites nodosus (Cephalopoda, Ammonoidea): proposed attribution of the specific name to Schlotheim, 1813, and proposed designation of a lectotype

Max Urlichs, Staatliches Museum für Naturkunde Stuttgart, Rosenstein 1, D-7000 Stuttgart, Germany

Abstract. The purpose of this application is to conserve the name of the Triassic ammonite Ceratites nodosus (Schlotheim, 1813) in its

current usage by designation of a lectotype from Schlotheim's original collection.

Opinions published in the Bulletin of Zoological Nomenclature

The following opinion was published on 26 March 1991 in Vol. 84, Part 1 of the Bulletin of Zoological Nomenclature.

Opinion 1623 Risomurex Olsson & McGinty, 1958 (Mollusca, Gastropoda): Ricinula deformis Reeve, 1846 designated as the type species

GENERAL NOTES

CRUISES ON CUMULUS

'Cumulus' is one of the Meteorological Office's Ocean Weather Ships. She is stationed in the Northeast Atlantic, usually at Ocean Station LIMA (55°N 20°W). She makes routine port calls at Greenock. Provided that her mission as a weather ship is unaffected, the Director General of the Meteorological Office has decided her excess capacity can be exploited. As a result Oceanscan Master Services Ltd. can offer the ship's facilities for use in training and education at a fraction of the cost that would be needed for using a dedicated oceanographic research vessel. The resources of the ship can be offered at prices comparable to those you would pay at any reasonable hotel. 'Cumulus' is available for use as a platform for sampling and other research work, equipment testing and calibration. The company itself offers taught courses in marine science and technology, observational methods and the realities of seagoing. Alternatively, clients can take the ship on a facilities only basis in order to put on their own programmes. The company is also able to take observers who want to enjoy the experience of sailing on an ocean weather ship and learn about her operation.

Brochures describing the ship and her facilities, and details of costs of trips for individuals or groups, can be obtained from Dr. Celia Ellis (██████████, evenings) or Dr. Tony Rees (██████████, daytimes).

CHARITY BOX

At the meeting on 19 January 1991 several members suggested to me that a 'Charity Box' would be a good idea. Many members probably already collect 1p coins etc., and donate them to whichever Charity happens to be convenient or most in need. The Conchological Society is a registered Charity and would be delighted to receive such collections.

A Charity Box will be provided at meetings.

Mrs. E. B. Rands

VISITING MALTA?

Alex Wright, [REDACTED] Floriano, Malta, would be pleased to see any member who visits Malta and would be happy to show them his collection of shells. His main interests are in exotic Marines, Cones, Cypraea, Murex, Volutes, Mitres, Olives and Pectens.

EXCHANGE REQUESTED

Mr. Masin of Kiev wishes to exchange shells with members. He has sent me a long list of material he has available and a list of the specimens he requires - mainly Cypraea. Anyone interested can obtain the lists from me, P. E. Negus. His address is in Cyrillic only. He would also like the books 'Cowries of the World' Burgess, 'Compendium of seashells' Abbott, Dance in exchange for his shells.

CONCHOLOGICAL SOCIETY OF G.B. & I. A.G.M.

On 16th. March last, Mr. F. R. Woodward was elected President, Mrs. J. Light was elected Marine Recorder and Dr. R. Preece was elected Journal Editor. All other Officers were re-elected (the post of Secretary remaining vacant). The following were elected to Council (replacing those retiring), Mr. P. Lee, Mr. E. G. Philp and Dr. E. E. Sandor.

CONCHOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND

1025th. (Ordinary) meeting held on 19th. May 1990 at B.M.(N.H.).

In the chair: Mrs. M. Fogan with 31 members and friends present.

Nominations for membership: None.

Lecture of the day: Dr. Mary Seddon: "Land snails of the Madeiran Islands".

Any other business: There was a petition available for signing concerning BM(NH) funding cuts.

Meeting closed at 5.25 p.m.

Members' exhibits:

- | | |
|------------------|--|
| Dr. M. B. Seddon | -Land mollusca from Porto Santo, Madeiran Islands.
-New book available for purchase from National Museum of Wales |
| Dr. B. Colville | -Some snails of Porto Santo. Red Data Book for the Maltese Islands. |
| Mr. D. C. Long | -Australian Tertiary Volutidae. |
| Mr. T. Pain | -Extinct endemic land snails from St. Helena and Madeira. |
| Dr. R. C. Preece | - <u>Craspedopoma</u> from the British Lower Tertiary. |
| Dr. J. Chatfield | -(a) <u>Limax maculatus</u> from the Lake District.
-(b) Copy of "Slugs of the USSR" by I. M. Likharev and |

A. Wiktor.

-(c) Letter from Russian collector.

- Miss J. M. Nelson -The "Alpha Shell Book" for children.
-French Journal of Conchology - paper about pollution in Australia.
- Mr. M. F. Symonds -Snails from Formentera.
- Mr. E. O. Bishop -*Opisthostoma* spp. from northern Borneo (Malaysia).
- Ms. J. E. Reynolds -*Eobania vermiculata*.
-Article on slugs and snails in "The Garden" magazine.
- Mr. D. W. Guntrip -Live foreign snail found on celery in staff canteen in Stevenage.

1026th. (Ordinary) meeting held on 20th. October 1990 at B.M.(N.H.).

In the chair: Mrs. M. Fogan with 35 members and friends.

Death of members: The deaths were announced of - Mr. W. Karo - member since 1962
Dr. L. Forcart of Switzerland - member since 1930.
Dr. Verdcourt was asked to write an obituary for Dr. L. Forcart.

Nominations and elections of new members:

- K. Hill, [REDACTED], Hornchurch, Essex, [REDACTED]
D. J. Blaes, [REDACTED], Walton, Peterborough, Cambs., [REDACTED]
A. Roberts, F.L.S., [REDACTED], Bromley Cross, Bolton,
[REDACTED]
A. Gardener, [REDACTED], St. Johns, Worcester, [REDACTED]
L. A. Cram, [REDACTED], Winscombe, Avon, [REDACTED]

These were elected en bloc.

Lecture of the day: Dr. David Reid "The Biology and Classification of the British Periwinkles (*Littorina*)".

Announcements and correspondence: Books were auctioned for the benefit of the Society.

Any other business: It was reported that the Society is looking for a new Honorary Secretary.

Meeting closed at 5.05 p.m.

Members' exhibits:

- Dr. B. Verdcourt -Some recent notices of snails in the press.
- Mr. Fred Pinn -Shells of Pondicherry (India, Indian Ocean).
- Miss E. F. A. Fogan -Unusual gastronomic items from Menorca.
- Mr. Kevin Brown -(1) Sale of world's largest pearl (2) Alcohol preference in slugs (3) Molluscan invaders of American Great Lakes.
- Mr. T. Pain -British species of *Colus* Röding, 1798. (Prosobranchia-Buccinidae).
- Mr. D. C. Long -(1) J. Conch. papers on *Littorina* (2) Gloucestershire *Littorinids* (3) *Vallonia* from Metheringham CSGBI field meeting.
- Mrs. C. Pain -British Winkles.
- Mathilde Duffy -Drawings of shells.

Printed by: D. C. Armsworth, [REDACTED], Baldock, Herts. Tel.: [REDACTED]

FIELD MEETINGS 1991

Important Notice

During the last eight months Members have often experienced difficulty in reaching me on the telephone, particularly just before field meetings. This is due to my unpredictable work schedule which takes me away from home, usually at short notice, and is a situation which is unlikely to change. Whilst I make every effort to ensure that as much detail as possible appears in the Newsletter notice it is not always practical to finalise the arrangements several months in advance. The Society does not want anyone to miss a meeting through lack of information, therefore in future the telephone numbers of the leader will be clearly given. Members requiring last minute details of a particular meeting should then contact the leader direct. IJK

Saturday, 22 June. South-east Suffolk

Leader: Philip Cambridge, Tel [REDACTED]

The first part of the day will be spent investigating exposures in the Coralline Crag at Sutton where several sections have been recently cleaned to show the stratigraphy. A good series of small fossil molluscs can be had from from the Coralline Crag and also the Red Crag. The party will then either walk or drive to Ramsholt where there are further Crag exposures. There is also an interesting modern estuarine fauna here which includes Littorina obtusata aestuarii at its type locality (very few people appear to have found it in recent years though). Finally we will examine the well-known Red Crag pit at Buckanay Farm, Alderton. In addition to the fossils, there is a very interesting land snail fauna that includes Monacha cartusiana

The Crag deposits are soft and easily worked with trowels and knives. Sieves are useful for locating the smaller species. Plastic boxes, tubes, bags are needed to take material home.

Meet at Ipswich Railway Station at 10:45. There is a 09:30 train from London, arriving 10:40. The drive to Sutton is about 12 miles.

Saturday, 13 July. North Norfolk coast

Leader: Derek Howlett, Tel [REDACTED]

The aim of the day is to record the the molluscs living on the shore at West Runton and examine the cliff exposures of the Cromer Forest Bed. Those wishing to extend their day can make the journey to Holme-next-the-Sea to find Ensis americanus and record the other fauna.

West Runton offers much of interest for malacologists and geologists. There are large areas of flint/chalk rock pools exposed by the receding tide and the borers can be found (small hammer and chisel required). It is one of the few breaks in the high cliffs between Cromer and Sherringham and the black peat of the Cromer Forest Bed is usually exposed at the bottom of the cliff. The fauna of the CFB is mainly small freshwater species which are best obtained by processing

samples over sieves at home.

Holme-next-the-Sea (a further 35 miles west) has a vast expanse of sand with some peat banks, backed by an extensive dune system which forms part of a nature reserve. This is the site where the shells of Ensis americanus have recently been found.

Meet at West Runton beach car park at 11:00. OS sheet 133, Ref. TG185433. It may be possible to collect anyone coming by train and they should contact the leader giving adequate notice. Low tide 15:00.

Saturday, 7 September. Pevensey, East Sussex.

Leaders: Phil' Palmer, Tel. [REDACTED] and Ian Killeen

Further recording and monitoring of the rich marsh drain system of Pevensey Levels. The fauna includes several nationally rare species such as Segmentina nitida and Pisidium pseudosphaerium.

In the afternoon we will go to Pevensey Bay to record the marine molluscs of the extensive sandy shore exposed at low tide (approx. 16:00).

Meet at Polegate Railway Station (TQ587048) at 11:15. There are regular trains from London Victoria.

Saturday, 28 & Sunday, 29 September. Porlock, N. Devon

Leader: Jan Light, Tel. [REDACTED]

The main purpose of this meeting is to record the molluscs of the rocky shores in the Porlock area, but there will also be ample time to examine the terrestrial fauna.

A house has been rented for the weekend and will be available to members from Friday afternoon to Sunday afternoon. Accommodation is limited to ten on a first come first served basis, and the cost for the weekend will be £25 per person full board. Those interested should write to Jan ([REDACTED], Godalming, [REDACTED]) as soon as possible enclosing a £10 deposit.

Saturday, 2 November. Burnham Beeches, Berks

Leader: June Chatfield

To assess the status of Spermodea lamellata and other species at this well-known site. Full details in next issue.

Saturday, 30 November. Molluscan Workshop

Full details in next issue

Hon. Programme Secretary: Ian Killeen, [REDACTED],
Felixstowe, Suffolk, [REDACTED]. Tel. [REDACTED]

THE CONCHOLOGISTS' NEWSLETTER

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Newsletter Editor: P. E. Negus,

September 1991 COPYRIGHT

Market Harborough,
Leicestershire,

Produced by THE CONCHOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND

RED CRAG MOLLUSCA - BUCKANAY FARM PIT

I read the account in Newsletter No. 112 on the field meeting to Buckanay Farm (Not Bucanay as reported) with interest as I have often visited this site myself. It is in an area of exceptional natural beauty and with interest, not only to geologists, but naturalists. I have watched a pair of hobbies chivying sand martins in the pit and admired the wild flowers. The Red Crag itself is a deposit which appeals to both the conchologist and the geologist and despite a century or more of study by many workers, still offers opportunity for more research. For many years the standard work on the molluscan fauna and the stratigraphy was the Monograph of the Palaeontological Society written by a single man, F. W. Harmer. His interests were wide including meteorology, Lord Mayor of Norwich and head of a clothing firm which only recently succumbed to the present economic climate. He divided the Red Crag into several divisions, zones and stages but these do not accord strictly with modern stratigraphical thought. His three divisions of the Red Crag - Waltonian, Newbournian and Butleyan - were based on molluscan assemblages and are more properly Molluscan Biozones recognised by a particular molluscan assemblage. He also defined the same stages geographically. South of the Orwell was his Waltonian, the Newbournian occupied the area up to the Deben and north of this, where the pit lies, was the Butleyan.

Subsequently R. Dixon attempted to relate the Red Crag faunas to the type of deposits in which they occurred, and recognised an Upper and Lower Red Crag. The method of deposition of sand beds in marine deposits frequently gives indications of current strength, depth of water, wave action, etc.. In his method the mollusca were identified, counted and the requirements of recent examples of the same species were compared with the Crag assemblages. As an example he used Glycymeris glycymeris, and assumed the Crag shells required a similar habitat to the recent. This is a very common shell throughout the Red Crag and if a number are collected from most sites it will be seen that more than one species is present. One is that found in the earlier Coralline Crag. Another is the distinct variety found at Walton-on-the-Naze. Yet another group has very variable outlines, some of which approach recent Mediterranean species, and this has been called G. variabilis by Continental authors. The shells from Walton are well-preserved, the valves sometimes still joined and examples in all stages of growth occur and are clearly a local population. On the other hand examples from the upper part of the Red Crag are almost all worn and broken and bored by sponges and annelids. In fact in the upper Red Crag a high proportion of most species are derivative. In this sense derived means either reworked from earlier deposits or transported from another area. Another example which can be taken is Nucella lapillus. The species prefers hard surfaces, rocks, pilings, etc.. This species was evolving rapidly during the Red Crag period from a large heavily ribbed form to one very close to the recent species. It is common throughout the

upper Red Crag but most specimens are worn and not in a habitat which matches that of the recent examples. The exception is in Red Crag sands in an accumulation of boulders at the foot of the ancient Coralline Crag cliff at Sutton Knoll where an early form is abundant together with Terebratula, Hinia, Colus and other species. Clearly, before an assemblage of mollusca can be used to determine habitat conditions it is necessary to be sure that the species selected actually lived either at or very close to the location in which they are found and in the case of extinct forms this is difficult.

In the Red Crag in the area of our pit there is a fairly common general sequence of beds though all facies may not be present at one site, or may not be exposed. At the base, and seldom exposed, there is usually a bed with numerous phosphate pebbles and some quite large flints from the Chalk, septarian concretions from the London Clay and medium-sized pieces of Miocene sandstone. This provided a suitable habitat for many forms, the growth of seaweed, barnacles, etc., while other forms bored into exposed patches of the underlying London Clay (Barnea, Zirphaea). As a result these lower beds are often very rich in well-preserved gastropods in good condition. In many pits the next series of beds are steeply dipping shelly sands. These represent mobile submarine sandbanks, the supply of material carried by prevailing currents from the N.E. The upper surface of the banks were planed flat and the material deposited on the forward slope which gradually grew. In any large section variations can be seen in individual beds. Some are almost pure sand, others very shelly. Others contain reworked basal bed material and are distinctly pebbly with numerous shark teeth and pieces of fossil bone. Many of the shells are strong, heavy, reworked bivalves such as Astarte spp, Glans, Cyclocardia and so on. It was not a very suitable habitat for mollusca though occasional colonies of bivalves such as Macoma and Spisula may have become established and been predated by naticids.

The sand wave facies was followed by shallowing and more horizontal bedding, often showing alternations of sand and silt, often with ripple marks and numerous trace fossils (Arenicola flats), or trough bedding. This latter is formed from a series of channels, often cutting into each other, formed by strong currents. The channel infills may vary considerably, some being merely sand, others shelly sand, and some almost entirely filled with shell material.

At Buckanay Farm Pit two series of deposits are visible. The lower basal bed is not visible but was dug out at sites in the area by Reid Moir in search of flint "artifacts". The lower bed visible consists of steeply dipping sand wave sets with scattered shells especially strong derivative forms like Astarte. One bed half-way down the slope into the pit consists largely of reworked basal bed phosphate pebbles with sharks' teeth and other fish remains. The top of these sloping beds is planed flat and the junction can be followed round the pit. It is marked by a thin layer of pebbles, flints, occasional derived fish teeth and pieces of very hard chalk, stained heavily by iron oxide so as to be almost unrecognisable unless a thin section is made when Senonian foraminifera can be observed. Such deposits are known as lag deposits by geologists. They are overlain by the upper series which are more or less horizontal and start with trough bedding, some of the channels being quite large. One such, on the N.W. face of the pit is filled with a jumble of rapidly accumulated shells, quite unsorted, large and small, gastropods and bivalves and this trough yields some very well-preserved small gastropods very similar to those in the type site of the Butleyan at Butley. The estuarine Scrobicularia plana occurs rarely as single valves, more often as fragments of the hinge and rather rarely non-marine shells also occur, both land and freshwater. This suggests closeness to an estuary or river mouth. The uppermost series in the pit are very thinly bedded

with abundant burrows. The larger can be referred to annelids but there are small branching burrows, often Y-shaped which have not yet been satisfactorily identified.

What we see at Buckanay is similar to other pits at Alderton and Butley with "Butleyan" faunas resting on "Newbournian". This shows the necessity for careful collecting in Red Crag sites. Much useful information is lost if material is collected from scree slopes or different beds and then mixed together. Ideally, material samples should be bagged for sorting at home, though the fine sand can be sieved out to reduce weight. In this way percentages of various species can be made, whether complete or fragmentary, worn or fresh-looking and many shells have hydrozoans, polyzoans, worm tubes and borings, gastropod predation holes and signs of crab predation or use by hermit crabs.

The list of Red Crag fossils on page 266 (N.L. 112) invites several comments. Shells like Scaphella lamberti, Dosinia exoleta, Glans senilis, Cyclocardia, Astarte (Isocrassina) omalii group, Panopaea, etc. are reworked from earlier beds and are known to occur in the Coralline Crag. Pecten maximus is probably P. grandis - Continental authors recognise more than one form in the grandis group. Chlamys varia is not now recognised from the Red Crag and the form is known as C. harmeri Altena. Ostrea edulis fragments may be either Ostrea or Pycnodonte cochlear, fragments are difficult to identify. Complete Ostrea valves are very rare in the Crag though complete Pycnodonte shells are not rare in the Coralline Crag at Ramsholt. Cerastoderma angustatum is only known from the upper part of the Red Crag. Casts of this species in ironstone at Sudbury and in similar state from the bottom of boreholes in the deep basin north of Aldeburgh help to identify the beds as upper Red Crag. Cardium edule probably includes the thicker earlier form C. edulinum (Sowerby) and possibly also C. glaucum. Pteromeris corbis is common as a Coralline Crag fossil but there are abundant fresh-looking examples in the Waltonian including some with joined valves and it seems probable that these are genuine members of the Lower Red Crag fauna. In the upper Red Crag they are probably derivative and examples from some beds of the Norwich Crag, found with bits of Coralline polyzoa etc. are certainly derivative. Such small compact species survive reworking very well, where larger shells are often only represented by fragments of the stronger hingeline or by juveniles. Of course these also survive transportation well and it may be difficult to decide which form of derivation has occurred.

The list of recent non-marine shells from the pit was very interesting. Were the specimens all live? Are they indicative of acid or limey soils? The Crag is generally overlain by either decalcified Crag or later sands and gravels which may be either fluviatile or glacial outwash. These support a very acid soil and pits in these upper deposits are easily distinguished even from some distance by the presence of bracken and gorse. Pits with shelly Crag are often a haven for lime-loving plants and there is a quite attractive flora at Buckanay in the summer.

Please do not consider this article as a criticism of the determinations in the Newsletter article. Not much work has been done on the Crag mollusca in Britain since the days of Harmer though more has been done in Holland and Belgium. A large part of the Red Crag fauna remains to be studied in detail and the taxonomy worked out. Rather I would like to highlight some of the problems in working on the Red Crag and to suggest what a rich field there is for continuing the work of Harmer and Wood. The Red Crag pits are not just places where lots of species can be found, their interest goes beyond that. Species were evolving rapidly in the Pliocene, conditions were changing, immigrants from

the Pacific were appearing in the North Sea. Very rarely odd forms turn up otherwise known only from the Miocene of Germany or France - real derivatives! Non-marine shells can turn up as isolated examples in the Red Crag in sites other than the Butleyan ones. My only success like this was a specimen of Arianta arbustorum wedged into a shell of Neptunea contraria at Walton-on-the-Naze but other prizes must remain to be found though care should be taken to see that it is not a case of contamination by burrowing forms! Perhaps Harmer was over-specifying a little when he claimed to have found over 650 species and well marked varieties in a single pit at Little Oakley.

Are there any recent deposits forming like the Red Crag? Well about ten miles offshore of Harwich in the Thames Banks, sand and gravels contain a mixture of Red and Coralline Crag shells, with some species now known only in the Mediterranean, from the warm Eemien Interglacial and a rather poor Recent fauna, though few people have had an opportunity to study this unusual mix of faunas.

P. Cambridge, March 6th. 1991

MOLLUSCS AS INTERMEDIATE HOSTS OF PARASITIC WORMS

Conchologists see snails and slugs as creatures of specific habitats but tend to overlook their interest as habitats in themselves for intermediate stages of a diverse worm fauna. In the days when I worked on worm control I used to jot down the outlines of their life-cycles encountered in the literature, partly because one never knew when one might come in handy for dealing with those time-wasting one-off queries, but mainly out of fascination with the web of parasitism. Coming across this material recently I thought perhaps some of it might serve to diversify members' appreciation of molluscan ecology.

The dominant parasites involved are the digenetic flukes, because they all require a mollusc as their first intermediate host in which they can undergo a multiplication phase. There are about 60 families of these worms whose members end up in every kind of vertebrate, as often as not reaching them via some secondary intermediate or transport host. A few even run to a third intermediate host for instance snail, then crustacean, then an amphibian/reptile and finally into a vertebrate. The young worms quite often affect the nervous system of secondary hosts so their odd behaviour is spotted by predators and any disability makes them easily caught, or they perhaps produce some lump or spot which attracts a peck from a bird. Those which don't have secondary intermediates when they leave the snail phase may burrow directly into the final host (like schistosomes) or encyst on their snail, or outside it on vegetation, and just wait to be eaten (like liver-fluke). Once inside their final hosts flukes end up, according to their kind, in varied sites - in the oesophagus, gut, liver, pancreas, trachea, lungs, blood-vessels, kidneys, reproductive tract, under the skin, even under the eyelids. Their commonest choice is the gut, where most reside fairly harmlessly.

These flukes usually each have a fairly restricted range of mollusc intermediates and a broader range of final hosts, although given 'training' by artificial or natural selection the mollusc spectrum for any species can probably be widened. There is an important ecological point here, namely that it is bad practice to introduce exotic molluscs to an area: you might trigger a bout of

parasitism which could eliminate some small susceptible animal population before it can adapt. Alternatively you may be supplying a better intermediate for an existing parasite producing a deluge of snail-infective material which could hit a local snail population hard: for flukes are not only harmful in the adult stages but young instars weaken, sterilise or kill molluscs in which they live and multiply a hundred-fold and more.

As might be expected in a big group of parasites there are many subtle ploys imposed on the general life history pattern. For instance the second intermediate host may be optional, depending on the season (Gymnophallus may only use Cardium in winter or pass on to Nereis when it is warmer); the parasite in the secondary host may enter its reproductive organs and appear in its young (Apatemon in guppies); the stages emerging from the snail may mimic mosquito larvae and be gobbled up by fish en route to their final host in a bird (some species of Echinochasmus).

The cestodes (tapeworms) virtually all require intermediate hosts as well but only rarely are these molluscs, then usually a slug, which when eaten carries the parasite back into a bird's intestine to start a new generation. Most nematodes (roundworms) have direct life-cycles. If they do have an intermediate host it is oftener an arthropod than a mollusc. However molluscs are used by some strongyles of grazing animals and small omnivores: these eat the snails together with the young worms which have developed to the infective stage inside them. The best example is a group of lungworms typical of the smaller ruminants grazing limestone pastures. By contrast with the flukes we tend to find a nematode uses a wide spectrum of terrestrial molluscan intermediates but has a restricted final host range.

A list of molluscan genera with associated worm parasites

The parasitic genera with the tongue-twisting start - Skrjabin.... are named after the brother of the composer who was the leading parasitologist in the USSR. I dare say some of the nomenclature below is outdated but that is of little importance. It is the life-patterns which are to be discerned. Where the second intermediate host appears in brackets it may be optional, or uncertain.

Key: C = Cestode (tapeworm): N = Nematode (roundworm): T = Trematode (fluke)

<u>Mollusc</u>	<u>Second Host</u>	<u>Parasite</u>	<u>Final Host</u>
<u>Abida</u>	-	<u>Cystocaulus</u> etc.	N Sheep (lungs)
<u>Abra</u>	Rockling fish	<u>Bucephaloides</u>	T Angler-fish
<u>Abra</u>	Polychaete	<u>Gymnophallus</u>	T Birds
<u>Abra</u>	<u>Cardium/Abra</u>	<u>Paratimonia</u>	T Fish (Goby)
<u>Abra</u>	<u>Cardium/Abra</u>	<u>Parvatrema</u>	T Birds
<u>Achatina</u>	-	<u>Anafilaroides</u>	N Cats (lungs)
<u>Achatina</u>	-	<u>Angiostrongylus</u>	N Rats (blood)
<u>Acusta</u>	Grasshoppers	<u>Eurytrema</u>	T Herbivores
<u>Agriolimax</u>	(mice)	<u>Aelurostrongylus</u>	N Cats (lungs)
<u>Agriolimax</u>	Mollusc	<u>Brachylaemus</u>	T Possum/Armadillo
<u>Agriolimax</u>	-	<u>Crenosoma</u>	N Fox (lungs)
<u>Agriolimax</u>	-	<u>Davainea</u>	C Poultry
<u>Agriolimax</u>	-	<u>Elaphostrongylus</u>	N Deer
<u>Agriolimax</u>	(mice)	<u>Filaroides</u>	N Polecat/Mink
<u>Agriolimax</u>	-	<u>Skrjabinigylus</u>	N Mustelids
<u>Alcolimma</u>	Dragonflies	<u>Prosthogonimus</u>	T Poultry

<u>Allogona</u>	Ants	<u>Brachylecithum</u>	T Birds
<u>Allogona</u>	-	<u>Liga</u>	C Shrews
<u>Ameria</u>	-	<u>Cyclocoelum</u>	T Grebes (resp.)
<u>Ameria</u>	Tadpoles	<u>Dolichopera</u>	T Snakes
<u>Amerianna</u>	Fish	<u>Paryphostomum</u>	T Cormorants
<u>Amnicola</u>	Crustaceans	<u>Allocreadium</u>	T Fish
<u>Amnicola</u>	Planarians	<u>Azygia</u>	T Eels
<u>Amnicola</u>	Fish	<u>Cryptocotyle</u>	T Birds
<u>Amnicola</u>	Ostracod +	<u>Genarchopsis</u>	T Fish (stomach)
<u>Amnicola</u>	Fish	<u>Metorchis</u>	T Vertebrates
<u>Amnicola</u>	Asellus	<u>Microphallids</u>	T Birds (Man)
<u>Amnicola</u>	Fish	<u>Opisthorchis</u>	T Mammals
<u>Amnicola</u>	Dragonflies	<u>Prosthogonimus</u>	T Birds (oviduct)
<u>Amnicola</u>	Tadpoles	<u>Ratzia</u>	T Snakes/Tadpoles
<u>Anachis</u>	Coelenterate	<u>Neopechona</u>	T ? Fish
<u>Anquispira</u>	Mollusc	<u>Scaphiostomum</u>	T Chipmunks
<u>Anodonta</u>	Fish (Carp)	<u>Bucephalus</u>	T F-w Fish
<u>Anodonta</u>	-	<u>Phyllodistomum</u>	T F-w Fish (urin.)
<u>Anodonta</u>	Lampsilis	<u>Ptyalincola</u>	T Muskrats
<u>Anodonta</u>	Fish (Bream)	<u>Rhipidocotyle</u>	T Fish (Perch)
<u>Arianta</u>	-	<u>Crenosoma</u>	N Canids (lungs)
<u>Arianta</u>	-	<u>Elaphostrongylus</u>	N Reindeer
<u>Arion, etc.</u>	-	<u>Aelurostrongylus</u>	N Cats
<u>Arion</u>	-	<u>Angiostrongylus</u>	N Dogs, etc.
<u>Arion</u>	-	<u>Anomotaenia</u>	C Shrews
<u>Arion</u>	-	<u>Choanotaenia</u>	C Shrews/Mice
<u>Arion</u>	-	<u>Crenosoma</u>	N Hedgehog/Canids
<u>Arion</u>	-	<u>Davainea</u>	C Poultry
<u>Assimineae</u>	(crustac.?)	<u>Paragonimus</u>	T Vertebrates
<u>Batillaria</u>	-	<u>Ornithobilharzia</u>	T Birds
<u>Batillaria</u>	- ?	<u>Philophthalmus</u>	T Water birds
<u>Bembicium</u>	-	<u>Parorchis</u>	T Gulls
<u>Biomphalaria</u>	Fish (guppy)	<u>Apatemon</u>	T Ducks
<u>Biomphalaria</u>	?	<u>Cotylurus</u>	T Birds
<u>Biomphalaria</u>	Tilapia fish	<u>Diplostomum</u>	T Cormorants
<u>Biomphalaria</u>	-	<u>Echinoparyphium</u>	T Birds
<u>Biomphalaria</u>	-	<u>Echinostoma</u>	T Man/animals
<u>Biomphalaria</u>	-	<u>Paramphistomum</u>	T Cattle
<u>Biomphalaria</u>	Fish/frog	<u>Paryphostomum</u>	T Vultures
<u>Biomphalaria</u>	Tilapia fish	<u>Petasiger</u>	T Birds
<u>Biomphalaria</u>	-	<u>Progonimodiscus</u>	T Xenopus
<u>Biomphalaria</u>	Tilapia fish	<u>Ribeirola</u>	T Rodents
<u>Biomphalaria</u>	-	<u>Schistosoma</u>	T Rodents/Man
<u>Biomphalaria</u>	-	<u>Typhlocoelum</u>	T Ducks
<u>Bithynella</u>	Stoneflies	<u>Cephalouterina</u>	T Frogs
<u>Bithynella</u>	Frog	<u>Euryhelms</u>	T Rodents
<u>Bithynella</u>	Stoneflies	<u>Pseudocephalotrema</u>	T Rodents
<u>Bithynella</u>	Caddis, etc.	<u>Skrjabinophyetus</u>	T Shrews
<u>Bithynia</u>	Frogs	<u>Astiotrema</u>	T Snakes
<u>Bithynia</u>	-	<u>Asymphyllodora</u>	T Fish (gut)
<u>Bithynia</u>	Fish	<u>Clonorchis</u>	T Man (liver)
<u>Bithynia</u>	-	<u>Cyathocotyle</u>	T Birds
<u>Bithynia</u>	Fish brain	<u>Diplostomulum</u>	T Ducks
<u>Bithynia</u>	Fish fry	<u>Echinochasmus</u>	T Herons/Grebes
<u>Bithynia</u>	F-w snail	<u>Echinoparyphium</u>	T Mammals
<u>Bithynia</u>	Amphib/Fish	<u>Holostephanus</u>	T Birds

<u>Bithynia</u>	Fish	<u>Metorchis</u>	T Vertebrates
<u>Bithynia</u>	-	<u>Multicotyle</u>	T Turtles (gut)
<u>Bithynia</u>	Tubifex/Leech	<u>Nephrotrema</u>	T Rodent (kidney)
<u>Bithynia</u>	-	<u>Notocotylus</u>	T Ducks/Geese
<u>Bithynia</u>	Fish	<u>Opisthorchis</u>	T Man/Cat/Vole
<u>Bithynia</u>	Snail (Lymn.)	<u>Parasymphylodora</u>	T Fish (Chub)
<u>Bithynia</u>	Dragonflies	<u>Phaneropsolus</u>	T Monkey, (man)
<u>Bithynia</u>	Dragonflies	<u>Plagiorchis</u>	T Birds
<u>Bithynia</u>	Mayflies	<u>Pleurogenes</u>	T Frogs
<u>Bithynia</u>	Dragonflies	<u>Pleurogenoides</u>	T Chamaeleons
<u>Bithynia</u>	Dragonflies	<u>Prosthodendrium</u>	T Rodents
<u>Bithynia</u>	Dragonflies	<u>Prosthogonimus</u>	T Poultry
<u>Bithynia</u>	Dragonflies	<u>Prostocus</u>	T Birds
<u>Bithynia</u>	<u>Lymnaea</u> , etc.	<u>Psilochasmus</u>	T Ducks
<u>Bithynia</u>	(on veg.)	<u>Psilotrema</u>	T Swans
<u>Bithynia</u>	(<u>Bithynia</u>)	<u>Sphaeridotrema</u>	T Birds
<u>Bithynia</u>	Leech/snail	<u>Sphaerostoma</u>	T Fish
<u>Bittium</u>	Nereis	<u>Deropristis</u>	T Eels
<u>Bittium</u>	Crabs	<u>Microphallus</u>	T Gulls
<u>Bittium</u>	Fish fry	<u>Siphodera</u>	T Fish
<u>Bradybaena</u>	-	<u>Bicaulus</u>	N Deer
<u>Bradybaena</u>	Ants	<u>Dicrocoelium</u>	T Herbivores
<u>Bradybaena</u>	Ants/Orthopt.	<u>Eurytrema</u>	T Ruminants, etc.
<u>Bradybaena</u>	(insects ?)	<u>Microphallus</u>	T Insectiv./Rodt.
<u>Bradybaena</u>	Land snail/or	<u>Postharmostomum</u>	T Galliform birds
<u>Brotia</u>	F-w crabs	<u>Paragonimus</u>	T Man
<u>Buccinum</u>	Crustacea	<u>Podocotyle</u>	T Fish (Cod)
<u>Buccinum</u>	(Plaice)	<u>Stephanostomum</u>	T Fish-eater ?
<u>Buccinum</u>	Starfish, etc.	<u>Zoogonoides</u>	T Flatfish
<u>Bulinus</u>	-	<u>Bilharziella</u>	T Water birds
<u>Bulinus</u>	Fish	<u>Bolbophorus</u>	T Herons
<u>Bulinus</u>	-	<u>Ceylonocotyle</u>	T Ruminants (gut)
<u>Bulinus</u>	-	<u>Diplodiscus</u>	T Toads
<u>Bulinus</u>	Tadpoles/fish	<u>Echinochasmus</u>	T Pisciv. birds
<u>Bulinus</u>	Tilapia fish	<u>Euclinostomum</u>	T Herons (mouth)
<u>Bulinus</u>	-	<u>Gastrodiscus</u>	T Equines (gut)
<u>Bulinus</u>	-	<u>Paramphistomum</u>	T Ruminants
<u>Bulinus</u>	F-w shrimps	<u>Pleurogenes</u>	T Frogs
<u>Bulinus</u>	-	<u>Schistosoma</u>	T Ruminants
<u>Cardium</u>	Gobies	<u>Bucephalus</u>	T Bass
<u>Cardium</u>	(Annelid)	<u>Gymnophallus</u>	T Shore birds
<u>Cathaica</u>	Ants	<u>Dicrocoelium</u>	T Herbivores
<u>Cathaica</u>	Grasshoppers	<u>Eurytrema</u>	T Ruminants
<u>Cepaea</u>	-	<u>Capreocaulus</u>	N Goats (lungs)
<u>Cepaea</u>	-	<u>Crenosoma</u>	N Canids (lungs)
<u>Cepaea</u>	-	<u>Cystocaulus</u>	N Sheep/goat
<u>Cepaea</u>	-	<u>Muellerius</u>	N Sheep (lungs)
<u>Cepaea</u>	-	<u>Neostongylus</u>	N Sheep (lungs)
<u>Cerithidea</u>	-	<u>Catatropis</u>	T Rice-rat
<u>Cerithidea</u>	-	<u>Cloacitrema</u>	T Gull
<u>Cerithidea</u>	-	<u>Himasthla</u>	T Birds
<u>Cerithidea</u>	Fish	<u>Parastictodora</u>	T Pisciv. birds
<u>Cerithium</u>	Fish	<u>Galactosomum</u>	T Gulls
<u>Cerithium</u>	-	<u>Haplospilanchnus</u>	T Fish (herbiv.)
<u>Cerithium</u>	Sandhoppers	<u>Maritrema</u>	T Shore birds
<u>Cerithium</u>	Sand Smelt	<u>Renicola</u>	T Gulls (kidney)

<u>Cernuella</u>	Ants	<u>Dicrocoelium</u>	T Herbivore
<u>Cernuella</u>	-	<u>Muellerius + Neostr.</u>	N Sheep (lungs)
<u>Chondrula</u>	-	<u>Cystocaulus</u>	N Sheep/goat
<u>Chondrula</u>	Ants	<u>Dicrocoelium</u>	T Herbivores
<u>Cincinnatia</u>	Sunfish	<u>Caecicola</u>	T Fish (Bass)
<u>Cionella</u>	(insect)	<u>Brachythecium</u>	T Galliform birds
<u>Cionella</u>	Ants	<u>Dicrocoelium</u>	T Herbivores (liv)
<u>Cionella</u>	-	<u>Urogonimus</u>	T Birds
<u>Cleopatra</u>	Tilapia fish	<u>Haplorchoides</u>	T Fish
<u>Cochlicella</u>	-	<u>Brachylaema</u>	T Birds
<u>Cochlicella</u>	-	<u>Cystocaulus</u>	N Sheep/goat
<u>Cochlicella</u>	Ants	<u>Dicrocoelium</u>	T Herbivores
<u>Cochlicopa</u>	-	<u>Skrjabinogylus</u>	N Mustelids
<u>Columbella</u>	Nereis	<u>Zoogonoides</u>	T Fish
<u>Cominella (Whelk)</u>	Cockle	<u>Curtuteria</u>	T Oystercatcher
<u>Corbicula</u>	-	<u>Echinoparyphium</u>	T Man
<u>Corbiculina</u>	-	<u>Burnellus</u>	T Catfish
<u>Cumingia</u>	Mollusc	<u>Monorchoides</u>	T Fish
<u>Cyclostoma</u>	-	<u>Brachylaemus</u>	T Mice (Birds)
<u>Deroceras</u>	(fish)	<u>Aelurostrongylus</u>	N Mink
<u>Deroceras</u>	(insects)	<u>[REDACTED]</u>	T Galliform birds
<u>Deroceras</u>	-	<u>Davainea</u>	C Poultry
<u>Deroceras</u>	-	<u>Pneumostrongylus</u>	N Deer (lungs)
<u>Detracia</u>	-	<u>Ophthalmophagus</u>	T Rails (orbit)
<u>Discus</u>	-	<u>Pneumostrongylus</u>	N Deer (brain)
<u>Discus</u>	-	<u>Trilobostrogylus</u>	N Marten (lung)
<u>Dreissena</u>	-	<u>Phyllodistomum</u>	T F-w fish (urin.)

This basic inexhaustive list could obviously go on to Z. It is also capable of embellishment with the more intriguing facets of individual life-styles. If such a production would interest anyone please let me know and indicate if the above format suits your requirements or could be improved. Would you want a section covering species with non-molluscan intermediate hosts as well? To bring the information down to species level would be too cumbersome and not very meaningful - such data would only be of "what's hit is history, what's missed is mystery" quality.

My address is P. A. Kingsbury, [REDACTED], Wentnor, Shropshire, [REDACTED]

A SECOND RECORD OF LEPTOCHITON SCABRIDUS (JEFFREYS, 1880) FROM IRELAND

In April 1990 I received from Dr. J. Nunn (Belfast) a parcel of chitons which she collected in British and Irish waters. One lot of this shipment contained a small (3.8 x 2.6 mm), yellow Leptochiton species, which was identified by Dr. S. Smith as Leptochiton cancellatus (Sowerby, 1840). This specimen was collected in Lettermore, Lettermore Island, Connemara, County Galway, Ireland on 4.10.1986. A brief study of this specimen gave me the impression that it should rather be identified as Leptochiton scabridus (Jeffreys, 1880). Positive identification was hindered by a thick brown deposit on the valves which concealed its specific tegmental sculpture. It was only after disarticulation, cleaning of the valves and study of the radula, that I

came to a positive identification of the specimen, which indeed proved to be a specimen of L. scabridus.

This is thus the second record for the species in Ireland. The first record was recently made in the communication by J. M. Light and J. M. Baxter (Journal of Conchology 33(5): 318-319). Their L. scabridus material originated from Broad Water, County Donegal.

For a long time L. scabridus was regarded as one of the few endemic British molluscs and although Light and Baxter mention Brittany as an extension of this limited distribution range, recent records indicate a much larger distribution. I have for instance in my private collection specimens from Guetaria, northern Spain, and from Antignano, Livorno, Italy. I also collected the species in Rafina and Thirassia, Greece (see Strack, Apex 3(4): 76, map 3) and the species is even known from the Canary Islands and Angola (see Kaas & Van Belle, Monograph of living chitons III: 12)! The Irish records, and in particular the Donegal one, prove that not only its southern distribution range has to be reconsidered but also its northernmost range. In view of these latest facts L. scabridus is most likely to occur in several other localities along the western coasts of England and Wales and the east coast of Ireland.

L. scabridus is a scarce, small and inconspicuous species with specific habitat preferences and is therefore easily overlooked. Furthermore chitons still remain a somewhat neglected molluscan group. The very few records that are known of this species are a result of this situation. Further fieldwork is needed to ascertain the real distribution of L. scabridus in the United Kingdom and Ireland.

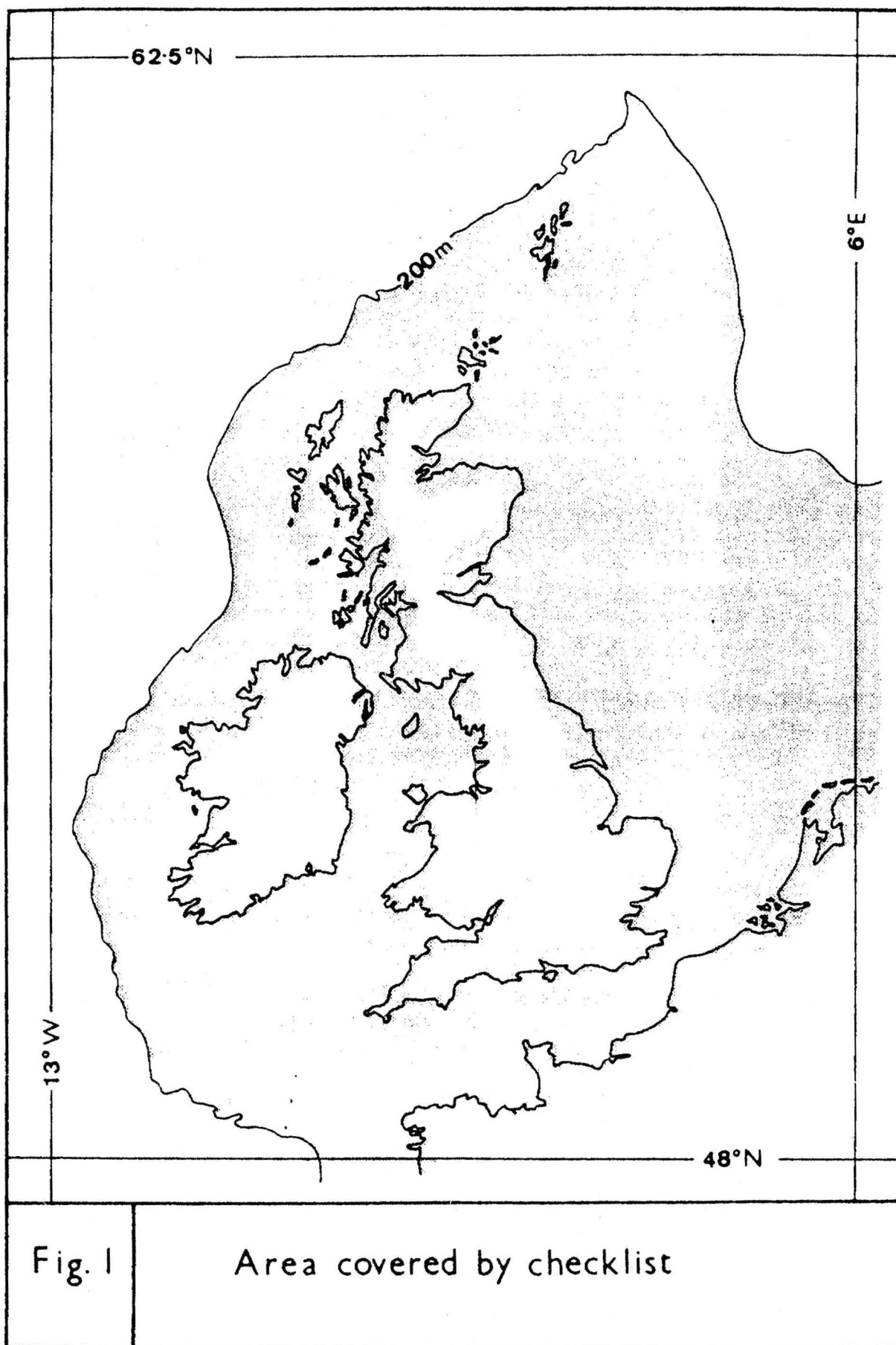
Hermann L. Strack, [REDACTED], 3039 SL Rotterdam, The Netherlands

DIRECTORY OF THE BRITISH MARINE FAUNA AND FLORA

"The Species Directory" was first published, in 1987, by the Marine Conservation Society, supported by British Petroleum and the World Wildlife Fund. The directory is a computer-based checklist of the marine fauna and flora of the British Isles and its surrounding seas (see map), and currently comprises 24 major taxa. It has been edited by Christine Howson and has drawn together a wide body of expertise with substantial contributions from over twenty taxonomists.

The Directory is an up-to-date taxonomic checklist, listing scientific names and authorities with taxonomic or distribution comments where relevant. A restricted synonymy has been given in some cases, in particular where the nomenclature in standard identification works is out of date. Each section consists of a short introduction setting the phylum in taxonomic context, a classification table to serve as a brief taxonomic index to the group, the annotated list and a bibliography. An overall introduction gives the background and rationale of the project, and the entire checklist - over 12,100 entries - is included in one alphabetic index.

The need for such a reference list had been seen for some time, particularly with the current proliferation of computer data bases. The Species Directory, therefore, brings together into one volume the various disparate lists of British



marine species, incorporating recent literature, taxonomic revisions and records from individuals. It aims to standardise the nomenclature as far as possible.

A taxonomic list will never be entirely up to date, by the very nature of the subject. This means that the present version must be considered provisional. An initial 120 copies were produced, half of which were distributed to those who had contributed. The remaining copies were made available through the Marine Conservation Society at £25.00 each. These were all quickly snapped up, and this version is no longer available. A major revision is presently underway in consultation with taxonomists and other users of the present version. In this revised edition it is hoped to incorporate additional phyla and to rectify errors which have come to light since the original publication. The new version is due for publication in 1992, and will be widely available in two versions: (1) the annotated printed list, and (2) the computer coded version on 3.5 and 5.25 inch floppy discs.

Request for assistance

1. Realising that the field of taxonomy and synonymy is in a state of continual change, I hope to ensure, nevertheless, that the revised "Species Directory" will be as up to date as possible. However, it is simply not possible for me on my own to keep track of all the taxonomic literature across so many fields. I would, therefore, be very grateful for help, such as letting me know of taxonomic revisions, new records, new species in your field, either by sending actual reprints or references enabling me to trace the publication. In addition, any recommendations from users on how the present directory might be improved or made more useful would be much appreciated. All help will be fully acknowledged.

2. If there is anyone out there who would like to contribute to the project by compiling, checking or commenting on particular lists, especially ones not yet included, please contact me as soon as possible:

Brendan Ball, Department of Botany and Zoology, Ulster Museum, Botanic Gardens, Belfast, BT9 5AB, Northern Ireland.

FIELD MEETING IN GLOUCESTERSHIRE, 23 MARCH 1991: RECORDING IN THE COTSWOLD

COMMONS AND BEECHWOODS NATIONAL NATURE RESERVE

Sixteen members, family, and friends attended on this bright, if sometimes cool, day. Along with regulars like Beryl and Derek Rands and Judith Nelson, it was good to see people who rarely get to London or field meetings - Paul Warriss and family from Bristol, Mr. and Mrs. Michael Weideli from Newbury, Tony Smith and Len Cramm from Somerset, Peter and Kathy Tattersfield now living in Derbyshire and Keith Alexander; Francis de Bartolome was able to make his first Society field meeting ever!

Pope's Wood appears from a distance to be predominantly an escarpment Beech wood, but there is also a wide variety of other deciduous trees, including Ash and Sycamore. It has been known to have a rich mollusc fauna since 1967, so this part of the day was intended partly to establish that the species of interest were still present and partly to familiarise newcomers to such species as

Macrogastra rolphii and Phenacolimax major. Fortunately, the wood and conditions behaved themselves and we were able quickly to locate both these species which appeared to be fairly generally distributed within the wood. The other 34 species recorded included Ena montana, E. obscura, Helicigona lapicida and Pomatias elegans, but not Acicula fusca (probably present somewhere on site) or any Vertiginids. At least part of the Vitrina pellucida population was still living so it was possible to compare it with P. major. Among the slugs, large specimens of Arion sylvaticus, with very white sides contrasting with the grey back, were conspicuous.

Saltridge Common Wood is on a steep west-facing slope about 2Km SE of Pope's Wood. Again, much of the tall timber here is Beech but Yew and Holly are much more conspicuous in the under-storey than in Pope's Wood. As at Pope's Wood we recorded 36 species but here the distribution appeared to be less even. Some species - Zenobiella subrufescens, Acicula fusca and Columella edentula were only found in an area which was damp and dominated by Ash and descended to a wet seep with dead Succinea putris in the soil. Phenacolimax major was again present, along with Ena montana, but we did not record Macrogastra rolphii here.

With many thanks to all attendees for their help in the recording, and to John Workman OBE and the Nature Conservancy Council (English Nature) for permission to record in these interesting woods. A full list of the species recorded has been provided to John Workman, NCC, and the Society's Non-Marine Recorder, Dr. Michael Kerney.

David Long

REPORT ON THE FIELD MEETING TO WHITECLIFF BAY - ISLE OF WIGHT

13th. APRIL 1991

Only a week after this meeting took place, the Monopolies Commission were looking into the cost of travel to the Island. However, the cost did not deter twelve members, family and friends joining the leaders at Ryde for onward transportation to Whitecliff Bay on the south-east side of the Island. Although the weather forecasters had been pessimistic during the preceding week, the day turned out to be dry and sunny and, out of the brisk north-east wind, warm. High pressure was going to make a potentially low tide even lower.

Once on the beach, with the tide still high, the party walked to the southern end of the bay to the Cretaceous/Tertiary boundary. The morning was then spent walking slowly northwards examining the Tertiary succession as we went. A number of beds are highly fossiliferous but the specimens are very fragile and special techniques are necessary for preservation. More robust specimens were collected from fragments of septarian nodules concentrated at the top of the beach. The prime interest, however, was the opportunity to view the Tertiary Stratigraphy laid out so clearly along the cliffs of the bay. In this sense it compares very favourably with the Jurassic of the Dorset coast. Talking of which, the meeting persuaded one long-standing Jurassicophile to consider the merit of spending some time on the Tertiary!

For those looking to visit the Isle of Wight with Geology in mind, the

Geologists' Association Guide No. 25 and British Regional Geology - The Hampshire Basin - are a must.

After a leisurely lunch on the beach and a little more geology, the tide had receded sufficiently to start concentrating on modern marine. The party retraced its steps back to the southern end of the beach under the high chalk cliffs of Culver Down. Having arrived, there was impatience to see one of the main attractions of the day Otina ovata in its lair. So a somewhat precarious journey was made 2/300 yards further south-west to a cave where, much to the relief of the leaders, the beast was duly found alive and in situ.

The tide was then followed down across a typical wave-cut chalk platform to a point where one was truly looking at the sea floor. Although no new finds were made, there was plenty of interest, particularly under carefully lifted boulders. (Carefully in the sense of the lifter's health and the need to return the boulder to its original position to protect the animals underneath). Live Turbonilla lactea, large and beautifully rayed Patina pellucida on the laminaria fronds. A large - four inch - Aeolidia papillosa and a number of the smaller Elysia viridis, Juvenile Venerupis pullastra at the stage of attachment. Large Nucella lapillus (not found much nearer to the Solent because of pollution). Gibbula cineraria was found but nothing to confirm presence of G. umbilicalis. Rissoa parva var interrupta was very common. On the non-molluscan front there were crabs - fish - worms - sea anemones and much else of interest. It was with some reluctance that we all tore ourselves away from the beach to meet the strictures of the timetable home.

A first class day in every respect. My thanks on behalf of all present to Jan and Ian for an impeccably organised and led day.

Bill Pocock (May 1991)

ECCENTRIC COLLECTORS : THE BRITISH NATURAL HISTORY TRADITION

Throughout Britain there are many local and national natural history societies. This exhibition, toured by the Area Museums Service for South East England, traces the development of natural history study from Aristotle in classical Greece through Pliny, the herbalists, John Ray, Francis Willughby, Carl Linnaeus, Gilbert White of Selborne, Charles Darwin and into the present century with H. F. L. Guernonprez and F. W. Frohawk. It also introduces the world of the Victorian collector with specimen displays of fossils, seaweeds, ferns, shells, butterflies and birds and follows the development of field clubs, natural history and specialist societies. There are likely to be items relating to the Conchological Society.

The exhibition outlines natural history this century, the role of wildlife photography, radio and television, publication of popular field guides and work of the county naturalists' trusts and other bodies active in conservation. At each venue the local natural history societies will be invited to participate and display details of activities for naturalists available locally. At some venues there will be an illustrated lecture.

Venues and dates:

1 - 8 September at Bedford Museum; 14 September - 13 October at Letchworth Museum and Art Gallery, Herts.; 19 October - 17 November at King's Lynn Museum, Norfolk; 23 November - 26 January 1992 at Bexley Museum, Kent; in 1992 1 February - 1 March at Tunbridge Wells Museum and Art Gallery, Kent; 7 March - 5 April at Ipswich Museum, Suffolk; 11 April - 10 May at Horniman Museum and Library, London; 16 May - 14 June at Maidstone Museum, Kent; 20 June - 19 July at Dover Museum, Kent; 25 July - 10 January 1993 touring in Hampshire with the Hampshire County Museums Service.

June Chatfield

AN ARCHIVE OF PHOTOGRAPHS OF EAST AFRICAN NON-MARINE MOLLUSCA

When I knew I was going to leave East Africa in mid-1964 I began to photograph the larger members of the collection of land and fresh-water snails I had built up in the then Coryndon Memorial Museum, now the National Museum of Kenya. This was done with a whole plate camera equipped with a massive lens capable of stopping down beyond f 32. Since the camera was mounted vertically on rails long exposures rendered necessary by such small stops were no inconvenience. The resulting negatives are on glass plates mostly of quarter plate size or somewhat smaller. This method was not suitable for shells much under 8 mm. long and I did not have time to set up microscopes to take individual small shells. Prints of all these negatives were produced and mounted together with drawings and photographs from other sources, to produce an album of some use for identification when away from specimens for comparison, provided that one knows something of the classification beforehand. A microfilm of this album was produced primarily for those workers trying to identify Miocene fossils. Several copies were made and distributed. The original glass negatives, which could be of great value to any future worker producing a book on East African snails, have been deposited in the Art Gallery and Museum, Kelvingrove, Glasgow. My original intention of placing them in the National Museum of Kenya was rescinded when they could not even find the hundreds of fossil specimens I worked on for Dr. L. Leahey in the early 1960's.

Bernard Verdcourt

REVIEW

Letts Pocket Guide to SEASHELLS by Eleanor Lawrence and Sue Harniess, published by Charles Letts & Co. Ltd., 1991, ISBN 1 85238 114 0, price £3.50.

This book is described by the publishers as "an ideal compact identification guide to the most common shells found on the shores of Europe...." It describes and illustrates some 105 species with smaller figures and notes on a further 66. A short introductory section explains the page layout and how to use the book for identification. A short glossary of molluscan terms is included.

The order in which species occur in the book is novel. On a preliminary look through I searched in vain for the rationale behind the order until I learned from the introduction that size was the criterion. This means that in the gastropod section the first species is Lacuna vincta at 8mm and the last is Charonia rubicunda at 250mm. Although there may have been some logic in the minds of the authors, this order results in the segregation of ubiquitous species such as top shells and winkles. Another disadvantage of a size order is that it does not take juveniles into account.

Many of the illustrations by Sue Harniess are realistic representations of the species they depict, but a small proportion are rather too fanciful. The quality of illustrations in such a book is important since it is the picture that a beginner will use as a guide to naming shells. Even taking into account very recent upheavals in the nomenclature of North-East Atlantic molluscs, some of the names are very out-of-date (when did we last refer to Paludestrina jenkinsi?) and prominence is given to the common names with the Latin appearing in very small print beside.

A map of Europe is inset on each species page with an indication of distribution. Again this information is not always accurate and generally the choice of species favours south European interests.

On the plus side the authors deserve a star for giving a balanced coverage of most molluscan groups to include a scaphopod, a cephalopod and three chitons as well as an equal proportion of bivalves and gastropods. However, I award a lollipop for including two barnacles - even though the authors indicate in their introduction that the latter are not molluscs. There is also a transposition of figure and title such that barnacles are illustrated with an outline of a nautiloid and vice versa.

Eleanor Lawrence is a freelance writer and editor of natural history books. She is not a member of any of the British molluscan societies and perhaps this is partly why she has not included details of relevant societies nor a Reading List but both would have enhanced the use of this book to the beginner.

In recent years a number of pocket guides on shells have appeared in the bookshops. Such books may well help beginners with some of their identifications. In practice, however, I feel the function of these guides is to catch and kindle a potential conchologist's interest and its attractive presentation and competitive price should ensure its sale.

Jan Light

SNAIL EXPERIENCES

During September 1990, I was requested by some Italian restaurateur friends of mine to lend a hand with the pulverisation of 50 crates of grapes, this being the initial stage of the family's annual wine-producing exercise for their personal consumption. I assisted with this operation during the afternoon of Friday 28 September, unfortunately overlooking the fact that I had a booked appointment at a large hospital at the time!

Pulping was effected by an electrically-driven machine, and as each crate was tipped into its hopper, there ensued a frantic effort by the restaurant's chef and yours truly to extract "foreign" material before it was swallowed up by a wormscrew at the bottom of the hopper. During the processing of black grapes, which had come from Spain, I noticed and rescued four snails (3 adults and one juvenile), although at least 3 more were less fortunate in that they landed too near to the screw and thus could not be extracted in time.

Though not efficient to species identification, I did become familiar with most of the better-known British resident snails during the mid 1960's, at which time I had some interest in them, albeit limited and underdeveloped, and I immediately realised that the snails from the grapes were not of British origin. I decided to take them home, and seek to identify them. Failing to gain enlightenment from any book in my possession, I decided to photograph them and forward prints to the appropriate department at the Natural History Museum, Kensington. This, of course, is a lazy way to acquire information, and I was in any event thwarted by the fact that I had previously been persuaded to loan my camera to the restaurant's young Portuguese waitress, who had subsequently taken it with her on a holiday in her birthplace. When it was finally returned, I discovered that it had been damaged and was quite useless; repairs occupied a further couple of weeks.

During this considerable lapse of time, the snails had laid eggs, which had hatched; they had later mated and laid further eggs and these too had developed to a state of mobility. I had been quite unprepared for this, and housing was crude and improvised in the extreme. A bread bin, a builders' bucket, and a cylindrical sewing box were employed at differing stages, but not even the least of the standards laid down for terraria were met by any! However, being fed on a very wide variety of vegetation, the young snails grew very quickly, and it seemed, ironically, that the only fruits and leaves they declined were grapes and vine respectively.

During this period, the adults were photographed and subsequently identified by Mr. Fred Naggs, who also supplied further information, not least on my stated intention as to the disposal of the offspring, by now around 200 in number, which had betrayed my total ignorance of the content of the 1981 Wildlife and Countryside Act!

I went on to obtain a couple of plant propagators in which to house the brood; though perhaps lacking in ventilation, they were nearer to the ideals than any previous item I had employed. The trays were filled with proprietary potting compost, mixed with chalk which I collected from a site near the railway station at Woldingham, Surrey; I had been introduced to the attributes of the area during the 1960's by a cousin who resided in Caterham. I also collected a couple of pieces of moss-covered rotten wood with which I furnished the new abodes, only to later discover I had inadvertently introduced a selection of other invertebrates, such as a couple of millipedes, a few woodlice of a species not found in my own locality, and a Discus rotundatus. Even now, I wonder how one can avoid adding unsought species when using soil, etc., from a "wild" site, particularly since some such may, in fact, be harmful to molluscs.

Finally desperate as my brood approached adulthood, lest they too should commence reproduction, I contacted Mrs. Rands for advice, having found her address at the back of Messrs. Kerney and Cameron's "A Field Guide to the Land Snails of Britain and N.W. Europe". In response to a suggestion kindly made, a large number of my Otala lactea were passed to Society Members at the meeting on

April 20, 1991, and indeed I joined the Society myself, whilst resolving to intensively educate myself towards less intolerable future practices!

Though I did lose some of "the brood" during an induced but brief late-winter hibernation, I still have 40 or so varied-stage *O. lactea* in my now rather reluctant care. Perhaps I should introduce a few *Oxychilus cellarius*?!

L. J. Blaker, 9.6.91

CONCHOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND

1027th. (Emergency Special General) meeting held on 17th. November 1990 at B.M.(N.H.) starting at 2.47 p.m.

In the chair: Mrs. M. Fogan

Dr. A. D. Seccombe, the Society's Honorary Treasurer, proposed that the CSGBI adopt the following higher annual subscription rates:

Ordinary member	£21
Family member	£23
Institutional member	£30
Student member	£10 (unchanged)

The above rates represent a £5 across the board rise. The subscription is discounted by £1 for those who pay before 31st. March for the year in question.

Dr. Seccombe explained that the Society's finances were basically sound, last year we made a loss of £1400 but this year we expect to break even. A loss is to be expected next year if rates are not raised. The £5 rise recommended would mean breakeven in 1991 and 1992. The alternative cost-saving method of cutting back on publications was considered a bad idea by Council.

Mrs. E. B. Rands, the Acting Honorary Secretary, has looked at the membership figures for the period from 1969-1989. Up to 1982 about 60 new members were joining each year, recruitment declined steadily after 1982 down to about 16 in 1989. The membership total has fallen from 612 in 1978 to 450 in 1989. Mrs. Rands said the situation is very black and we must do all we can to recruit new members.

Dr. Seccombe said that printed publications costs were very sensitive to the size of the print run.

In response to the above presentation by Officers of the Society a number of questions were asked from the floor. Some opinions were also expressed.

Mr. D. Long proposed that the new rates be adopted. Seconded by Mrs. E. Platts. Carried by vote with 2 people voting against.

Meeting closed at 3.30 p.m.

1028th. (Ordinary) meeting held on 17th. November 1990 at B.M.(N.H.)

In the chair: Mrs. M. Fogan with 39 members and friends.

Nominations and election of new members:

Dr. A. Prieur, Université Claude Bernard - Lyon 1, Centres des Sciences de la Terre, Bât 402 - R2, 27/43 Bld. du 11 Novembre, 69622 Villeurbanne Cedex, France. This applicant was elected.

Lecture of the day: Mrs. Helena Ross: "Irish Pearl Mussels - past, present and future".

Announcements and correspondence:

We still need a new Honorary Secretary. Mrs. Rands, the Acting Honorary Secretary, thought that the following extract from the journal of the Sheffield & Hallamshire Motor Club was of relevance:

NOTICE OF RESIGNATION To all Motorcycle Section members, I hereby give notice that I am not prepared to continue to be Secretary to such an apathetic membership. As from 31st. December 1990 I shall be resigning my position. After all you don't care so why should I. Andy Atkinson.

Meeting closed at 5.40 p.m.

Members' exhibits

- | | |
|---------------------------|---|
| Mr. J. E. Llewellyn-Jones | - An exhibition of Mytilidae and Unionidae and their uses. |
| Mr. T. E. Crowley | - Nottinghamshire Naiads. |
| Mr. F. R. Woodward | - Margaritiferidae of the world. |
| Mr. T. Pain | - Some unusual Ethiopian Freshwater Mussels. |
| Mr. D. G. Rands | - Photographs of British land and freshwater snails. |
| Mr. E. O. Bishop | - Catalogue of LOWE collection of Madeiran and Canary Island land shells in the Booth Natural History Museum, Brighton. |
| Dr. J. Chatfield | - Weichtiere - a new mollusc book published in Germany |
| Mr. I. Killeen | - <u>Limax tenellus</u> from Norfolk. |
| Mr. D. C. Long | - (i) Unionidae of Europe.
(ii) 2 Australian papers on Unionids. |

1029th. (Ordinary) meeting held on 15th. December 1990 at B.M.(N.H.)

In the chair: Mrs. M. Fogan with 28 members and friends.

Minutes of the Special General Meeting of 17th. November 1990:

Dr. B. F. Coles reported that Journal costs are now cheaper and that Newsletter costs reduction are dependent on a change of format.

It was proposed that the minutes be accepted (seconded by Dr. B. Colville). This proposal was carried.

Nomination and election to membership:

Mr. A. J. D. Morris, [REDACTED], Redhill, Surrey,
[REDACTED]

This person was elected.

Lecture of the day: Open meeting - members' own slides.

Meeting closed at 4.43 p.m.

Members' exhibits:

- | | |
|-----------------|--|
| Mr. T. Pain | - The genus <u>Clavator</u> Martens, 1860 (Pulmonata-Acavacea) Madagascar, (endemic). |
| Mr. D. C. Long | - Swiss land snails. |
| Dr. R. Honnor | - Sinistral <u>Nucella lapillus</u> from Vatten, Skye. |
| Ms. J. Reynolds | - Various Press items, photos of Oulton Broad field trip, Archachatina and freak <u>Helix aspersa</u> . |
| Miss R. Holt | - Plan for mollusc gallery at Natural History Museum, photos of mating and eggs of Archachatina, photos of temporary exhibit |

- on molluscs at Chelmsford Museum 1988, new Eyewitness book on shelled creatures and newspaper strips of facts on shelled creatures.

1030th. (Ordinary) meeting held on 19th. January 1991 at The Natural History Museum in the Demonstration Room.

In the Chair: Mrs. M. E. Fogan with 42 members and friends present.

Nomination and election of new members: The following new member was nominated and elected:

Mr. B. J. Craig, B.Sc., DIC, M.Sc., [REDACTED], Mottingham, London, [REDACTED].

Lecture of the day: 'The Biology of British Chitons' by Dr. John Baxter.

Meeting closed at 5.22 p.m.

Members' Exhibits

- | | |
|------------------|---|
| Mrs. J. Light | - Marine mollusca of Wight - a provisional Atlas. |
| D. R. Seaward | - Joint Conch. Soc./N.C.C. publications:-
Sea Area Atlas of Marine Molluscs of G.B. & I. 1982
Distribution of Marine Molluscs of N.W. Europe. |
| F. Woodward | - South American snails of the genus <u>Anastomus</u> .
Legislation for <u>Margaritifera</u> . |
| Miss J. Nelson | - Macadamia nuts from Queensland. |
| K. Brown | - Books - Chitons of U.S.S.R.
<u>Chiton cumingsii</u> (Frembly 1827).
Various worldwide Chitons, some for identification. |
| Miss E. Fogan | - Illustrations copied from Thesaurus of Natural History by Albert Seber. |
| Miss J. Reynolds | - 2 recent newspaper articles and snails from nursery coldframe. |
| T. Pain | - Ammonites (<u>Kosmoceras</u>) from Oxford Clay at Christian Melford, Wilts., collected 1840. |
| D. C. Long | - Some Australian publications on Chitons. |
| D. G. Rands | - Photographs of snails and small flowers. |

1031st. (Ordinary) meeting held on the 16th. February 1991 at B.M.(N.H.).

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

Nomination and election of new members:

M. Catt, [REDACTED], Kingsbridge, Devon, [REDACTED]
Mrs. D. G. Cooper [REDACTED], Pewsey, Wiltshire, [REDACTED]
Mrs. A. J. Summers [REDACTED], Fakenham, Norfolk, [REDACTED]

Lecture of the day: Mr. Peter Walker (MAFF, Lowestoft): 'Molluscs and the Ministry'.

Announcements and correspondence: Mr. Long asked people to let him know if they were going on the field meeting of 23rd. March as he is the leader.

Meeting closed at 4.40 p.m.

Members' exhibits

- | | |
|---------------------------|---|
| Mr. D. C. Long | - Books with "Scallop" illustrations. |
| Mr. F. Pinn | - Turbinellidae of India. |
| Mr. Kevin Brown | - <u>Trochus niloticus</u> Linné, 1767, the commercial top and poaching in Australia. |
| Miss S. M. Davies | - Ken Bakeman slugs (wooden ornaments). |
| Ms. J. Reynolds | - Kew Magazine snail article. |
| Mr. J. E. Llewellyn-Jones | - Fossil bivalve <u>Cardinia gigantia</u> from ironstone near Scunthorpe, Lincolnshire. |
| Mr. C. P. Palmer | - Fossil oysters and Pectinaceans. |
| Dr. A. J. Rundle | - Fossil and Recent oysters, and fossil scallops. |
| Mr. T. Pain | - AMPULLARIIDAE, genus <u>Pila</u> Röding, 1798, from Egypt and the Sudan. |

GENERAL NOTES

LANCASHIRE SLUG SURVEY

Mandy North recently completed an MSc degree on slug distribution and foraging behaviour at Manchester University under the supervision of Dr. Bill Bailey. Part of her research involved the organisation of a slug survey which was carried out by school children and members of local conservation groups. The WATCH organisation, the junior section of the Royal Society for Nature Conservation, has expressed an interest in carrying out a similar survey on a national basis, and as an initial trial is organising a survey in the Lancashire WATCH area.

The organisers are hoping to send the survey results to the Natural History Museum as a contribution to the national records for mollusc distribution. Any members of the Conchological Society who live in the Lancashire area who would be willing to offer their expertise to assist with identification should write to Mandy North, [REDACTED], Great Sankey, Warrington, Cheshire, [REDACTED].

JUNE CHATFIELD'S MOLLUSC COURSE

This weekend course on land molluscs held at Juniper Hall Field Centre in a classic and species-rich area of the North Downs at Box Hill in Surrey is running again this year from 27-29 September (Friday evening - Sunday), course fee £77 residents, non-residents £50, a deduction for FSC members. Further details and bookings from: The Warden, Juniper Hall Field Centre, Mickleham, Dorking, Surrey, RH5 6DA.

INTERNATIONAL CONFERENCE ON MOLLUSCAN CONSERVATION

The University of Glasgow will be the venue for an International Conference on Molluscan Conservation on 10 - 12 September 1992. Sessions will include Taxonomy; Distribution; Legislation; Conservation. For further information contact: Fred Woodward, International Conference on Molluscan Conservation, Kelvingrove Museum and Art Gallery, Kelvingrove, Glasgow, G3 8AG, Great Britain. Fax: (041) 357 4537; Telephone: (041) 357 3929.

NEWS RE TESTACELLA SPP.!

John Hillaby in his Journey through Europe (1974) describes on p.129 how in Lorraine he encountered on commonland what he at first took to be innumerable bits of orange peel. Not so; the "orange peel" was hordes of brightly-coloured testacellid slugs washed out of wayside banks by a previous downpour, and where a cart had recently passed they were industriously feeding on what remained of their down-trodden fellows.

(Contributed by) Nora McMillan, Dept. Zoology, Liverpool Museum

THE MANAGEMENT AND WELFARE OF INVERTEBRATES IN CAPTIVITY Edited by N.M.

Collins. National Federation of Zoological Gardens of Great Britain and Ireland, 1990. £6.00 ISBN 0 9515 804 0X. Obtainable from Mr. J. Cooper, Veterinary Health Laboratory, Royal College of Surgeons, Lincoln's Inn Fields, London.

This is the proceedings of a conference initiated in view of the increasing number of invertebrates on display in butterfly houses, aquaria and zoos. Papers cover a range of topics including the ins and outs of running a butterfly house, breeding your own stock, enabling children to handle insects and aquatic invertebrates kept in aquaria. There is an emphasis on captive breeding of stock to avoid exploiting wild populations. Invertebrates are often kept for display and education, but they are also bred in quantity for research and as food for other captive animals, in cases of meal worms, crickets and locusts.

June Chatfield

HILDEGARD ZEISSLER: COLLECTING ADVENTURES I

In Summer 1952 I began my work on the Ehringsdorf Pleistocene at Weimar. This town then had a big Russian garrison, and people told dreadful things of Russian encroachments.

But to understand the fossil fauna I needed the comparison with the living one, and so I had to collect in the surroundings. One place that was known as a good snail habitat was the so-called Ettersberg, a long-stretched hill north of the town, of Triassic limestone. But as there also was a Russian training area, I was told not to go there alone. Now and then Mr. Stark, then entomologist of the Weimar Museum, went with me.

Mr. Stark had not much spare time, and after a time, because there were no news told on Russian activity, I dared to go there alone, of course avoiding the Russian area. Once or twice I succeeded in collecting unharmed, once a policeman sent me away from the surroundings of Buchenwald Monument, as "sabotage" was feared there, and so I began to disbelieve in Russian cruelty.

Again I was there one afternoon, taking a little rest at the northern border of the woodland on the gentle slope of arable land surrounding the village Kleinobringen, a Russian soldier came by. He stopped before me and spoke to me, but I did not understand a word. "Is it forbidden to be here?" I asked, "then I at once will go away", and I went downward in direction to the village, as fields surely were no Russian area. He shouted after me and waved me to come back, but I shook my head and went further, then he ran after me, overtook me, blocked my

way and spoke again - in Russian. I always shook my head, then looked around but there was nobody in the fields to call for. At the end he held out his hand saying: "Sdrwstwuite", a Russian greeting. I gave my hand, saying: "Good bye". But he gripped me with his other hand and did not let me go. I twisted my arms to get rid and then ran towards the village in a hurry. Having reached the first house, I looked back, he still stood there waving me to come back, but I hastened to get away.

Some time later I met the mayor of Kleinobringen and told him that incident. He shook his head and said gravely: "Soviet solders never do any harm". Then he twinkled to me and continued: "But I do not allow my daughters to go alone in the fields".

OUT OF THE SLIME

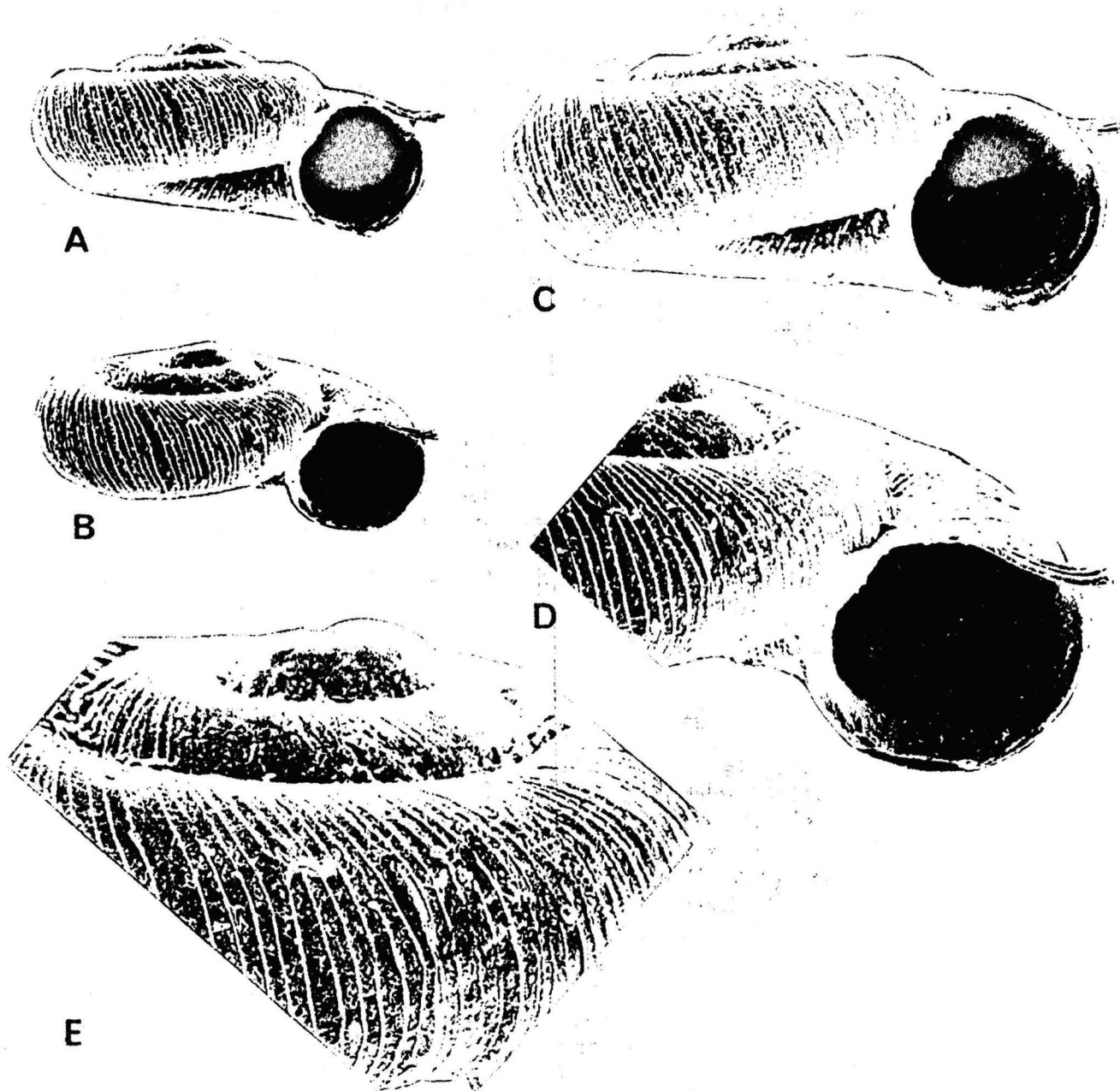
This is the title of an article by our member Elizabeth Platts recently published in the June 1991 issue of BBC Wildlife. With ten colour photographs it gives an introduction to British species of slugs including the author's favourite Kerry Slug, Geomalacus maculosus, and how to keep them in captivity for study. The article sets out to improve the image of slugs from their bad press as universal pests to a group of fascinating and gleaming animals that perform a useful role as decomposers in the environment. It also gives details of this Society and the Malacological Society of London.

Back issues of the magazine are obtainable from BBC Wildlife Subscriptions, P.O. Box 125, Tonbridge, Kent, TN9 1YP. Tel: 0732 366359. Price £2.00.

WE ARE PLEASED TO ANNOUNCE the appearance of the new "Seashell Treasures Books" catalogue. This catalogue (first part only) offers you about 653 titles of antiquarian and new books and 69 series of periodicals on malacology. Later this year the second part of this catalogue will be sent to those interested. For free catalogue, please contact: Dr. W. Backhuys, Seashell Treasures Books, [REDACTED], 2341 KZ Oegstgeest, The Netherlands. Tel: [REDACTED], Fax: 71-171856.

IN MEMORIAM

Mrs. Kathleen R. Smythe, member of the Conchological Society since 1965 and author of several papers on marine molluscs of the Arabian Gulf published in the Journal of Conchology, died in hospital in Chichester on 30 June 1991 after a long period of illness. An obituary is in preparation.



ILLUSTRATIONS OF ELGONOCYCLUS KOPTAWELIENSIS (GERMAIN)

Some years ago I described (Basteria 46: 77-78 [1982]), but did not figure, a new genus of operculates, Elgonocyclus. This was erected for a minute species which Germain had described as an Endodontid!; in fact he had described (and the Paris Museum authorities later figured) two species which proved to be conspecific. Having come across some scanning electron micrographs I had put on one side and forgotten about it seems advisable to publish them. The material was collected in Kenya by Åke Holm on the eastern side of Mt. Elgon at Suam, 2100 m., under his number 346 on 29th. December 1964. Figs. A and B are x 50, C x 75, D x 100 and E x 150.

B. Verdcourt

THE NON-MARINE MAPPING SCHEME: IMPORTANT NOTICE

We are now in sight of a second edition of the Society's non-marine Atlas. The first edition was published in 1976 by the Institute of Terrestrial Ecology. The new, enlarged edition, containing 215 maps and a substantial text, will be published on behalf of the Society by Harley Books of Colchester.

As in 1976, data processing and map production will be done by the Biological Records Centre at Monks Wood, Huntingdon. Although the Atlas will not appear until around March 1993 the closing date for incorporating records will need to be much earlier than this. I should be grateful therefore if all new mapping information is sent to me as soon as possible, and certainly before 1 April 1992. Records should be entered on the standard Conchological Society recording cards, available free to members on request.

Some parts of the British Isles remain poorly covered. These areas lie mainly - though far from exclusively - in Scotland and Ireland. As a guide, I would be happy to send xeroxes of master cards for particular 10km squares as they stand at present (not more than 10 cards at any one time, please). Often it is records of so-called common species which are most needed, rather than of rarities.

M. P. Kerney, c/o. Mollusca Section, British Museum (Natural History), Cromwell Road, London, SW7 5BD

SCILLONIAN MOLLUSCA

It is many years - too many years - since I started to compile a marine Molluscan fauna of the Isles of Scilly, but at long last, in joint-authorship with Dennis Seaward, it is now well on the way. The nomenclature will follow Smith & Heppell, 1991 ('Checklist of British Marine Mollusca'. National Museums of Scotland Information Series No. 11), and will indicate when names differ from those in Seaward, 1990 ('Distribution of the marine molluscs of northwest Europe'. NCC/CSBR&I) and Smith & Howson (Howson, 1987, Editor, 'Species Directory of the British marine Fauna and Flora'. Marine Conservation Society).

Meantime the Cornish Biological Records Unit has produced (jointly with the Isles of Scilly Museum Association) a 'Check-list of Scillonian marine Mollusca', aimed to encourage recording: many species need up-dating and up-grading, and error-spotting would be welcomed! It is 24 pages long A4 format, with covers and spiral binding, and costs £3.00 plus 40p postage and packing. Nomenclature follows Smith & Howson, 1987. The CBRU/ISMA has also produced 'Checklist of Scillonian non-marine Mollusca'. This has 3 pages with covers and spiral binding, and costs £1.50 plus 25p p. & p. Purchasing both costs £5.00, saving a little on p. & p. Copies are available from the Isles of Scilly Museum (Church Street, St. Mary's) or from the Cornish Biological Records Unit (Trevithick Centre, Trevenson Road, Pool, Redruth, Cornwall, TR15 3PL).

Stella Turk

Printed by: D. C. Armsworth, [REDACTED], Baldock, Herts. Tel.: [REDACTED]

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COWRIE MONEY IN CHINA

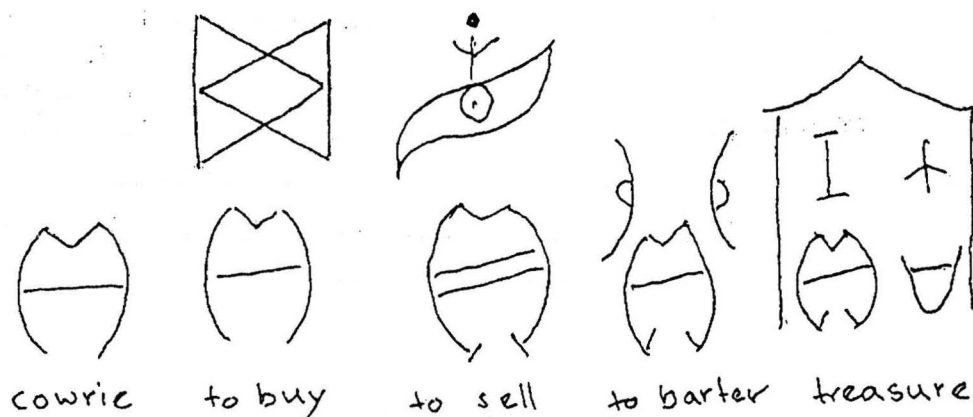
China was probably the first country in the world to elevate the humble cowrie to an object of great value, a precious possession and a universally acceptable means of exchange. It became legal tender in the market place for thousands of years and solved all the problems of the barter system which only worked satisfactorily if both trading partners had what the other one wanted. The shells were easy to handle either loose or in strings and could, in addition, serve as an ornament or a charm; and the larger species had, as every shell collector knows, the further attraction of beautiful patterns and the glossy surface so pleasing to the touch.



-Chinese cowries

ETYMOLOGICAL EVIDENCE

The important part cowries played in the daily life of the people can be gathered from the development of Chinese writing in its earliest stages: the pictographic, and later ideographic sign for "cowrie" (pei) was used in the formation of over a hundred concepts, such as "buying", "selling", "cheap", "dear", "prices", "tribute", "miserly", "hoarding", "rich", "poor", and later "money". For instance, the sign for "precious" or "valuable" (pao), is made up of a roof beneath which are the signs for jade, sacred vessels and cowries - the three most highly valued possessions which make up wealth.



ANTIQUITY OF COWRIE SHELL MONEY

Cowrie shells have been found in Neolithic remains dated to at least 7000 B.C. though their purpose there is not certain. It is sure, however, that by about 2400 B.C. cowries were in general use as a medium of exchange together with tortoise shells for larger payments.

In graves dated before the end of the Shang dynasty (1765 B.C. - 1122 B.C.) large numbers of cowrie shells and large clam utensils were found in a grave pit: a layer of cowries together with bronze objects and stone knives between a layer of tortoise shells and another of clam shells.

An early literary source records that in 1375 B.C. King P'an Keng rebukes his ministers for their greed in hoarding cowries and gems, an indication that these shells at least represented objects of great value.

Archaeological excavations have brought to light oracle bones of the 13th. century B.C. with inscriptions of grants of cowries "one p'eng of cowries", "ten p'eng of cowries", or references to taking or receiving of cowries:

- c. 1281 B.C. "...takes cowries.."
- 1240-1227 B.C. "...takes one hundred cowries"
- "...takes six hundred cowries"
- 1209-1112 B.C. "...takes cowries"
- "...Divined on ting-hai day, Kuang takes two p'eng of cowries in the first month. Took."

More frequently references to cowries are found in inscriptions on Shang bronzes (1765-1122 B.C.):

"On the day Ting-mao the King ordered Tsu-tzu to meet (the chief or representative of) the Kuei State at Hsing. Upon his return the King rewarded him with one p'eng of the cowries which were captured in the expedition against Yung. For this he (Tsu-Tzu) made this tripod in honour of his father I."

It has been pointed out that the reward in cowries to meritorious ministers strongly indicates the great financial value of the shells. Such rewards are particularly conspicuous during the first three hundred years of the Chou dynasty, that is between 1027 B.C. and 750 B.C.:

"In the thirteenth month, on the day Hsin-mao the King was at Han. He

granted Ch'ien a fief called ... He granted him also five p'eng of cowries. In gratitude for the King's favour he (Ch'ien) had this chi precious vessel made."

In fact, large numbers of cowries were dug up from graves of the Chou period (1027-221 B.C.): in one tomb were found 317 cowrie shells, from others 3474 shells were recovered and the bronzes discovered with them were dated between 812 and 589 B.C. The gifts of cowries recorded on bronzes have varied from one to ten p'eng; if one p'eng is worth recording, ten p'eng must have been a very substantial sum indeed.

THE SPECIES OF COWRIES AND HOW THE ANCIENT CHINESE OBTAINED THEM

The two commonest cowrie species in use as money were Cypraea moneta (the "money cowrie") and Cypraea annulus (the "ring cowrie"). But, that other species were also used becomes clear from the grading by the Emperor Wang Mang according to five different sizes, the largest being 110mm long, a size that could only be achieved by Cypraea testudinaria (the "tortoise cowrie"), the largest of the cowrie family.

The shells had their dorsal sides ground flat or a single hole was made large enough to allow stringing them, the common practice in many parts of the world. Whether there was a standard number of shells on each string scholars seem to be unable to determine. The sign for cowrie money which is assumed to represent a necklace appears to show six shells on a string; but this may be just a stylised symbol representing any number, ten for instance, has been suggested.

Cowrie shells were obtained by (1) import, (2) tribute and (3) booty. The money cowrie and the ring cowrie do not live along the China coast and have to be imported from Japanese waters or the areas around Formosa and Hong Kong, or even farther from the Philippines and the Malay Peninsula. The Tizard Banks, the Ryukyus and Hakodate in Japan are the habitats of cowries nearest to China.

Cases of tribute in cowries are recorded over a period of hundreds of years: in 887 B.C. the State of Ch'u (in the Yangtze Valley) sent cowries as tribute to the court of King Li of Chou. Similarly, in 179 B.C. the southern Yueh State (Kuang-tung Province) offered shells for the same purpose.

Some outstanding "scoops" of cowries by way of booty have been recorded and indicate the great value attributed to them.

By 852 B.C. supplies of cowries and tortoise shells became distinctly scarce, and at the end of the 7th. century had become too scarce to satisfy monetary requirements. However, they continued in use together with other means of exchange, such as spade and knife money.

Around 600 B.C. another attempt was made to cope with the shortage of currency and proved so successful that the system was in operation for almost 400 years: bronze coins were minted in the shape and size of the popular cowries called "i pi chien" - "Ant nose money".

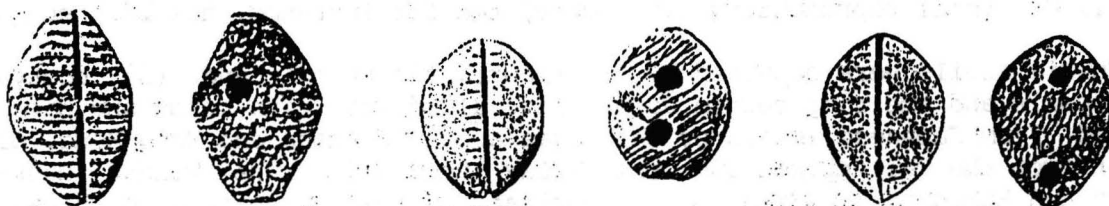
COWRIE IMITATIONS

It has been said that imitation is the sincerest form of flattery. This certainly goes for the cowrie. Its popularity either as an object of monetary value or because of its ornamental and magical properties is easily demonstrated by a list of materials in which the cowrie has been copied; cowrie imitations

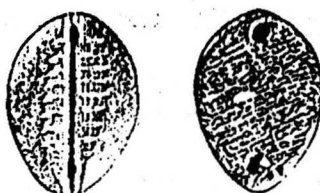
have been found in bone, stone, shell, bronze, jade, clay, iron, ivory, copper, quartz and white marble. Although the actual purchasing value of a cowrie has not been determined yet, it must be assumed that all the above-mentioned materials cannot have been of equal value to an original shell and therefore not have had any currency value. This goes particularly for bone and stone imitations which most likely served as substitutes for burial money or as ornaments or charms used by people who could not afford the real thing. On the other hand it is possible that the attitude may have prevailed that a cowrie is a cowrie just as in our time a penny used to be a penny whether in mint condition or defaced.



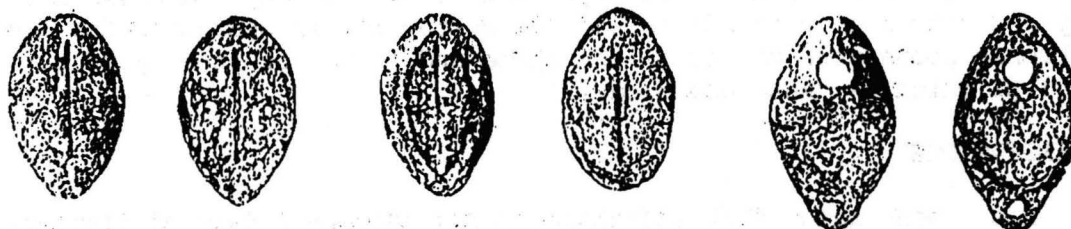
Cowrie shells found in China



Bone imitations of cowrie shells



Stone imitation of cowrie shell



Copper imitations of cowrie shells



Copper imitations of cowrie shells, gilded



Imitation cowry in mother of pearl

Both bone and stone imitations vary considerably in their workmanship from rather crude carving to very realistic; but they seemed to have served their purpose or else the workmen would have taken greater trouble. All numismatists are agreed, however, that the various imitations of cowries were used as money and were the result of a shortage of supply of the real shells.

In the chronology of ancient Chinese cowrie currency the bone and stone imitations are placed between c. 900 B.C. and 600 B.C.

I PI CH' IEN - "ANT NOSE MONEY"

About 598 B.C. King Chuang of Ch'u thought that the coins in use were too light and tried to replace "the small ones" by "big ones". This reform was so much resented by the people that the attempt had to be abandoned. What type of coin this episode refers to is not known. The reason for this resentment may be sought in the inconvenience caused by larger and heavier coins; the greater weight may also have increased the value of the coins and made it less suitable for smaller transactions.

It has been suggested that these "small ones" are possibly the "ant nose" and "ghost face" coins which have been found in large hoards in graves of the period 400-221 B.C. and which were in use at least as late as 225 B.C. For a long time it had been thought that these pieces were grave gifts; but as they have also been excavated in sites other than graves they are now accepted as being money that had already been in use before 600 B.C. According to the British Museum these coins date from 612-589 B.C. and were issued by order of the Prime Minister of the King of Tsu.

The popular name "ant nose money" describes the two most common types of these coins; the proper translation perhaps should be "ant and nose money". Both "ant" and "nose" refer to the legends on the coins, one looking like an ant and the other at a stretch of the imagination like a nose:



Ant nose money

Another explanation given is that these coins were put into the nostrils of the dead to prevent the evil spirits entering the corpse in the disguise of ants.

The "nose" is part of the legend of the coins also called "ghost face money" (Kuei-lien-chien) or "ghost head money" (Kuei-t'ou ch'ien). They got this nickname for the obvious reason that the legend looks indeed like the face of a ghostly creature. The inscription on the coin is very uncertain allowing seven different interpretations, one being "chi" = small (the "small ones"?) and another being "pei" = cowrie.



Ghost face money

The ant coins too got their name from the sign of the legend which also has various interpretations, the most acceptable being "one chu" (a weight):



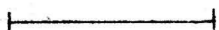
"Ant" money

This brass money is by many considered to represent the transition stage from cowrie shell money to metallic currency though still retaining the time-honoured shape of the cowrie. One explanation given for its introduction is a decreasing supply of cowries and an increasing demand for "small change". As will be seen it was not the final answer to the problem once the counterfeiters got busy.

SURVIVAL OF THE COWRIES

In 335 B.C. the Prince of Ts'in realised the difficulty of finding a sufficient supply of tortoise-shells and cowries to meet the rising demand for a convenient currency and suppressed both media. He instead adopted metal coins already in existence in neighbouring states maintained by private persons. He

Class IV: 27.6 mm and over = 10 copper cash



Class V: 13.8 mm and over = 3 copper cash



Any shell below 13.8 mm was not to be taken as money.

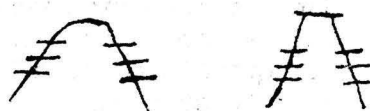
Trade and commerce, however, had greatly developed during the past centuries and the merchants in particular objected to the return of the antiquated system. Within five years Wang Mang had to acknowledge his mistake and the complicated system of shell money was discontinued.

BUT - the cowries survived!

THE VALUE OF THE COWRIE

The ancient unit of measuring quantities of cowrie shells was the P'ENG. Alas, nobody has yet been able to establish the exact number or weight of cowries contained in one p'eng. All that can be deduced from the maximum size of rewards of ten p'eng is that it must have been "a lot". The author of the "I Ching" says that 100,000 ("dead shell-fish") are the equivalent of "riches".

The pictograph of the word "p'eng" is



representing a string of cowries bent in the middle like a necklace made of cowrie shells. Cheng Husan, writing about 150 A.D., says that a p'eng was five cowries; modern writers suggest ten shells, in which case ten p'eng (the largest gift recorded) meant 100 cowries! As this was considered "a lot", what was the purchasing power of one cowrie? Only two thousand years later we get a hint at the actual value of cowrie shells from Marco Polo (c. 1275) who wrote in his memoirs: "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"; in other words: 640 cowries were worth one saggio of fine gold! It looks as if the cowrie had kept its high value over twenty centuries!

And so the same shells that Marco Polo noted in the Province of Yunnan where "for money they use white cowries, i.e. the sea-shells that we used to make necklaces for dogs" continued to be legal tender: as late as the 14th. century A.D. taxes were being paid in cowries although coins had by then been in existence for about 2000 years. In a good year the Imperial Treasury would collect over a million shells! Though eventually they lost their legality they were still used as "small change" in out-of-the-way places until the first half of this (20th!) century.

4000 years of cowrie money!



Fred Pinn

CONSERVATION AND THE NON-MARINE MOLLUSCA OF THE WEST SIDE SLOPES AND NORTH FRONT

CEMETERY, GIBRALTAR, WITH NOTES ON THEBA PISANA (MÜLLER 1774) POLYMORPHISM

Introduction

The two sites are threatened in different ways by disturbance. The slopes are being considered as the site for the construction of a road which would link the Calpe area to the north with Europa road to the south. The management of the cemetery has been transferred from the Gibraltar Government to a private company and the plans are to provide a lawn cemetery whereas traditionally a well kept semi-wild condition has existed. Both sites are being studied by the Gibraltar Ornithological and Natural History Society (G.O.N.H.S.) with a view to provide consultation on the management of the cemetery and arrest road construction. This paper is a synopsis of an address given by the author to the Society on the 13th. December 1990.

Conservation

In Gibraltar, where land area is at a premium, the conservation of sites of importance becomes a necessity with the current expansion of the economy. The problems of limited land resource have been helped to a degree by recent land reclamation, and protection of habitats is becoming a reality with the recent declaration by Government of nature reserve status for the upper rock. This provides a framework for future policy and the G.O.N.H.S. is recommending other areas including marine sections.

Various authors have indicated criteria which merit consideration in the decision-making process concerning areas to be conserved. Table 1 lists the popularity of criteria used in seventeen conservation evaluation schemes (from Usher 1986, after Magurran 1988). Diversity of habitats and/or species is the most often quoted one with conservationists almost always viewing species diversity in terms of species richness (Magurran 1988).

TABLE 1

Popularity of criteria used in 17 conservation evaluation schemes. From Usher (1986).

CRITERIA	FREQUENCY OF USE
Diversity (of habitats and/or species)	16
Naturalness, rarity (of habitats and/or species)	13
Area	11
Threat of human interference	8
Amenity and educational value, representativeness	7
Scientific value	6
Recorded history	4
Population size, typicalness	3
Ecological fragility, position in ecological/geographical unit, potential value, uniqueness	2
Archaeological interest, availability, importance for migratory wildfowl, management factors, replaceability, silvicultural gene bank, successional stage, wildlife reservoir potential	1

Methods and site descriptions

Figure 1 (page 421) shows the positions of the two sites.

West side slopes (figure 2 - page 421). A section of the area proposed for development was chosen and sampled. The lower parts of the slopes are anthropogenic and have their origins in 1940-42 being the tunnel spoils, removed via Durham Adit, of part of the extensive tunnel system now present in the rock; they therefore provide a time reference for habitat development. These lower scree slopes support less vegetation than the upper slopes (which are essentially non-anthropogenic) and are characterised by low-growing plant species with the occasional dwarfed Pistacia lentiscus L. and scattered Umbellifers. The flatter central region supports Umbellifers, many grasses and Acanthus mollis L., Olea europea oleaster (Hoffm. and Link) borders this area and the beginning of the upper slopes and A. mollis is abundant under their cover. The entire site grades from scree, steppe, low maquis to medium height maquis with the largest O. europea oleaster, and two Celtis australis L., at the upper regions, and slopes from approximately 70 to 180 metres over the 200 metres considered.

Ten stations (indicated on figure 2) were chosen on an a priori basis to provide as high an indication of species richness as possible based on their relationships to surrounding vegetation and topography. Baited traps (12.5 x 10.5 x 7.5 cm) were used over a seven hour period (4.00 p.m. to midnight) and all species recorded. The soil pH at all stations except 7, which consisted almost entirely of rocks, was determined using Universal Indicator Solution after treatment with barium sulphate. Five soil samples were taken (0.15 to 0.20 L.) and examined using 40X magnification after sieving using 6.5 and 1.5 mm mesh.

North Front Cemetery (figure 3 - page 422). The site was sampled and five soil samples were taken (0.15 to 0.30 L.) and examined using 40X magnification after sieving using 6.5 and 1.5 mm mesh. Soil from ten stations (indicated on figure 3) were used for pH measurement as described earlier. The vegetation consists mostly of species which are low to medium in height such as Oxalis pes-caprae L., Chrysanthemum coronarium discolor Urv., Malva sylvestris L. and grasses. The less disturbed peripheral sections support Pistacia lentiscus L., Nerium oleander L. and Arundo donax L.; these species along with Phoenix sp., Hibiscus sp., Ficus carica L. and Myoporum pictum are also scattered in lower densities throughout the rest of the cemetery. The site has been used as a cemetery since 1756 but it has not been possible to discover how it was managed in the early stages.

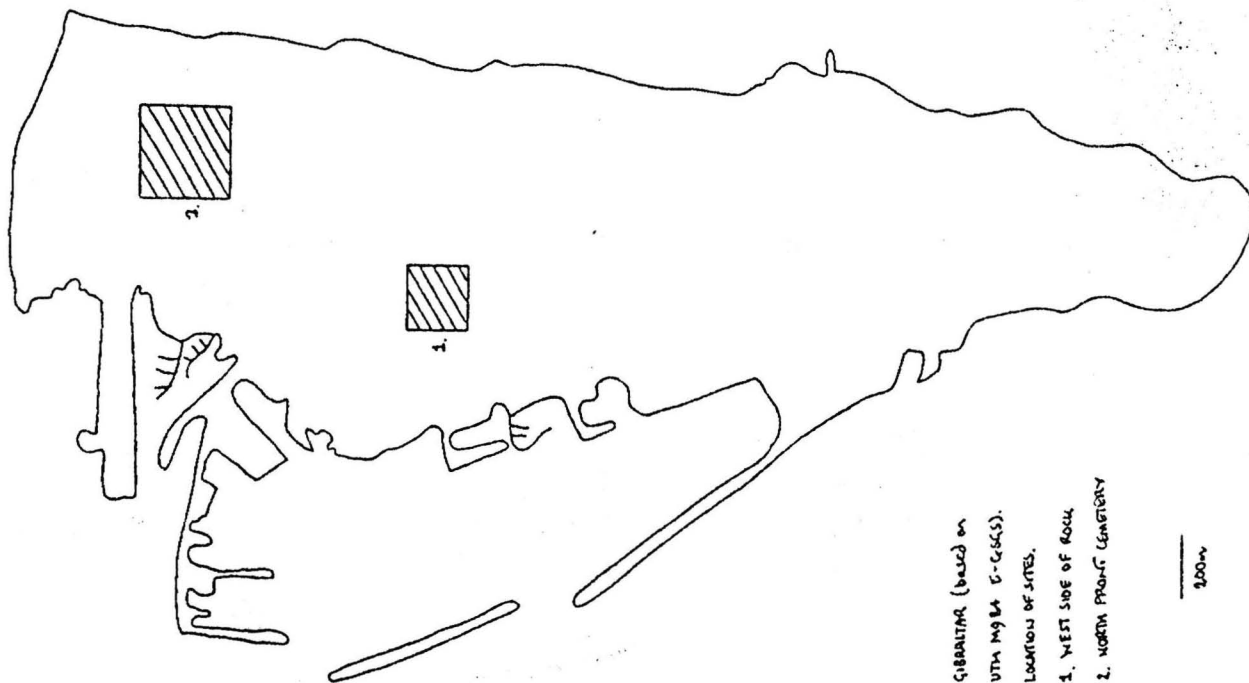
Theba pisana polymorphism. Specimens were collected at random from the site and separated into the different morphs with dubious specimens excluded. In addition masses and dimensions were obtained (Table 2).

Results and discussion

Table 3 and figure 4 show the species observed at the sites.

pH measurements were similar at both sites (figure 5) and in the range acceptable to Gibraltar species. The absence of I. marmoratus and O. lactea at the cemetery is interesting, these two species are fairly widespread in Gibraltar even in areas regularly disturbed by man and the high numbers of T. pisana may be an important factor to consider in this context in regards to the information it may provide on shell pattern selection at the cemetery. Subjectively, inter-specific competition between molluscs is not suspected but only detailed research would substantiate this.

FIGURE 1



AREA ON WEST SIDE OF ROCK, GIBRALTAR. CENTRAL REFERENCE: TP 8370 0210

FIGURE 2

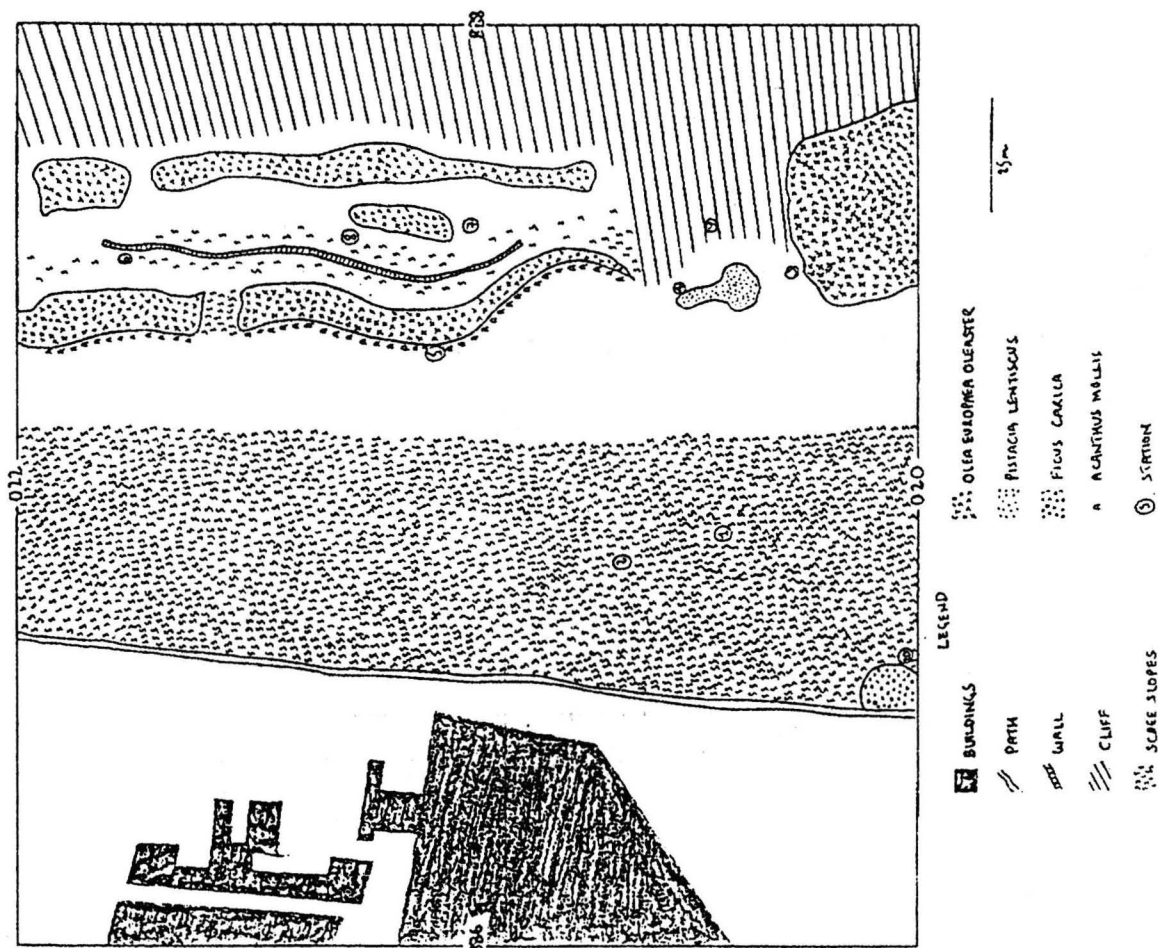
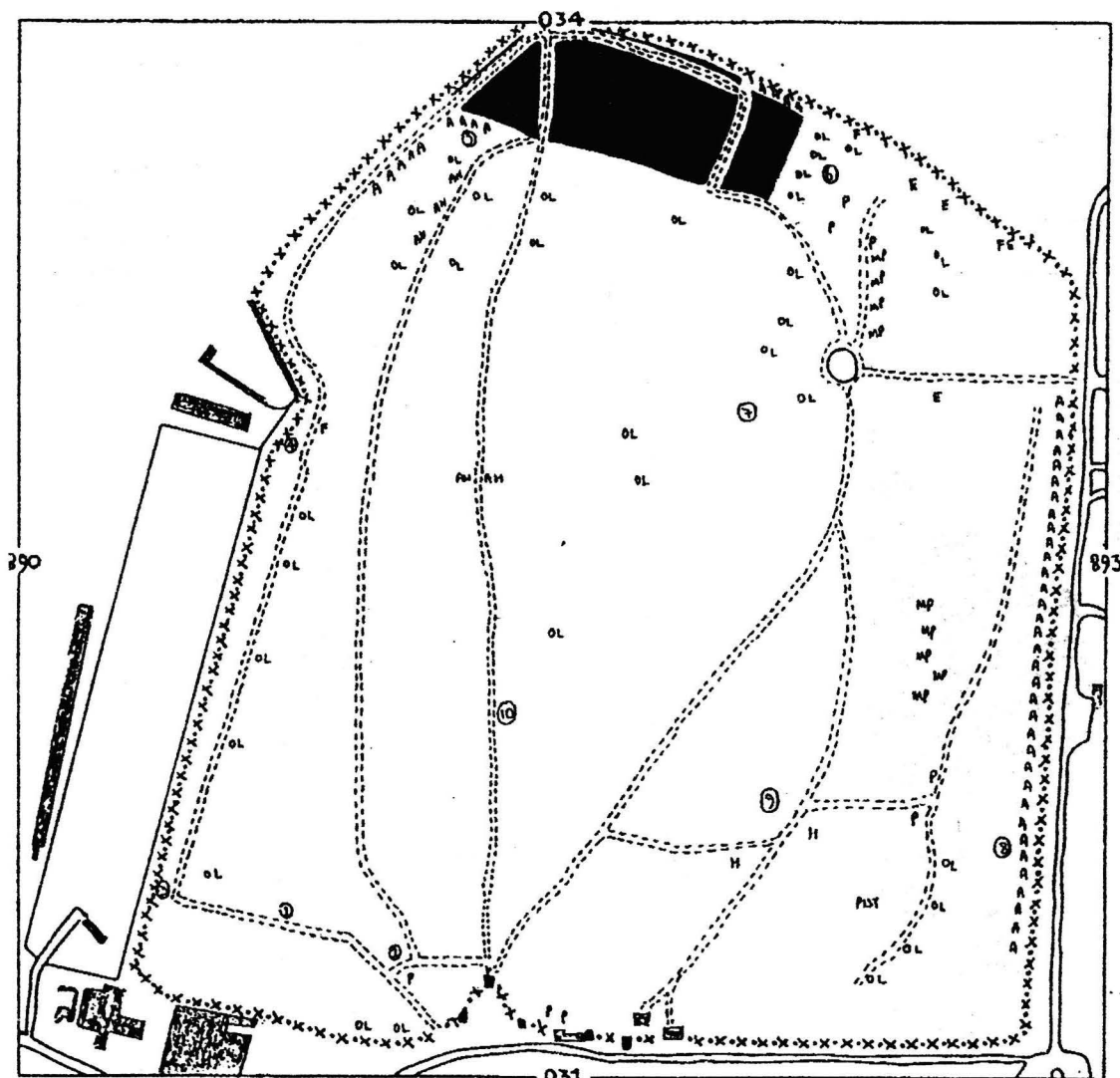


FIG. 3. North Front Cemetery, Gibraltar. Central Ref: TF 8915 0325

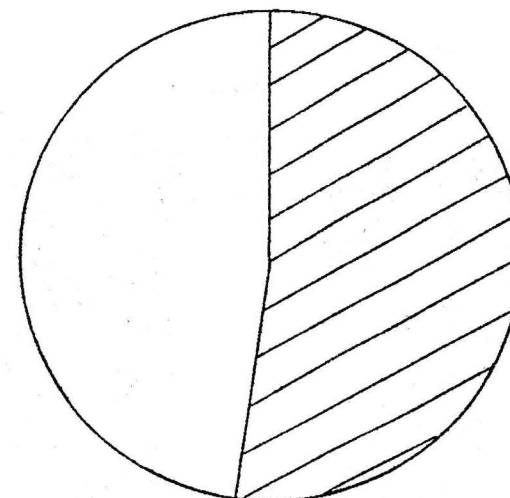


LEGEND

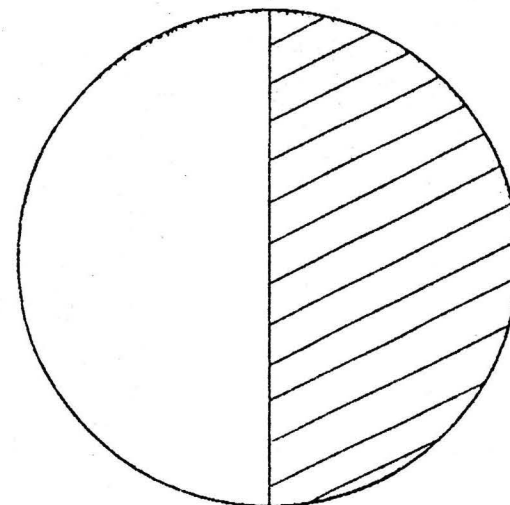
BUILDINGS	OL NERUM OLEANDER	MP MYOPORUM PICTUM
ROAD	H HIBISCUS SP.	F FICUS CARICA
PATH	PIST PISTACIA LENTISCUS	FE FICUS ELASTICA
BOUNDARY	RH RAPICARIA HETEROPHYLLA	A ARUNDO DONAX
LOOSE STONES	P PHOENIX SP.	⑤ STATION

FIGURE 4. An indication of species richness at the sites

Total non-marine species in Gibraltar:30
(Represented by entire circle area)



1 West side of Rock central reference
TF 8870 0210 - 16 species



2 North Front Cemetery central reference TF 8915 0325 - 15 species

FIGURE 5. pH at the two sites

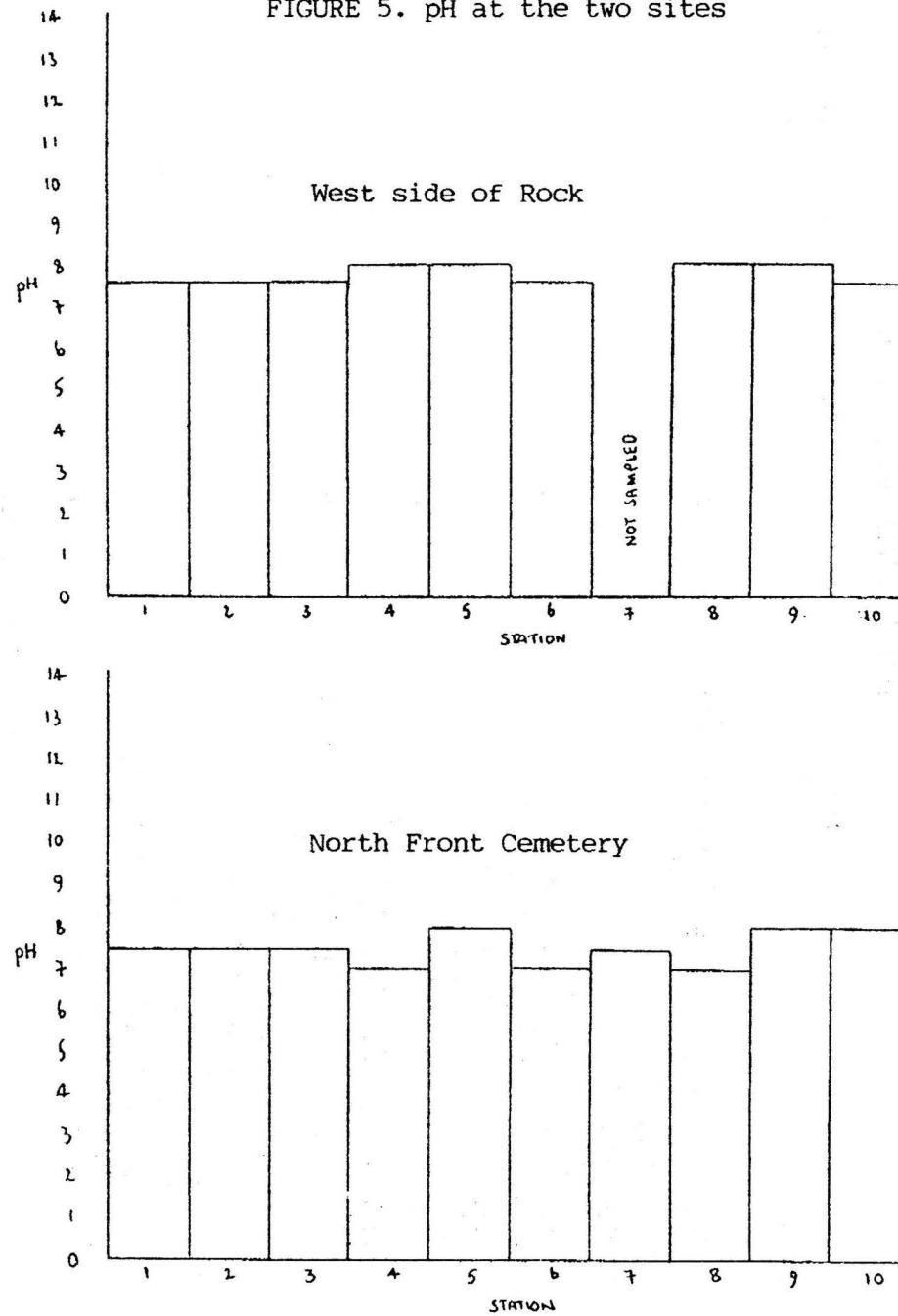


FIGURE 7. *Theba pisana* (Müller 1774) at North Front Cemetery, Gibraltar: A synopsis

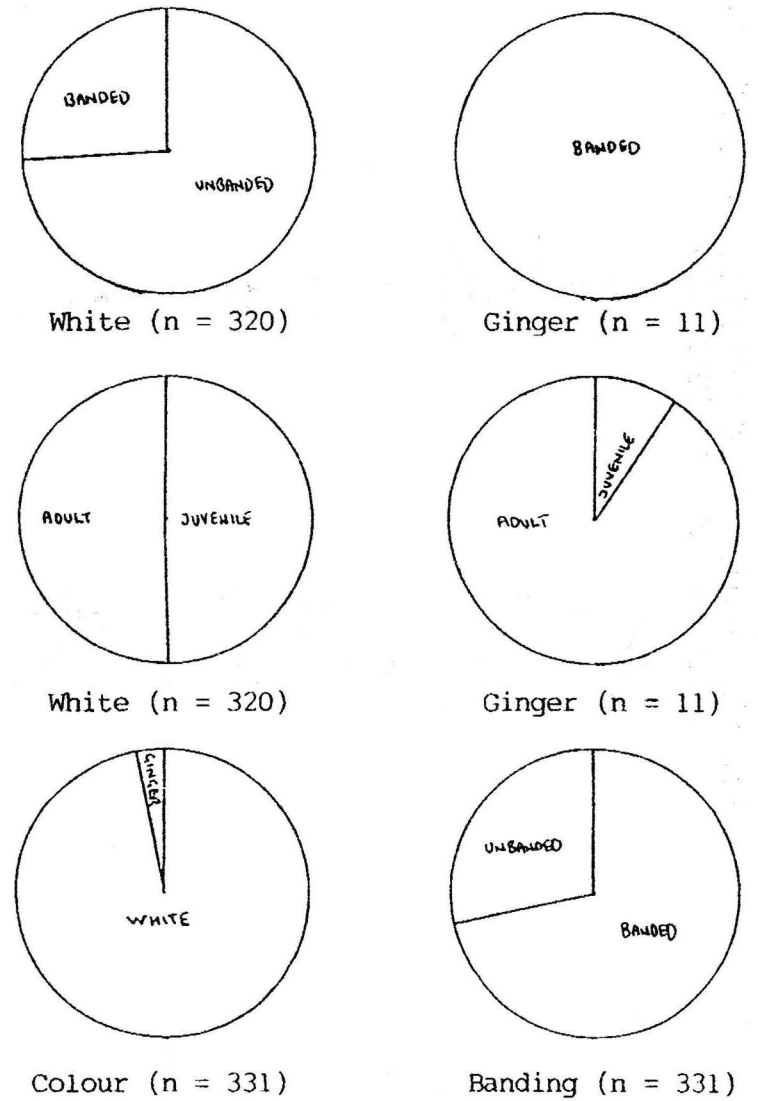


TABLE 2. THEBA PISANA (MÜLLER 1774) AT NORTH FRONT CEMETERY, GIBRALTAR

Dimensions (mm) and Masses (g)			
Dimensions	Height		Breadth
Juvenile	177	n	177
	7.946	$\bar{x}$	11.453
	1.632	$x_{b_{n-1}}$	1.871
	1.627	x_{b_n}	1.865
	1406.5	Σx	2027.1
	4.5-12.4	range	6.6-16.2
Adult	163	n	164
	13.475	$\bar{x}$	18.189
	1.139	$x_{b_{n-1}}$	0.984
	1.135	x_{b_n}	0.981
	2196.5	Σx	2983.1
	11.0-15.9	range	16.0-20.5
Masses	Juvenile		Adult
	173	n	167
	0.343	$\bar{x}$	1.219
	0.173	$x_{b_{n-1}}$	0.269
	0.173	x_{b_n}	0.268
	59.270	Σx	203.674
	0.07-0.89	range	0.46-2.04

TABLE 3. SPECIES LISTINGS FOR THE TWO SITES

SPECIES	Location:	West side of Rock	North Front Cemetery
	Central Ref.:	TF 8870 0210	TF 8915 0325
<u>Truncatellina cylindrica</u> (Férussac 1807)		x	
<u>Ferussacia follicula</u> (Gmelin 1790)			x
<u>Cecilioides</u> sp.		x	x
<u>Rumina decollata</u> (L. 1758)		x	x
<u>Testacella mavgei</u> Férussac 1819		x	
<u>Vitrea contracta</u> (Westerlund 1871)		x	x
<u>Oxychilus draparnaudi</u> (Beck 1837)		x	x
<u>Oxychilus hydatinus</u> (Rossmassler 1838)		x	
<u>Milax gagates</u> (Draparnaud 1801)			x
<u>Limax flavus</u> L. 1758		x	x
<u>Deroceras ponsonbyi</u> (Hesse 1884)		x	
<u>Helicella apicina</u> (Lamarck 1822)			x
<u>Helicella conspurcata</u> (Draparnaud 1801)		x	x
<u>Cochlicella acuta</u> (Müller 1774)			x
<u>Helix aspersa</u> Müller 1774		x	x
<u>Iberus marmaratus</u> (Férussac 1801)		x	
<u>Otala lactea</u> (Müller 1774)		x	
<u>Theba pisana</u> (Müller 1774)			x
<u>Caracollina lenticula</u> (Michaud 1831)		x	x
<u>Oestophora calpeana</u> (Morelet)		x	x
<u>Arion mareletti</u> Hesse 1884		x	x

(x denotes presence)

The results for T. pisana polymorphism illustrate that the most widespread, and therefore most successful, morph at this site is all white and unbanded (figures 6 and 7). Possible major selection pressures are predation and solar radiation. White unbanded shells will be more inconspicuous to predators on white walls and tombstones than banded ones, but the banded morphs may be more inconspicuous in vegetation than the white morphs. In order to elucidate this more fully it would be necessary to partition the site and collect specimens from different areas such as tombstones and amongst Arundo and Nerium growth. If the above theory is correct the largest number of banded morphs would occur amongst vegetation. An important factor in predation is the role of Lampyris and other Coleoptera larvae which may also be applying selective pressures on polymorphism. Selection of prey by these larvae is possibly distinct from other predators such as reptiles and birds and this is an area of potentially fruitful research in Gibraltar.

White shells will reflect more solar radiation than dark ones and this is advantageous during the hot months of aestivation. At this site the vast majority of T. pisana aestivate on tombstones at approximately one metre from the soil surface but on other sites various plants are used including C. c. discolor, Aloe arborescens Miller and Agave americana L.

Future research into T. pisana polymorphism in Gibraltar will involve habitat partition with regards to morph frequencies and the comparison of frequencies at different sites consisting of both similar and dissimilar habitats. Possible influencing factors may be obtained which may provide an indication of selective pressures acting on this species.

Conclusions

The species richness of each of the sites represents, in both cases, approximately fifty per cent of the total possible for Gibraltar but this is not particularly outstanding and therefore may not be used in itself as a claim for conservation. Rather, the potential for research into time factor periods at the west side slopes and polymorphism at the cemetery may be more valuable topics to pursue in claiming conservation. The construction of a road at the slopes would involve a considerable section of the lower rock area, presently undisturbed, which would probably result in the attraction of extra buildings, amenities, etc. with its concomitant effects on the surrounding areas including the upper rock and this is an important consideration. The site used in this short survey may not be taken in isolation and this reflects the holistic approach necessary in conservation.

The cemetery would appear more pleasant to some if it were carpeted with cropped grass but this would be at the expense of a proportion of its wildlife. The continual disturbance necessary to maintain it in such a state would have detrimental effects on many species. The cemetery is recognized as an important location for many birds and reptiles and is one of the last strongholds in Gibraltar of Lacerta lepida. In the present situation where vegetation clearing has already commenced the best possible outcome may be that areas of the site are left undisturbed. These areas would include dense growths of Arundo and Malva and recommendations to adopt this strategy have been made to the relevant authorities.

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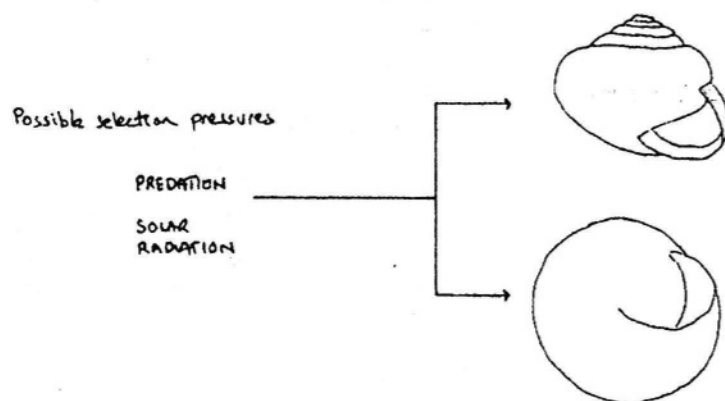
Heller, J., and Gadot, M., 1984. Shell polymorphism of Theba pisana - the

effects of rodent distribution. Malacologia, 25(2): 349-354.
 Magurran, A.E., 1988. Ecological diversity and its measurement. Croom Helm.

Alexander Menez, [REDACTED], Gibraltar

FIGURE 6. Theba pisana (Müller 1774) at North Front Cemetery, Gibraltar: Actual values and relative morph frequencies.

Banding	n	0000	0034	0234	1234	Excluded
white						
juvenile	158	136	0	0	7	15
adult	162	102	5	28	26	1
ginger						
juvenile	1	0	0	1	0	0
adult	10	0	0	0	10	0
total	331	238	5	29	43	16
relative morph frequency (%)		71.9	1.5	8.8	13.0	4.8
white juvenile		86.1	0	0	4.4	9.5
adult		63.0	3.1	17.3	16.0	0.6
total		74.4	1.6	8.8	10.3	5.0
ginger juvenile		0	0	100	0	0
adult		0	0	0	100	0
total		0	0	9.1	90.9	0



ZINGIS RADIOLATA VON MARTENS (PULMONATA - UROCICLIDAE)

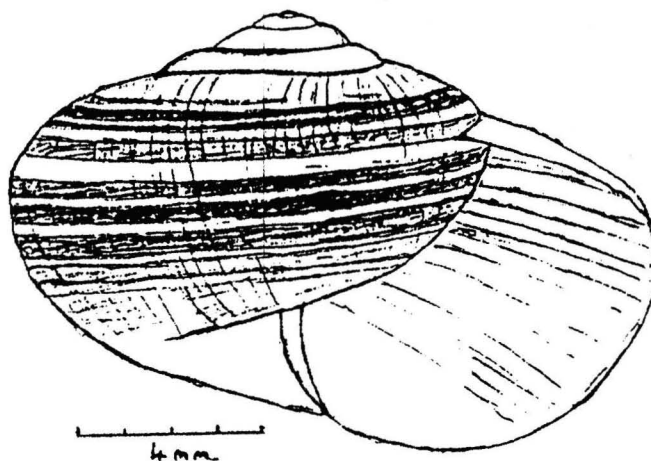
A SPECIES MUCH NEEDED PRESERVED IN SPIRIT

As I have pointed out on several occasions the names to be applied to many tropical African snails at present referred to Zingis (Urocyclidae) will not be certain until properly prepared material of its type species has been exhaustive-

ly examined (Verdcourt 1961). Although Pfeffer gave some account of the genital anatomy and radula when von Martens described Z. radiolata in 1878 it is quite inadequate to solve the problems. Pfeffer had to make out what he could from boiling up a piece of dried animal. The species was again described in 1915 by Tomlin as Peltatus polystephes, the generic allocation being on the advice of Gude (who compared it with P. cotyledonis (Benson)). Tomlin writes 'a large number of this species was collected by Mr. Feather* and forwarded alive but they did not survive the journey'. No further collections appear to have been made and it is not at all evident what the ecological preferences of the beast are. Hildebrandt collected it at Ndi and Feather on the Teita Hills at 5400-6000 ft. Roger Polhill and I could not find it when we made a special search at Ndi and in the Teita Hills in 1960, both in succulent scrub and woodland on huge rock domes and in evergreen forest. The altitude given by Feather indicates forest which was formerly very extensive in the area on the series of mountain tops but is now sadly depleted. I cannot, however, believe that the species is extinct. The other species referred to Zingis are forest dwellers but as pointed out above it is by no means certain they belong in the same genus. Now that so many tourists visit Kenya it is likely that someone (not restricted to a package tour) will visit the area which is after all fairly close to the main Mombasa to Nairobi road. Even locating the exact locality where empty shells have been found would enable someone better equipped to make a visit with some certainty of finding the species alive. It is not minute and easily recognised.

The stimulus for this note came from Mrs. McMillan who discovered a box of paratypes of Peltatus polystephes in the vast accumulation of the remnants of the Salisbury collection. I borrowed them in the hope I might be able to reconstitute a dried-up animal but it was immediately clear that it would have been foolish to break a shell for what was 99.9% certain to be a failure. I did, however, make a pencil sketch of one of the shells and a photocopy of this is reproduced here which I hope will be adequate to allow of recognition. I examined the types of Zingis radiolata in Berlin over 30 years ago and noted the thin shells had a peculiar pattern of transverse bands of coalescing white spots and spiral hyaline bands and a main brown spiral band. Tomlin described his polystephes as thin, umbilicate, of 5 whorls, olivaceous with endlessly variable series of chalky white bands (using the opposite notion as to which are the bands and which is the background colour to myself). The difference in colour patterns I have always assumed was variation in different populations but Watson (1934) cautiously treated radiolata and polystephes as different species of Zingis.

*About whom I have not yet attempted to find out anything.



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B. Verdcourt

MORE GLEANINGS FROM DYFED

Neither the weather nor the timing of the tides were conducive to shore work during the Christmas period, 1990. However we braved the wind and the showers on 24th and visited Broadhaven (Dyfed), 51°36.5'N 04°55.2'W, and collected shells from the strandline and about half a litre of shell sand. This was about three times as much as was obtained two years ago (Smith, 1989), and at first glance rather more worn. However, careful sorting (most shells were under 2mm, many under 1mm) has revealed 102 species, many common and reasonably fresh. Many tiny juvenile shells were present and growth series have been added to my collection. It was interesting to note that species such as *Rissoa interrupta* and *R. parva*, which live on algae, were rare, yet pyramidellids were abundant - 14 species, over 150 specimens of which more than half were fresh enough to be worth keeping. This is truly an excellent place to find the group. It is interesting to note that in addition to the rare pyramidellids, *Rhomboidella prideaux* was found again, such a small delicate shell, not much more than the prodisoconch, that one might assume a viable population nearby. There was what can be called a wreck of *Epilepton clarkiae*, 3 complete shells and over 50 valves being found. One suspects that the gales had had an effect on its host species, likewise those of the pyramidellids.

According to Dennis Seaward, *Onoba aculeus*, *Semierycina nitida*, *Neolepton sulcatulum*, *Arculus sykesi* and *Arcopagia crassa* are new records for Sea Area 21.

In order to save space and tedium, I list only those species (apart from the pyramidellids) found additionally to those previously noted, together with those not found this time. Species which I did not record from Dyfed two years ago are marked *.

- Leptochiton asellus* (Gmelin, 1791) *
Tonicella rubra (L., 1767) *
Emarginula fissura (L., 1758) *
Tectura virginea (Müller, 1776) *
Patella depressa Pennant, 1777 *
Gibbula tumida (Montagu, 1803)
Calliostoma zizyphinum (L., 1758) *
Dikoleps nitens (Philippi, 1844) *
Lacuna parva (da Costa, 1778) *
Littorina mariae Sacchi & Rastelli, 1966
Littorina nigrolineata Gray, 1839 *
Hydrobia ulvae (Pennant, 1777)
Alvania cancellata (da Costa, 1778)
Onoba aculeus (Gould, 1841) *
Caecum glabrum (Montagu, 1803) *
Tornus subcarinatus (Montagu, 1803)
Bittium reticulatum (da Costa, 1778)
Trivia arctica (Pulteney, 1799) *
Trivia monacha (da Costa, 1778) *
Lamellaria latens (Müller, 1776)
Cerithiopsis pulchella Jeffreys, 1858 *
Cerithiopsis tubercularis (Montagu, 1803) *
Vitreolina philippi (Ponzi & Rayneval, 1854) *
Graphis albida (Kamacher, 1798) *
Buccinum undatum L., 1758
Odostomia plicata (Montagu, 1803)
Odostomia turrita Hanley, 1844
Odostomia unidentata (Montagu, 1803)
Brachystomia eulimoides (Hanley, 1844)
Brachystomia rissoides (Hanley, 1844)
Chrysallida decussata (Montagu, 1803) *
Chrysallida indistincta (Montagu, 1808)
Chrysallida obtusa (Brown, 1827)
Jordaniella nivosa (Montagu, 1803)
Jordaniella truncatula (Jeffreys, 1850)
Ondina divisa (J Adams, 1797)
Ondina obliqua (Alder, 1844)
Ondina warreni (Thompson, 1845)
Partulida spiralis (Montagu, 1803)
Turbonilla lactea (L., 1758)
Acteon tornatilis (L., 1758)
Philine punctata (J Adams, 1800)
Antalis entalis (L., 1758) *
Modiolarca tumida (Hanley, 1843) *
Chlamys varia (L., 1758) *
Heteranomia squamula (L., 1758)
Lucinoma borealis (L., 1758)
Semierycina nitida (Turton, 1822) *
Neolepton sulcatulum (Jeffreys, 1859) *
Arculus sykesi (Chaster, 1895) *
Goodallia triangularis (Montagu, 1803) *
Cerastoderma edule (L., 1758)
Arcopagia crassa (Pennant, 1777) *

Fabulina fabula (Gmelin, 1791)
Gari fervensis (Gmelin, 1791)
Abra prismatica (Montagu, 1803) *
Arctica islandica (L., 1767) *
Timoclea ovata (Pennant, 1777) *
Venerupis senegalensis (Gmelin, 1791)
Mya truncata L., 1758
Thracia phaseolina (Lamarck, 1818)
Sepia officinalis L., 1758

On the sand hills adjoining the Bosherston lily ponds there were many shells of *Anodonta cygaea* (L., 1758). These were fresh, mostly articulated but broken as if by birds.

Further investigations were carried out at Tenby [52°36.5'N 04°41.4'W] on 7 April 1991, when a large sample of coarse shell sand (about 3 litres) was collected. The shells (93 species) were mostly much worn, but species of interest include *Callistoma granulatum* (Born, 1778) (several juvenile shells, new this century), *Hyala vitrea* (Montagu, 1803), *Mangelia attenuata* (Montagu, 1803), *Mangelia nebula* (Montagu, 1803) and *Pholas dactylus* L., 1758 (fragments).

There had been a wreck of bones of *Sepia officinalis*, L., 1758) much covered with green algae, which at first was considered due to the extremely dirty condition of the beach and poor water quality. However, later in the week similar bones were found further west at Broadhaven, which was very clean, thus the algal growth must have occurred at sea, if inshore.

At the extreme north end of Dyfed (Cardigan Bay, Sea Area 22), the rocky shore and strandline at Lower Borth [52°31.8'N 04°03'W] and the strandline at the end of the spit closing the Dovey estuary at Ynyslas [52°31.8'N 04°03.8'W] were visited on 13 April 1991. At the former locality the rocky shore was very disappointing, exhibiting features of a stressed environment apparently due to turbidity in the water, few species living there and none of note apart from *Lasaea adansonii* (Gmelin, 1791) [*L. rubra*] which was abundant living in crevices on the upper shore and to my mind a strange omission from the published lists for the Area. The strandline yielded a small number of species, including the following additional new or upgraded records:- *Mangelia brachystoma* (Philippi, 1844) and *Eulimella scillae* (Scacchi, 1835) (fragment).

At Ynyslas 82 species were found, and among the rarer ones there were *Caecum imperforatum* (Kanmacher in G Adams, 1798) (cast-up live, and complete with operculum, first live record), *Epitonium clathrus* (L., 1758), *Aclis ascaris* (Turton, 1819), *Odostomia turrita* Hanley, 1844 (cast-up live, new record). A number of bivalves which have not been recorded as recently living in the area were found as extremely fresh articulated shells and it would appear that they do indeed live nearby:- *Acanthocardia echinata* (L., 1758) (including the delicate juveniles), *Mactra stultorum* (L., 1758) (likewise), *Spisula subtruncata* (da Costa, 1778), *Pharus legumen* (L., 1758) (likewise), *Dosinia lupinus* (L., 1758), *Dosinia exoleta* (L., 1758), *Mysia undata* (Pennant, 1777) (likewise) and *Thracia villosiuscula* (Macgillivray, 1818). Full lists have been sent to Jan Light, the new Marine Recorder.

Nomenclature after Smith & Heppell (1991).

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Shelagh Smith

FIELD MEETING TO THE WEYMOUTH AREA (1st. AND 2nd. JUNE 1991)

The Weymouth dredging weekend has become a regular event in the Society's field meeting calendar and 1991 marked the tenth consecutive trip. The dredging in particular is always well supported by a group of hardy regulars but it also attracts some new members and this year three first-timers were welcomed along. Someone is also hustled into writing the report and this year the 'pleasure' has been awarded to me.

The Saturday was spent examining shores in the Weymouth area. Bowleaze Cove and Redcliff Point lie at the north-eastern end of Weymouth Bay and have much to offer the palaeontologist and malacologist alike. The geology gives rise to a shore comprised of mainly large Corallian rocks in the bay with a rocky ledge at Redcliff Point where the Oxford Clay is faulted against the Corallian. Slabs of Osmington Oolite and 'doggers' of Bencliff Grit are a feature of the shore. Loose fossils of Gryphaea, Pholadomya, Pleurotomaria and ammonites, among others, were collected from amongst the rocks on the shore. The lower shore was colonised with algal species that are generally associated with relatively sheltered conditions. The marine malacofauna was, however, less rich than might have been expected. Twenty species were recorded alive in the field with Gibbula umbilicalis and the Patella spp. dominating. A further seven species were retrieved from a sample of mixed weeds that was sorted at home. These included Omalogyra atomus, Rissoa querini, Odostomia plicata and the sacoglossan Limapontia capitata. The abundance of limpets did permit an identification workshop to be carried out on the spot. It is a great pity not to record limpets other than Patella vulgata, if they are present, through inability to recognise them. As all three species (P. vulgata, P. depressa and P. ulyssiponensis) plus probable hybrids were present, the differences in the animals could be demonstrated. Also tips for spotting probable depressa and ulyssiponensis from the exterior appearance of the shell were given. It is, however, always necessary to flip them over to confirm their identity by the colour of the animal's foot and the presence or absence of white markings on the mantle fringe. (Good colour photographs of the animals may be found in 'A students guide to the seashore' by J. D. Fish and S. Fish, Unwin Hyman 1989).

Because of the prolonged low tide which is produced by the Gulder Effect in the Weymouth and Portland area, it was possible to visit another site; the north side of the Fleet at The Narrows. Examination of rocks quickly revealed an abundance of marine life with many species of ascidians particularly in evidence. Twenty six species of marine molluscs were recorded including several large specimens of the nudibranchs Aeolidia papillosa and the beautifully spotted Jorunna tormentosa, of which the latter appears to be a new record for the Fleet.

After ten dredging trips in and around Weymouth Bay we now have to go further afield to seek new records and therefore we settled down for a leisurely 'cruise' around Portland Bill and up to the end of Chesil Bank near Burton Bradstock. The first couple of hauls were on a sandy bottom and unfortunately the rather coarse mesh of the dredge meant that nearly everything passed through. The few shells caught in the corners did give a tantalising glimpse of what we missed. Although sparse in molluscs the dredge brought up other marine organisms of interest such as crabs, ophiuroids and anthozoans. Amongst these were the anenomes Calliactis parasitica and Adamsia carciniopados associated with their respective commensal hermit crabs. Haul 4 proved to be Adrian Rundle's dream sample; a sack teeming with brittle stars (mainly Ophiophrix fragilis), and although a long list of molluscs was obtained, few of these were alive. Haul 5 off Chesil was by far the richest and included the turrid Comarmondia gracilis. The haul contained large numbers of Aequipecten opercularis many of which had the ectoparasitic pyramidellid Brachystomia eulimoides attached to their auricles. The last two dredges were in Weymouth Bay; the first was dominated by Crepidula fornicata but also held a good list of other species including Pandora pinna. The final haul was again on sand and contained few species but did contain several large specimens of Philine aperta.

The dredging trips can never guarantee haul after haul of live molluscs, but they always generate a wealth of valuable data for the marine Census. They are also good social events where members can eat, drink, exchange ideas and be sick together all in one weekend!! Seasickness apart, if this sounds good and you haven't been before, come next year.

Ian Killeen

FIELD MEETING TO CUMERIA (3rd. - 5th. MAY 1991)

To me, the southern part of the Lake District has always been a favourite area for land snails. In a relatively small area it is possible to observe many species which are either very rare or not found at all in southern England. With Barry Colville's retirement to the area it was time to take advantage of his expert local knowledge and get him to lead a party to some rich snailly places. Eleven members plus John Bratton from English Nature (JNCC) attended for two or three days, and were based at the southern end of Lake Windermere.

The first locality we visited on Friday was the famous old conchological site at Meathop Fell to search for Succinea oblonga. Despite much disturbance in recent years by local farmers with manure heaps, the colony still appears to be thriving with many live animals and fresh shells in evidence. The woodland at the base of the fell was rich in many other species including Leiostyla anglica, but Pomatias elegans, at what is its northernmost locality, was not found alive on the day. An examination of an old ivy-covered wall further up the road quickly revealed the local specialities Vertigo alpestris and V. pusilla.

After lunch in a local pub (venues which became the places for all our meals) we recorded the fauna at Latterbarrow, a Cumbrian Trust NC reserve. The area comprised woodland, scrub and grassland habitats on limestone and from which there were no previous mollusc records. 35 species were found in the reserve and a further 2 just outside. Perhaps the most spectacular feature of the site were the carpets of cowslips and early purple orchids.

The day's fieldwork was completed with a damp but profitable trip to Eggerslack Wood near Grange over Sands. This is a steeply-sloping beechwood on limestone with a rich assemblage of leaf litter species. Amongst the 30 species recorded, most notable was the frequency of Spermodea lamellata.

Saturday morning began with a walk to the bleak summit of Whitbarrow Scar, although Abida secale, an interesting flora and a drowsy adder made the upward journey interesting. The goal at the top was to see an isolated colony of Clausilia dubia on an old mossy wall. A small fen yielded wetland molluscs including Vertigo antivertigo and, in all, 38 species were found in the area. It was a pity that the cool overcast weather meant that none of the butterfly fauna (which includes fritillaries) was seen.

Witherslack Wood has been recorded many times over the last few years but it has a fantastic snail fauna and was therefore an ideal place to take a group of southern malacologists. The mixed broadleaved woodland on a limestone scree, the springs and stream provide many different microhabitats and support a large and diverse malacofauna. 39 species were recorded on this occasion including Spermodea, Leiostyla, Acicula fusca and even Zonitoides excavatus in a less calcareous spot. The final site was at Scout Scar, Underbarrow which provided Helicella itala at a rare Cumbrian locality, stunning views of the Lyth Valley and a rainstorm which passed down it before our eyes (and only just over us).

All of the last day (Sunday) was spent at Gait Barrows NNR near Silverdale. The reserve was established in 1977 to protect one of the most important areas of limestone pavement in Britain. In addition to it having exceptional botanical and geomorphological interest it is also an important molluscan site for the Red Data Book species Vertigo angustior which was discovered in 1981 (see J. Conch., Lond. 31, p. 72).

In the morning we were kindly shown around the reserve by the warden Mr. Tony Aldridge who described the history of the site and its fauna and flora. A brief search quickly revealed V. angustior amongst moss in runnels on the limestone pavement. Some time was also spent examining the molluscs in and around Hawes Water lake and enjoying the Primula farinosa in the surrounding grassland. After lunch several of the party returned to the reserve to examine and record the molluscs at leisure.

We are very grateful to Barry Colville for leading such a successful meeting and for finding a succession of good places for us to eat and socialise.

Ian Killeen

AN IMPORTANT MOLLUSCAN DISCOVERY

In the minds of those twenty members and friends who took part in the September field meeting to Porlock, the most memorable aspect will probably be the volume and duration of the deluge that accompanied Saturday's excursions. It wasn't until Saturday evening, when we had enjoyed a convivial meal and were examining material collected during the day, that an exciting and important revelation was made.

I am delighted to report that our party had discovered what is probably the

second site this century for a colony of the Red Data Book species, Paludinella littorina (del Chiaje, 1828) at a site near Martinhoe, N. Devon. The other current site for this species is the Fleet in Dorset (Light, 1986).

It is intended to carry out further work to determine the status and ecology of the species at the site which is on National Trust property. Paludinella littorina has recently been added to the British Red Data Book (J. H. Bratton, ed. 1991) under category RDB3 (rare).

I would like to thank Michael Kerney for looking at material and confirming my identification.

REFERENCE

- Bratton, J.H., 1991 British Red Data Books No. 3, Invertebrates other than Insects, JNCC, Peterborough.
Light, J., 1986 Paludinella littorina living along the Fleet, Dorset. J. Conch. Lond. 32: 260.

Jan Light, Marine Recorder

APPLICATIONS PUBLISHED IN THE BULLETIN OF ZOOLOGICAL NOMENCLATURE

The following application was published on 30 September 1991 in Vol. 48, Part 3 of the Bulletin of Zoological Nomenclature. Comment or advice on this application is invited for publication in the Bulletin and should be sent to the Executive Secretary, I.C.Z.N., c/o. The Natural History Museum, Cromwell Road, London, SW7 5BD.

- Case 2766 Conus fulmen Reeve, 1843 (Mollusca, Gastropoda): proposed conservation, and Conus berghausi Michelotti, 1847: proposed precedence over C. demissus Philippi, 1836.
A. J. Kohn, Department of Zoology, University of Washington, Seattle, Washington 98195, U.S.A.
Abstract. The purpose of this application is the conservation of the specific name of Conus fulmen Reeve, 1843 by the suppression of its unused senior subjective synonym C. modestus Sowerby, (1833), and the conservation of C. berghausi Michelotti, 1847 by giving the name precedence over C. demissus Philippi, 1836. The species are marine prosobranch gastropods.

The following Opinions were published on 30 September 1991 in Vol. 48, Part 3 of the Bulletin of Zoological Nomenclature.

- Opinion 1650 Cymatiinae Iredale, 1913 (1854) (Mollusca, Gastropoda) and Cymatiinae Walton in Hutchinson, 1940 (Insecta, Heteroptera): homonymy removed.
Opinion 1651 Mytilus anatinus Linnaeus, 1758 (currently Anodonta anatina; Mollusca, Bivalvia): neotype designation confirmed.

A NEW PUBLICATION FROM MALTA

The Marine Shelled Mollusca of the Maltese Islands, part 1, Archaeogastropoda - C. Cachia, C. Mifsud and P. M. Sammut, with illustrations by Alfred Caruana Ruggier. Cost £5 Maltese equivalent to about £9 sterling. Available from the printers - Grima Printing and Publishing Industries, Industrial Estate, Marsa, Malta. A most attractive little book with numerous black and white illustrations, maps and colour plates. Includes a good bibliography, index to scientific names and key to plates. Soft covers, published 1991.

CHRISTMAS 1991

The Newsletter Editor sends Seasonal Greetings and best wishes for the NEW YEAR to every reader.

More contributions are required for future Newsletters. If you find the Newsletters interesting and useful, then do please contribute something towards their contents. Don't leave it all to a small handful of people.

P. E. Negus, Newsletter Editor

WANTED/FOR SALE

I am very keen to complete my run of the Journal of Conchology and I would like to acquire the following parts:

Vols. 1 - 6 complete, Vol. 7 pts. 1 - 11, Vol. 8 pts. 1 - 11, Vol. 9 complete, Vol. 10 pts. 1 - 4, 11 and 12, Vol. 15 pts. 3 - 6, 11 and 12, Vol. 16 pts. 1 - 4 and 7 - 12.

If any member has any of the above they wish to part with will they please contact me, stating their asking price.

As a result of recent acquisitions I have the following parts of the Journal of Conchology for sale:

Vol. 11 pts. 9 and 10, Vol. 12 complete, Vol. 14 pts. 8, 10 and 11, Vol. 15 pts. 7 - 9, Vol. 17 pt. 9, Vol. 19 pts. 1 and 9, Vol. 20 pt. 8, Vol. 21 pt. 9, Vol. 23 pt. 9, Vol. 24 pts 4, 5, 10 - 12.

Please write if you are interested: Ian Killeen, [REDACTED], Felixstowe, Suffolk, [REDACTED]. Telephone: [REDACTED].

ROBERT LLOYD PRAEGER AS A CONCHOLOGIST

That mighty Irish botanist the late Robert Lloyd Praeger (1865-1953) is not usually regarded as a conchologist. Yet he produced, at the urging of S. A. Stewart, (1) "The Marine Shells of the North of Ireland" (2) in 1889, when he lived at Holywood on the Co. Down shore of Belfast Lough. It is a most useful list as I found when I too lived (but on the opposite - Co. Antrim - side) beside the lough from 1921 to 1933.

Recently I found among my separate collection four pages of my own typescript marked "Copy" of a ms. list of marine Mollusca entitled "R.L.P.26/2/88 Shells found on Co. Down shore of Belfast Lough." The list comprises 112 species and is obviously later than the published list as a number of records are dated 1889 to 1892. All records are well localised, often with more detail than in the published work. A point to which attention should be drawn is the abbreviations used in the list. These are L = living; D = dead, shell only; A = animal still

in shell but dead; 2v valves united; 1v single valve; i.s. in situ. This seems a sensible way to differentiate varying degrees of freshness or otherwise.

I regret that I do not know the location of the original ms. and it does not appear in Timothy Collins' Floreat Hibernia a Bio-bibliography of Robert Lloyd Praeger 1865-1953 (1985) in which there is a list of Praeger mss. now housed in the Royal Irish Academy library.

REFERENCES

- 1) Personal knowledge.
- 2) Praeger, R.Ll. 1889. Proc. Belfast Naturalists' Field Club Series II, vol. 2; Appendix III (for 1887-1888); 55-110.

Nora McMillan, Liverpool Museum, 17 September 1991

CONCHOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND

1034th. (Ordinary) meeting held on 18th. May 1991 in the Demonstration Room of the Natural History Museum.

In the chair: Mr. F. R. Woodward with 38 members and friends present.

Nomination and election of new members:

J. F. Skinner [redacted], Westcliff-on-Sea, Essex, [redacted]
Mr. N. Gregory Noel Gregory Gallery, [redacted], Farnham Common, Bucks.
Mr. J. McMillan [redacted], Newmilns, Ayrshire, [redacted]

Lecture of the day: Mr. Noel Gregory - Environments for Shell Collecting (Marine shells of the Cocos Islands)

Announcements and correspondence: Mr. Woodward announced that the speaker for today's lecture was elected as a new member.

Meeting closed at 5.00 p.m.

Chairman

Members' Exhibits:

Mr. D. C. Long	<u>Limax</u> sp. from Pakefield, Suffolk. <u>Trichia</u> from Europe.
Mr. D. W. Guntrip	Plastic shells for serving cooked snails.
Mrs. M. Fogan	Two cuttings describing new shell grottoes.
Mr. T. Pain	The genus <u>Phyllonotus</u> Swainson, 1883 (Prosobranchia - Muricidae).
Mr. E. O. Bishop	Some Artistic Snails
Mrs. C. Street	Distribution of shells of Herm, February 1991.
Miss J. Sawyer	<u>Phasianella australis</u> , Gmelin 1788 from Emu Bay, Kangaroo Island, W. Australia.
Mr. F. Woodward	<u>Cypraea leucodon</u> , <u>Cypraea fultoni</u> , <u>Cypraea aurantium</u> and <u>Cypraea caurica</u> .

Printed by: D. C. Armsworth, [redacted], Baldock, Herts. Tel.: [redacted]

FORTHCOMING INDOOR MEETINGS

It is nearly a year since the Programme card was issued and it therefore seems appropriate to give the next two meetings a bit of publicity. In addition to whetting the appetite of regular attendees, I hope that it might entice some new faces along. The meetings begin at 14:30 in the Demonstration room of the Palaeontology Department, British Museum (Natural History), South Kensington. Production of your membership card at the front desk entitles you to free admission to the Museum.

Saturday 14 December: Open meeting on *Molluscs*

Something a little different this year because in addition to members' slides and exhibits we have decided to hold a festive *Conchological Quiz*. Hopefully I will have conjured up about fifty questions on a variety of topics covering marine & non-marine, past & present, specimens & people. With a bit of luck the Treasurer will come up with a prize or two.

The Quiz will take place before and during the tea break. This will then be followed by members' slides of recent holidays, field meetings etc. Do come along and enjoy some light-hearted pre-Christmas fun.

Saturday 18 January 1992: *Conchological Books, a Bookseller's perspective.*

We are delighted to welcome Mr Tony Swann of Wheldon & Wesley Ltd, Hitchin, Herts. Mr Swann is a director of this long-established company of booksellers who have recently celebrated their 150th anniversary. He has just returned from an extensive trip to Japan, Australia and New Zealand. Although he is a specialist in all natural history books, he does have a particular interest in conchology.

The subject for exhibition is conchological books and literature and it is hoped that all those attending will bring along something of interest.

PROGRAMME FOR 1992

The programme card will be sent out in approximately 6 weeks time, however, Members may like advance information on the dates of next years meetings:

Indoor meetings

Saturday, 18 January - Mr Tony Swann (Wheldon & Wesley)
Saturday, 15 February - Speaker to be announced
Saturday, 21 March - AGM, Mr Fred Woodward : Presidential address
Saturday, 11 April - Dr Andy McCarthy (Nat. Mus. of Wales)

Saturday, 16 & Sunday, 17 May - A symposium & workshop on Marine Recording. This will take place at the Glasgow Museum. The two morning sessions will be taken up with presentations and discussion on aspects of marine recording in Britain and the NE Atlantic. It is particularly hoped that most of the Sea Area representatives will be able to attend. The normal meeting with a guest speaker will take place on Saturday afternoon. A dinner will be arranged for the evening. We are also hoping to have a marine field meeting on Sunday afternoon. Full details of this meeting, including a booking form will appear in the March Newsletter.

Saturday, 17 October - Dr Robert Cameron (Univ. Birmingham)
Saturday, 21 November - Dr Martin Bell (University of NWales)
Saturday, 12 December - Dr Endre Sandor

Field Meetings

Saturday, 04 April - Land snails in Peak District woodlands
Saturday, 02 May - A mixture of freshwater and marine sites in north-east Kent
Saturday, 30 May - Limestone grassland faunas in the Peterborough area
Sunday, 21 June - Weymouth dredge
Thursday, 02 to Sunday, 05 July - Pembrokeshire, a variety of marine and terrestrial habitats
Saturday, 25 July - Wetlands in Wiltshire

Friday, 25 to Wednesday, 30 September - Scarborough area. The aim is to take advantage of the good spring tides to record a number of shores along this stretch of coast. There are also rich terrestrial sites in this part of Yorks

Saturday, 31 October - Land snails on the North Downs

Details of all these meetings will be published throughout the year in the Newsletter. Members requiring any further information should contact the Hon. Programme Secretary:
Ian Killeen, [REDACTED], Felixstowe, [REDACTED]
Tel: [REDACTED]

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ORKNEY SHELL NAMES & SHELL GAMES

The beaches in the Orkney Islands are a happy hunting ground for children (of all ages). When our bairns were small we all collected cattie buckies and silver willies, we tried digging for spoots, we found scaadman's heids and klankertonies, and specially we collected groatie buckies to put in granny's jam-jar on the mantlepiece.

Later we got to know a tremendous enthusiast, Robert Rendall, a Kirkwall business-man and self-taught conchologist. Robert was in the Navy in Scapa Flow at the same time as R. Winckworth was also there as a naval rating, during which time he did much useful dredging. But Robert did not meet Winckworth till he joined the Conchological Society in 1929. Their co-operation eventually led to the publication of Mollusca Orcadensia. And it was Robert Rendall's inspiration that really developed some of my own family into 'shelly people'.

Robert Rendall was a born Orcadian, and met many older Orcadians during his searches. He found out that many shells had old Orkney names, mostly of Norse origin, and some of these are still in common use today, although many were only known to the older generation, even in the 1930s. I don't think present-day Orcadians would understand culyick (Mactra solida), or husho (Mya arenaria), or rooklo (Patella aspera), or yog (Modiolus modiolus), though some of these names are still understood in Shetland (in a poem by Rhoda Butler in 1986).

Here are some of the Orkney names that are still commonly known:

buckie = periwinkle <u>Littorina littorea</u>	silver willie = grey top <u>Gibbula</u>
cattie buckie = dog whelk <u>Nucella lapillus</u>	<u>cineraria</u>
coo-shell = Iceland cyprina <u>Arctica islandica</u>	smerslin = blunt gaper <u>Mya</u>
groatie buckie = cowrie <u>Trivia</u> sp.	<u>truncata</u>
kaamshell = cuttlefish bone	spoot = razor <u>Ensis</u> sp.
queen's head = common top <u>Calliostoma ziz.</u>	tangy buckie = winkle <u>Littorina</u>
	<u>littoralis</u>

Some people believe that the 'groatie buckie' is so called after John o' Groats in Caithness, but it seems more likely that it refers to shape of the shell, looking like one groat, or grain of corn (barley). Which leads me to consider 'ebb maet' (spelling for local pronunciation!) That is meat (or food) taken from the ebb (or low tide). One only has to think of the hundreds and hundreds of thousands of limpet shells in the middens of the Stone-age people of Skara Brae to realise the importance of 'ebb meat' to Orcadians of former days. There is a bay on the Atlantic Coast where the rocks are covered in mussels, called Harra Ebb. This was where the men of the parish of Harray, which has no shore line, were permitted to come in times of famine and gather 'ebb meat'.

Oysters, too, were common until they were overfished and vanished about 1922 - landings in 1915 were 15,300 oysters. Rev. James Wallace wrote A Description of the Islands of Orkney in 1700, and says this of 'Ostreum vulgare maximum': 'The largest Oysters ever I see anywhere, are got in some places of this Country, and the fittest for pickling; I have seen them so large that they must be cut in two or three pieces before they can be eaten: But the people are so careless that they have in few places Drags to take them up as they do elsewhere, but for the most part at a great ebb, go in amongst the Rocks and cut them off with a Knife.'

'Going to the spoots' is still regarded as a good sport in Orkney, and when there is an extra low spring tide, people may be seen walking slowly backwards along the sand at low water with a bucket and a large kitchen knife, watching for the razor-fish to 'spoot', and then jabbing swiftly down to prevent it going down out of reach. To bring home a score of spoots and fry them in butter some people regard as a delicacy (I do), and others say you might as well eat stewed rubber tyres.

I mentioned the animal known as scaadman's heid, or scalded man's head, which is simply a sea-urchin. Here is Wallace again: 'Echinus marinus, orbicularis, esculentus'. The largest of this kind I ever see anywhere are in Orkney: I have seen several of them twenty or thirty inches in Circumference. The common people reckon the meat of the Sea Urchin or Ivegars as they call them a great Rarity, and use it oft instead of Butter.'

SHELL GAMES IN ORKNEY (Information from Robert Rendall)

Children once played on the beach at farms, the buildings represented by squares of beach stones, with shells representing the different animals. They had the coo, the sholt, langneb and moggie, gimmers and grice and craas; and no doubt others. Let us interpret for those poor folk in the south who don't understand plain language!

coo (cow) = <u>Cyprina islandica</u>	gimmer (young ewe) = <u>Chlamys</u> sp.
sholt (small horse) = <u>Gibbula magus</u>	grice (young pig) = <u>Mya truncata</u>
langneb (sheepdog) = <u>Colus gracilis</u>	craa (rook) = <u>Mytilus edulis</u>
moggie (cat) = <u>Nucella lapillus</u>	(which is black and wing-shaped)

In one form of the farm game, chuckie-stones, thrown up and caught on the back of the hand, were used as a sort of dice in moves described as 'putting the coos in the stall' and 'putting the pigs in the sty'.

In Norway similar games were played. There Chlamys sp. was the cock, Littorina littorea was the farm-dog, Mytilus edulis was the goat, Cardium edule was the sheep, and Cardium echinatum was the ram. This sort of children's farm game with shells is referred to in the Icelandic sagas.

There are references to other children's games in Norway, with shells representing different types of dogs, bears, elk and reindeer. They then played dog-fights and hunting scenes.

Oh, was I forgetting to tell you about klankertonies? Really, they are large orangey-brown jellyfish. But the word is also used for a good big scone with a large spoonful of rhubarb jam on it!

Alan Skene

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Robert Rendall: Orkney Shell Names & Shell Games (article)
Robert Rendall: Orkney Shore (Kirkwall 1960), who quotes a Norwegian article by Oscar Sund, and refers to Skallagrimson's saga
Gregor Lamb: Orkney Wordbook (Kirkwall 1988)

COLLECTORS IN EAST AFRICA - 15: EMIN PASHA

E.C.O.T. Schnitzer (Emin Pasha) (1840-1892)

Since Emin Pasha* was for one great expedition intimately connected with Stuhlmann (see Conchologists' Newsletter 106: 114 (1988)) it is appropriate to deal with him next. Emin was an important administrator and has become an historical figure. There are, therefore, innumerable references to him even in popular books on Africa (e.g. Moorehead, 1960) and only a brief summary need be given here; reference must be made to the works mentioned in the bibliography for more details. The epithet eminii or emini is met with several times in the study of African molluscs and other groups of animals and plants. The African legume genus Eminia Taubert was named in his honour. There is also an Eminia Hartlaub in the birds and seven with the specific or subspecific name emini. He was to become an important collector and sent many plant and animal specimens to various museums in Europe.

The oriental sounding name refers to one Eduard Carl Oscar Theodore Schnitzer, a methodical, precise German doctor who had travelled widely in the Middle East and had been in the Turkish Service. He is said to have become an admirer of the Moslem faith which he adopted and then changed his name to Emin 'The Faithful One'. A more likely explanation for his adoption of the name is that he could not function properly as a doctor in Turkey whilst evidence of his Frankish origin was obvious to all. It would have been more satisfactory to adopt the customs of Islam. He wrote to his sister from Trebizond in 1871 'Don't be afraid; I have only adopted the name, I have not become a Turk'. That he had not really given up the Christian faith seems clear from the encouragement he gave to the Church Missionary Society to establish mission stations in Equatoria, even offering to support a missionary party there at his own expense.

He was born at Oppeln on 28 March 1840 in the Prussian province of Silesia, the son of Ludwig Schnitzer, a merchant, and his wife Pauline, both Protestants (he was not a Jew as claimed by Stanley). In 1842 the family moved to Neisse where Eduard had his first schooling in the local gymnasium before going to Breslau University (now Wroclaw in Poland) to study medicine in 1858. His medical education was completed in Berlin during 1863-4. As was the case with Stuhlmann, Eduard had a love of natural history from boyhood and this, coupled with a strong desire to travel, led him to seek work in foreign lands. One of his major gifts was the ability to master languages and he eventually spoke German, French, English, Italian, Turkish, Arabic, Persian, demotic Greek, several Slavonic and doubtless several African languages. He left Berlin at the

*Pascha in German

end of 1864 and went to Turkey obtaining a post on the staff of the Vali Mushir Divitji Ismail Hakki Pasha who took him on extensive official journeys. In this way Eduard visited Armenia, Syria and Arabia, finally arriving in Constantinople (Istanbul, Stamboul, Byzantium) where Hakki Pasha died in 1873. Eduard returned to visit his family in Neisse in 1875, remaining there for a few months, but the urge to travel soon returned and he was off again, this time to Egypt where he entered government service and joined the Governor-General of the Sudan in Khartoum. From there he went as Chief Medical Officer to Equatoria where Gordon was Governor. Gordon soon recognised and valued Emin's great gifts and, when Gordon was appointed Governor-General of the whole of the Sudan in March 1878, Emin became Governor of Equatoria at a salary of £50 a month. Emin soon made Equatoria pay its way by selling ivory, coffee and cotton; a deficit became an annual profit of £8,000. Obviously like Gordon (who had refused a salary of £10,000 and stated that £2,000 was enough) he was a very honest man. Previous to that the province had been in the control of two Americans whose health had failed. Apart from his administrative and medical work Emin sent thousands of good specimens of plants and animals to museums in Europe with precise notes. He also wrote extensively to correspondents about native customs, languages, geology, etc.

Several letters in the Archives of the Keeper of Zoology, British Museum (Natural History) throw light on the actual details of collecting. An extract from a letter (1.31.155a) dated Wadelai, 15 April 1877, mentions 'another tin No. 4 contains butterflies and some Coleoptera from Wadelai, a very few shells from Albert Lake and two skulls of that big rodent I sent you in my first boxes. Another (1.33.77, copy) dated Turguru Island (Lake Albert), 31st. Oct. 1887 is a request for collecting materials. 'By Mohammed Biri who leaves tomorrow for Unyoro and Uganda I beg to forward to you bird skins are now powdered with red pepper instead of naphtaline (sic) Another lot of things are ready for you but I cannot send them for want of boxes. Be therefore pleased to send me some tin boxes and if the British Museum can afford it you should send me in the boxes some papers for butterflies cartoon (sic) boxes and pins for insects, little bottles and india rubber corks (stoppers) of different sizes and whatever other useful things you may think fit for me. I am in Central Africa and you in London, I need not tell you that every old paper or book should be most welcome. But more than all send me arseniate of soda (for bird skins). The day after tomorrow I start for the highlands of the western shore of this lake for a visit to my friends the chiefs of the A. Lindii (? sic) Country....'

Very interesting also is a letter in the Keeper of Zoology's Archives from the firm Boustead Ridley & Co., Zanzibar dated 5th. October 1888 to Prof. W.H. Flower (1.34.26). One might well wonder how letters and parcels were carried enormous distances through what everybody makes out was wildest Africa; even the most delicate of specimens arrived back in Europe and it seems that not much was lost either. The letter reads 'The two boxes of collecting materials for H.E. Emin Pasha were dispatched by us about a month ago in care of Mr. C. Stokes. We paid Mr. C. Stokes for carriage to Victoria Nyanza \$40 per box. There would be a small further charge for carriage across the lake to Buguda but conveyance from Buguda to Wadelai would be within the control of Emin Pasha. We trust there will be no difficulty in sending these loads from Buguda to Wadelai as by the latest advices from Buguda dated 28 January the King Mwanga appeared friendly to the European missionaries while the Arabs who have caused most mischief were in disgrace'. I do not know where Buguda was - it is probably a copyist's error for Buganda. This letter is at utter variance with Moorehead's description of the period. The appalling barbarian Mwanga murdered many missionaries and particularly their converts of whom he burnt 30 young ones to death in 1886. All

appears to have been chaos in 1888 yet doubtless Emin got his equipment.

It is clear from the obituary in 'The Ibis' that Emin's main interest in natural history was birds. Hartlaub, the famous ornithologist of Bremen, speaks highly of Emin's work in this field. 'The amount of work which Emin Pascha has performed in making zoological collections, observations and notes is astonishing in the highest degree'. This obituary includes a copy of a letter from Emin written from Wadelai, 13 April 1887 'in a very minute hand' to the editor of 'The Ibis' (Dr. Philip Lutley Sclater - the bird man at the time and for long after) in the most excellent English despite the remark 'I must, however, request your charity for my uncouth English; what I know of it I learned here'*). Sclater echoes Hartlaub's appreciation and described Emin as one of the most careful and observant naturalists who ever worked in Africa. There are two lots of bird skins from Emin in the British Museum collections all prepared to the highest standards, one lot of 342 from Wadelai (see Shelley in Proc. Zoo. Soc. 1888:17) and 28 from Mtoni about 5 miles inland from Bagamoyo on the R. Kyngani; also 145 mammals including the skeletons of two pygmies. Thirteen papers concerning his collections were published in various ornithological journals, etc.

Trouble soon started in the Sudan and Emin at first retreated up the Nile but managed to hold out in Equatoria until he decided to surrender in 1884 just before the fall of Khartoum to the Mahdi (Gordon was murdered on 26 January 1885). He changed his mind at the last moment and headed south to Wadelai with his garrison of 10,000 people where he later heard of Gordon's death long after it had happened. This man holding out in a little outpost began to stir the interest of Europe. Salisbury, the British Prime Minister, said it was up to the Germans to rescue him but despite lack of government interest a public Emin Relief Committee was set up and £20,000 was collected. Stanley was given charge of the relief expedition which was to prove a nightmare.

Stanley's expedition was more like an army setting out for military conquest than a rescue operation and, apart from finding Emin, he was under orders from King Leopold of the Belgians and also linked with many newspapers. The Relief Committee also saw trade possibilities in opening up the country from the coast to Uganda. Curiously enough Emin did not need rescuing but wanted to stay with his people and was only in need of military and political support, because his little settlement was never in the terrible position Gordon had been in. Stanley chose a ridiculous roundabout route by ship from Egypt to Zanzibar, then to West Africa and up the Congo River; one of the many reasons he gave was that the Zanzibar porters would not abscond, as they so often did, since they would be heading for home anyway! The expedition endured awful trials which have filled several large books, including the one Stanley was determined to write and had contemplated before the journey even started. In 1888 Emin went south to Lake Albert having heard that Stanley was coming and that a whole year had passed since the latter had left Zanzibar. He returned to Wadelai without news but actually had missed Stanley by only a few days. When the remnant of Stanley's party, mostly walking skeletons, arrived at Lake Albert, no-one was there and Stanley did not know if Emin was alive or not until later when Chief Kavalli

*A letter to the Keeper of Zoology from Lado, 5 September 1879 commencing 'Sehr geehrter Herr' and signed Dr. Emin Bey is in German and certainly in a very minute hand. There is another similar letter dated Lado, 15 January 1881. The first was taken to England by the Rev. Wilson. Doubtless these are in German because they were for Albert Günther who was a German rather than because he did not write English at that date.

produced a letter carefully protected by oiled cloth which Emin had left. A message was quickly sent and just over a week later Emin's steamer appeared on the horizon. Far from needing rescuing, Emin produced a three-year-old cigar which had been left behind by the German explorer Yuncker who had been the one to take news of Emin to Europe. Stanley was in stained, patched, shabby clothes and broken boots, whereas Emin was immaculate in perfectly-fitting white suiting and looked ten years younger than he actually was.

Emin and Stanley were even more different than Burton and Speke. Stanley had a contempt for scholars and scientific collecting; being Emin's opposite in almost every respect it was obvious they would not get along together. Stuhlmann has some very acid comparisons to make - there hardly exist, indeed, two more basically different characters than the selfless, scientifically minded and humble Emin and the egotistical, arrogant and unscientific Stanley; he explains Emin's character at length, not glossing over his faults, ending with 'Er war ein Mann, nehmt Alles nur in Allem'. When I first read about these two men I felt an instantaneous dislike for Stanley and a compassion for Emin. Emin rests in the knowledge that his scientific work will never be forgotten but Stanley's fame is like that of some politician. But it must not be forgotten that Stanley had experienced a nightmare journey (partly due to his stupid route); his explorations resulted in great hardship or death for his porters. He gives a much better impression, also, in a long 11-page letter he wrote home to J.A. Grant on 8 September 1888 from the 'village of Batemdu, Ituri River, Central Africa'. This contains a good deal about Emin but the only unpleasant references are to the 'dishonest incompetence' of Sir Samuel Baker when measuring the true extent of Lake Albert! (Sotheby, etc., 1979).

Emin wanted to stay in Wadelai as a sort of ruler and did not at all fancy a Stanley-type expedition to the coast with a 10,000-strong garrison, many of whom had settled. Stanley offered him two alternative posts which he presumably was authorised to do by the highest authorities; either Belgian Governor of an Equatoria attached to the Congo Free State or working for the British East Africa Company by the north eastern shores of Lake Victoria. The first was rejected as impracticable but he offered to consider the second. The Khedive of Egypt had given Stanley a letter to urge Emin to withdraw and pointing out that if he chose to stay in a sort of independence then he could expect no support from Egypt. Meanwhile Stanley returned to the Congo River to gather together the remnants of his expedition. He was horrified to find that in all the months which had passed they had progressed a mere 90 miles and, moreover, his madeira had been sent downstream for safety! The column was in tatters, its commander assassinated, most others dead, sick or absconded, the stores spoiled or looted. Stanley was in no mood for any more vacillation from Emin when they met again. Emin's followers, well aware of the awful things which had happened to Stanley's party, were no more in a mood for rescue than Emin and whilst Stanley was away Emin's Egyptian soldiers revolted and confined him. Arabs from the north demanded the surrender of the Egyptians and Emin was released and made his way again to Lake Albert. Half his garrison were loyal and half against him and all authority had disappeared. Emin's hand was forced and he could no longer prevaricate with Stanley who insisted that they start for the coast at once. This march is of course a story in itself with 600 of Emin's people and 1,000 of Stanley's porters carrying all the possessions of Emin's garrison. Relations between Emin and Stanley became impossible - Emin existed all day on a small cup of coffee and pored over scientific specimens at halts but Stanley liked luxury. He speaks of Emin wasting his time with his ridiculous collections, now ironically of course, all we have left of any importance from this expedition. Eventually in December 1889 they rode into Bagamoyo (the port from which tens of thousands of slaves had

been exported in the past, hence the name *baga moyo* 'to leave the heart behind') accompanied by a German expedition which had come to look for them near the coast. A party was thrown that evening for the two who were long thought to be dead and Stanley feasted himself on drink and delicacies. Emin, however, who was very short-sighted, fell from a balcony and cracked his skull. Stanley eventually returned to banquets, honorary degrees, public acclaim, entry to parliament and a knighthood. Emin recovered slowly and was honoured by universities and learned societies. He negotiated with both the British and German East Africa Companies and finally agreed to lead a German expedition into the interior. The British were bitter about this after having put up the money to rescue him but Stanley had cured him of *Angliophilia*. He even ignored an invitation from Queen Victoria. It is clear that his star waned in Britain, since the *Ibis* obituary contains the following statement: 'He was, as has now been plainly shown by the latter part of his life, although possessed of many excellent qualities, no such great hero morally or perhaps even intellectually as was once supposed. But he was a first rate collector and naturalist, and must, as such attract our sympathies'. This is an extraordinary statement for an obituary in a scientific journal and must reflect the feeling against him at the time doubtless mainly stirred up by the wretched Stanley.

In April 1890 (as I have already related in my account of Stuhlmann) Emin was ready to leave with Stuhlmann and others under his command. The real object was to seize the sources of the Nile and Uganda before the British could get there, but it was too late - Uganda had already been allotted to the British sphere of influence and although a protectorate and never a colony it remained firmly British until independence in 1962. Nevertheless, Emin continued with his plans and finally reached Lake Albert where he met some of his old surviving soldiers; then pressed on into the Congo. Smallpox broke out in his camp and he ordered Stuhlmann back to the coast to save the healthy members of the expedition and also I suspect (although I have not found this suggested anywhere) to ensure that the very extensive scientific collections had the best chance of arriving in Europe. Emin went on and was murdered by a group of Arab slavers about 80 miles south of Stanley Falls, at Seyd Bin Abed's station on a branch of the Congo River in Manyema country. Another account (Prestwich, 1963: 31) gives Kinena, 100 miles E. of the Stanley Falls as the place of his death. He was 52. Although totally unlike Burton psychologically he shared his intelligence and deep knowledge; both were deeply interested in the country and its peoples apart from just exploring. Emin was more of a natural historian (Burton collected very little) and particularly interested in botany and ornithology; it is clear that he did not know much about molluscan systematics. In his journal (see Felkin, 1888: 379) he mentions 'Hundreds of black *Clausilia*-like univalve shells of two species were lying upon the moss which covered the rocks in Khor Asa; curiously enough, all of them had lost the point of the spiral and although I examined more than two hundred, I was unable to obtain a single perfect specimen'. It is clear that these were *Cleopatra bulimoides* and *C. pirothi* or allied; decollation is normal in some species of this genus.

Emin was apparently never formally married. The aged Hakki Pasha he at first worked for had a young and pretty wife who made a set at Emin after her husband died. Emin took her to visit his parents but she was too used to a grand retinue and Emin found all this too much and fled leaving her with his parents. This woman actually claimed Emin's estate after his death but it went entirely to his half-caste daughter Ferida. When Stuhlmann parted from Emin the latter's parting words were 'Hopefully we'll meet in one month! If I, detained by force, should not come, think of my child'. Knowing Stuhlmann's character we can be sure he did something.

But the last word about this remarkable man has to be the story told by Alan Moorehead when he returned to Uganda and the Sudan to try to find the places connected with Emin's history. It was near the site of Wadelai, Emin's capital of Equatoria, and even in 1960 almost unfindable (although plainly marked on a Shell road map of 1965), that a native jumped up in front of his truck and cried 'Emin Pasha!' Despite the passage of almost three quarters of a century the name had remained in the memory of his family and the assumption that another white man could only be associated with him. I am sure this memory would have been more treasured by Emin than all the mass of literature surrounding his name.

List of molluscs described from material collected by Dr. Emin Pasha in Zaire, Uganda and Tanzania*.

Material collected by Emin in the company of Stuhlmann has already been dealt with (see Conchologists' Newsletter 109: 181 (1989)), namely Buliminus trichrous, Cyclostoma letourneuxi var. stuhlmanni, Helicarion stuhlmanni, Isidora strigosa, Lanistes ovum var. plicosus, Limicolaria nilotica var. emini, Mutela bourquignati var. smithi, Mutela nilotica var. emini, Opeas streptosteloides, Spatha divaricata, Spatha stuhlmanni, Spatha trapezia, Spatha trapezia var. senilis, Spatha wahlbergi var. dorsalis, Thapsia hanningtoni var. fasciata, Helix bellula. One species was omitted in error from the Stuhlmann list, namely Unio emini von Mts., 1897. Tanzania, Lake Victoria, Speke Gulf, Simin R. near Massansa and Busisi (syntypes). Caelatura hauttecouri emini (von Mts.).

Bithynia stanleyi E.A.Sm. var. humerosa von Mts., 1879. Tanzania, SW. shore of Lake Victoria**. (Emin) (syntypes, B). Gabiella humerosa (von Mts.)

Bulimus (Cerastus) emini E.A.Sm., 1890. Tanzania, Mkata (Hkata) and Kidete***. (Emin) (syntypes, BM, 1890. 7.16.56-65). Pseudoglessula emini (E.A.Sm.)

* There are two entries in the British Museum (Nat. Hist.) Mollusca Department accessions book, the first 87.9.30 details 29 specimens from Lake Albert and the second 90.7.16, 184 specimens from Ugogo and elsewhere including numerous specimens of Tropidophora. Cleopatra emini E.A.Sm. (1888), Hyalinia emini E.A.Sm. (1890), Limicolaria nilotica var. emini von Mts. (1891) and Subulina emini E.A.Sm. (1890) are eponymous only and the types were not collected by Emin.

** There is something wrong here! In 1877 Emin certainly visited King Mtesa of Uganda and was near the top end of the Victoria Nyanza but he definitely did not go at that time to the SW. end of the lake which would now be in Tanzania, virtually unknown territory then. Juncker was with him part of the time and took some material back to Germany for him. Schweitzer (vol. 1: 59) mentions that Emin recorded 'Mufta Dallington came and brought the (somewhat scanty) meteorological observations which had been promised by Rev. Wilson (C.T. Wilson, many of whose plant specimens are at Kew). He sent me a few seeds and a few land shells and a pipe from Usukuma'. Usukuma is, however, SE. not SW. This problem may never be resolved. Doubtless von Martens records all the data he was given on the labels.

*** Original label gives Htoni Hiranza 22.10.89. These original labels (if such they are) are in a big pencilled script very different from the minute writing of his letters.

Bulimus (Cerastus) kidetensis E.A.Sm., 1890. Tanzania, Kidete* (Emin), 50 miles from Mamboia (Last) (syntypes BM, 1890. 7.16 84-92). Pseudoglessula kidetensis (E.A.Sm.)

Ennea aequidentata E.A.Sm., 1890. Tanzania, Mkata (Hkatu) (Emin) (holotype, BM, 90.7.16.128) Gulella aequidentata (E.A.Sm.)

Ennea consanguinea E.A.Sm., 1890. Tanzania, Usagara, Kidete (Emin), Mamboia (Last) (syntypes BM, 90.7.16. 130-7 & BM, 85.5.25, 107-8). Gulella consanguinea (E.A.Sm.)

Ennea consociata E.A.Sm., 1890. Tanzania, Usagara, Kidete (Emin) (holotype, BM, 90.7.16. 129). Gulella consociata (E.A.Sm.)

Limicolaria turriiformis von Mts., 1895, var. solida von Mts. SW bank of Lake Victoria (Emin in 1877**), Uganda, Entebbe (Neumann) (syntypes). Limicolaria turriiformis von Mts.

Paludina rubicunda von Mts., 1879. Tanzania, SW bank of Lake Victoria (Emin in 1877**) (syntypes ZMB 31165 & BM). Bellamya rubicunda (von Mts.)***

NOTE: This name is now habitually used for a species restricted to Lake Albert and nearby parts of the R. Nile. Von Martens added this locality to the type locality in his Beschalte Weichethiere: 179, mentioning that it had been collected there by Emin and Stuhlmann on 26 and 27 Nov. 1891, also by Samuel Baker and General Gordon.

Planorbis choanomphalus von Mts., 1879. ?SW bank of Lake Victoria (Emin & Juncker in 1877**) (holotype, ZMB Moll. 31 177 (see Kiliass, 1967, 152, fig. 2)). Biomphalaria choanomphala (von Mts.)

Subulina usagarica E.A.Sm., 1890. Tanzania, Usagara (Hannington), Kidete (Emin) (syntypes, BM, 1890. 7.16.121-126). Subulona usagarica (E.A.Sm.)

* Original label gives Kidete 15.11.89

** See footnote on page 444

*** There is a difficult problem here which Mandahl Barth realised in 1954. The species always known by the specific name rubicunda occurs only in Lake Albert and nearby where I have seen it in vast numbers at Butiaba. The type locality of Paludina rubicunda is, however, the SW shore of Lake Victoria. Unless Emin made a mix-up of localities the name rubicunda must actually refer to a species other than the common Lake Albert one but endless confusion would be caused by the change. Neither Mandahl Barth nor Brown appear to have visited Berlin when revising the freshwater fauna and regrettably I seem to have made no notes when I examined material in East Berlin in 1958. It seemed that an investigation of the original material was essential and through the kindness of Prof. R. Kiliass I have been able to examine the original material and I am convinced a mix-up of localities was made since it agrees in every way with the Lake Albert species. I later found a syntype in the general collection of the British Museum which is an exact match of material collected in Lake Albert by General C.G. Gordon.

ACKNOWLEDGEMENTS

I am grateful to Mrs. Carol Gokce, Deputy Librarian, Dept. Zoology, British Museum (Nat. Hist.) for drawing my attention to several references which had escaped me and answering my request for information on any correspondence held in the BM archives, to John Thackray, Archivist, for allowing me to examine these archives and to Dr. W.T. Stearn for lending me A.J.A. Symons's Essays; also to the library staff at The Royal Botanic Gardens, Kew for arranging to have some pages of Stuhlmann's book translated.

Prof. R. Kiliyas kindly sent specimens on loan from the Zoological Museum in Berlin and Dr. Peter Mordan gave me access to Emin's specimens in the type collections of the Molluscan section at the British Museum (Nat. Hist.).

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*Based on a paper given by Symons to 'Ye Sette of Odd Volumes' which was an exclusive dining club, founded in 1878 by the bookseller Bernard Quaritch and the printer Charles Wyman.

POSTSCRIPT

Since writing the above an article by Richard Dowden appeared in 'The Independent' Weekend for Saturday 29 December 1990 entitled 'When Stanley presumed too much'. Despite Stanley being a newspaper correspondent himself Dowden decided that of the two men Emin had more to offer Africa. Also I have read the 'Autobiography of Sir Henry Morton Stanley, G.C.B., etc., London: Sampson Low, Marston and Co. Ltd., undated. Stanley left his autobiography unfinished and it was edited and completed by his obviously devoted wife Dorothy. When one reads of his simply appalling life as a child in the workhouse after being abandoned by his mother, his dreadful treatment on board ship as a cabin-boy, the horrors of being caught up in the American Civil War and the unimaginable rigours of African Exploration one wonders how on earth he survived. From workhouse to G.C.B., D.C.L. (Oxford and Durham), LL.D. (Cambridge and Edinburgh) and a host of geographical honours is a great feat; he was a God-fearing man keen on doing his duty but he had no real love for Africa, it was something to fight against. His circumnavigation of Lake Tanganyika and Lake Albert and proving that the Lualaba ran into the Congo and not the Nile were major geographical events. His essential devotion to those who had been loyal to him is nowhere better shown than when, after the awful journey to the mouth of the Congo he personally returned with the surviving porters and other expedition members round the Cape to Zanzibar. During all his extensive travels I have never heard that he showed any interest in the flora and fauna from a scientific point of view although he did write in his notebooks 'If he is a true lover of wild Nature, where can he view her under so many aspects as in the centre of Africa?'. He could even write after a few months back in the pressures of Europe 'I had been too severe in my condemnation of the Forest. I began to regret its cool shade, its abundant streams, its solitude --'.

Stanley offers an explanation for Emin's murder. Some months after their return to the coast, Emin, who had gone off on his own, became embroiled with an Arab caravan and wanted to buy their goods. The four Arabs declined, whereupon Emin trumped up a charge of slavery against them, seized their goods and had them drowned in Lake Victoria. When news of this reached Berlin the Germans too tired of him and he was recalled but was already on his way into British Territory on his last expedition. The Arab who eventually ordered his murder, Said-bin-Abed was a relative of one of the drowned Arabs. Manning's more likely account is that Emin rescued some slaves and handed over their Arab masters to the natives who executed them with great cruelty. That the Arabic-speaking supposedly

Mohammedan Emin should have done this, ensured retribution when he was so close.

B. Verdcourt

A SNAIL ON COINS - THE SACRED CHANK (TURBINELLA PYRUM)

There are few tropical countries proud of their marine life that have not produced a pretty set of shell stamps, but in only a few cases have snails made their appearance on their coins. One reason for this absence, no doubt, is that the colourful shells serve as an attractive tourist advertisement, whilst the mint-masters of the world regard their coins as national representatives and therefore dignify them with royal portraits, royal beasts and any other symbol of religious or national significance. Among the few molluscan representations on coinage (Seychelles, Bahamas) the sacred chank of India - Turbinella pyrum - takes place of pride, because its use as a mint mark can be traced back through hundreds of years and over a large region of South-East Asia.

The former Indian State of Travancore in South India, was ruled by a very orthodox Hindu dynasty. Indeed, the last but one Maharaja was so strict in his observances that he would not allow his guests the Maharaja and Maharani of Baroda to visit the local temples as their Highnesses had "lost caste" by going across the "Black Water" to Europe! He was also reported to shake hands with Europeans "gloves on" only; anyway, he had to take a purifying bath every time he had shaken hands with a white man (for instance, the Viceroy was unavoidable)... His son, the last ruling prince, though less rigid than his father, still never dined with non-Hindus.

It all started with Rajah Martanda Varma who, after subduing all neighbouring chiefs, dedicated himself to the patron god of his line, and thus raised his status from a mere Ruler to Vice-regent of deity. The patron god was Padmanabha, or Vishnu, whose symbol is the sacred conch - Turbinella pyrum. It could be seen in a stylised form on the reverse of the Travancore coins until the merger into the Indian Union in 1947.



c. 1910



1938

The chank, or conch, has been Vishnu's battle trumpet since dimmest antiquity and as such a symbol of divine power, victory and a bearer of good luck. The belief in its magic value was so strong that the Buddhists adopted it as the trumpet of victory of "The Law" as preached by the Buddha but ignoring its former divine connection. Most Buddhist temples and shrines from Tibet in the

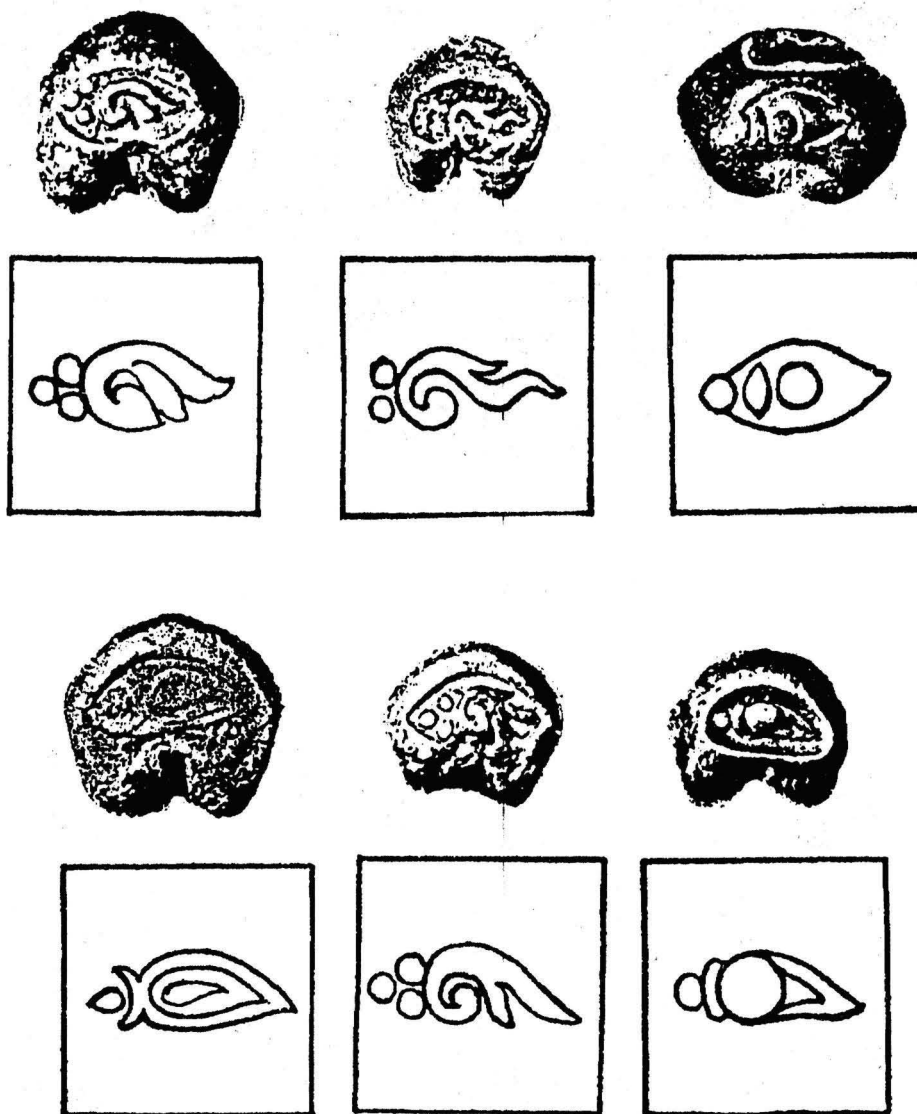
north to Sri Lanka in the south and Thailand in the east will own a conch trumpet as part of the altar paraphernalia, sometimes beautifully covered in silver or gold. It is therefore not surprising that this auspicious symbol should also appear on the coins of Tibet, Bhutan and Thailand:



The Bhutanese then took also the next logical step and put the conch on their paper money in a most decorative fashion:



In Thailand the history of coinage is rather peculiar in that no "flat" coins existed until their introduction in 1860. Lumps of silver in various shapes (flower money, leaf or line money, horse-hoof, pig-mouth, bar money, etc.). The most widespread of all was the bullet coin, a piece of silver bar bent until both ends met which gave it the appearance of a "bullet". These lumps of silver were made in several weights and duly marked with two stamps most probably indicating the mint and the king. Little is known about the significance of these marks before 1786, except that bullet coins were most likely introduced about 1250 A.D. The mint marks are therefore spread over 500 years going back to the 13th. century. Among the numerous marks that have been recorded is not surprisingly also the chank or conch. This appears in many variations from almost natural to strongly stylised forms:

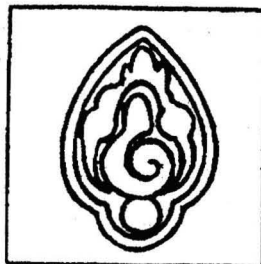


"Bullet coins" with chank mint marks

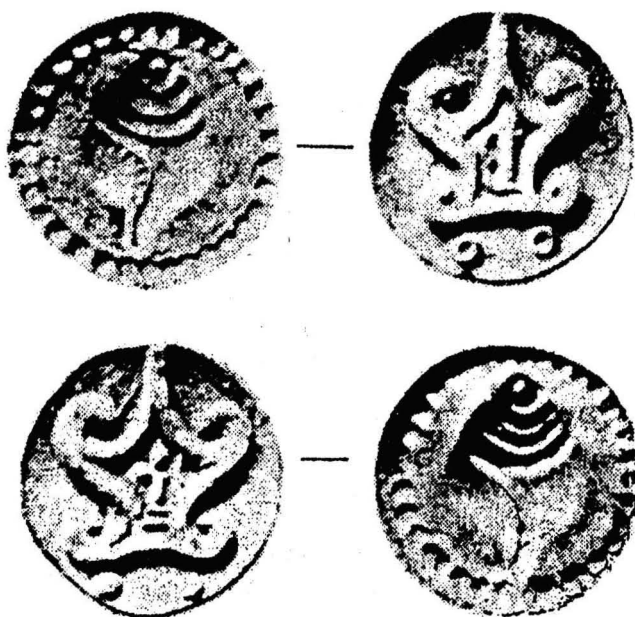
The story goes that in 1786 King P'hra Buddha Yoh Fa (1782-1809) was presented on some auspicious occasion with a magnificent conch-shell (Sang Kanok) mounted in gold; the King was so pleased with it that he at once adopted it as

his personal mark and ordered it to be stamped on his bullet coins forthwith. This particular stamp is called an UNALOM, a sacred mark sometimes found on the forehead of an image of the Buddha. It takes the form of a conch-shell set up vertically on its apex. This mark is popularly known as Kra Bua, or lotus mark on account of the shape of the frame - a closed-up lotus flower:

an Unalom



Finally, two ancient coins whose date and provenance are uncertain. Though found in Thailand, they most likely originated in Aracan, now Burma, and belong to the first centuries A.D. They resemble so much some Indian coins of that period that it has been suggested that they were minted in India:



Fred Pinn

CLACHAN SOUND REVISITED

Clachan Sound, on the west coast of Scotland, was investigated in 1985 and

found to be a very rich habitat for all manner of marine flora and fauna (Conchologists' Newsletter 95 316 (1985); also see map). Emphasis was on mollusca, and a number of species not normally recorded by shore workers were found living. The gravel in the middle of Clachan Sound was particularly rich in bivalves. A second trip in 1986 found the area to be just as rich, and a number of additions were made to the checklist. When the area was revisited in the Spring of 1990, dramatic and drastic changes were immediately apparent. There was much less algal cover over the whole length of the channel, the mid-section being particularly poor. The water was muddy with a suspension of slate dust, which also badly affected the bottom. This was most noticeable at the north end. Species suffering a decline included Skeneopsis planorbis and Rissoella globularis. The normal pink form of Calliostoma zizyphinum appeared to be absent from the north end of the Sound (23% of the total specimens in 1985), although it was common at a site close to the Sound. The white form lyonsii seemed to be unaffected.

The area was revisited in the autumn in order to try and find a reason for the change. The south end (by the bridge) was somewhat cleaner than it had been. The middle stretch, especially among the shallower water gravels and the weeds (again much reduced), was markedly affected by the inflow of fresh water run-off. There has been very much wetter and warmer weather over the last two years than heretofore. The north end was less murky than in June, but there was a considerable amount of loose and dead weed. The investigation on 21.9.90 was immediately after a period (even by local standards) of torrential rain and NW gales. At the middle and north ends, there was a layer of fresh water over the salt, even in current areas.

A further investigation took place in August 1991. The summer has been much drier, and although the present weather was rather wet, this did not appear to be having a marked effect. It was immediately apparent that most of the algae had recovered and was healthy. At the south end, there was not much small algae, chiefly Cladophora and Macrocarpus, but weed was present in the middle and building up nicely on the gravel. The south end was clean, the midsection fairly clean with far less mud than in 1990. The north end showed the biggest changes, and was nearly back to 1985-86 standard. There has been a natural variation in the more adventitious species of mollusc, and indeed several additional species were found in 1991. The chief species now missing are the gravel bivalves, most of which are not normally found in such inshore water. It is likely that although the gravel may support them satisfactorily, they do not spawn in this area. Only one specimen of the pink form of Calliostoma zizyphinum was found in the whole Sound, although there were the usual populations of lyonsii.

81 living species, out of a current total of 121 species were found in the channel in 1991, against 95 in 1985; 76 in 1986 and 59 in 1990.

Comparison of weed washings 1985/1990/1991 must bear in mind that the latter figures are for the autumn, when one would expect a considerable increase in both numbers of species and individuals over figures for spring and summer. For Fucus serratus, there appears to have been a decrease in mollusc content, except at the north end, between 1985 and 1990, and an increase throughout between 1990 and 1991, this year being particularly good. For small algae, there was a distinct decrease in the diversity, but not in the number of species between 1985 and 1990. This was possibly more marked at the south end than in the middle and at the north, if the number of species represented by a single individual are removed from the calculations. The 1991 sample at the south end was very small, and cannot be considered comparable. Otherwise, 1991 shows some improvement,

especially in the mid-section, not so much at the north end.

It appears to be important to maintain a watch on the mollusca of Clachan Sound with a view to obtaining data on longer-term trends in the population, and in order to compare this with data obtained by other studies.

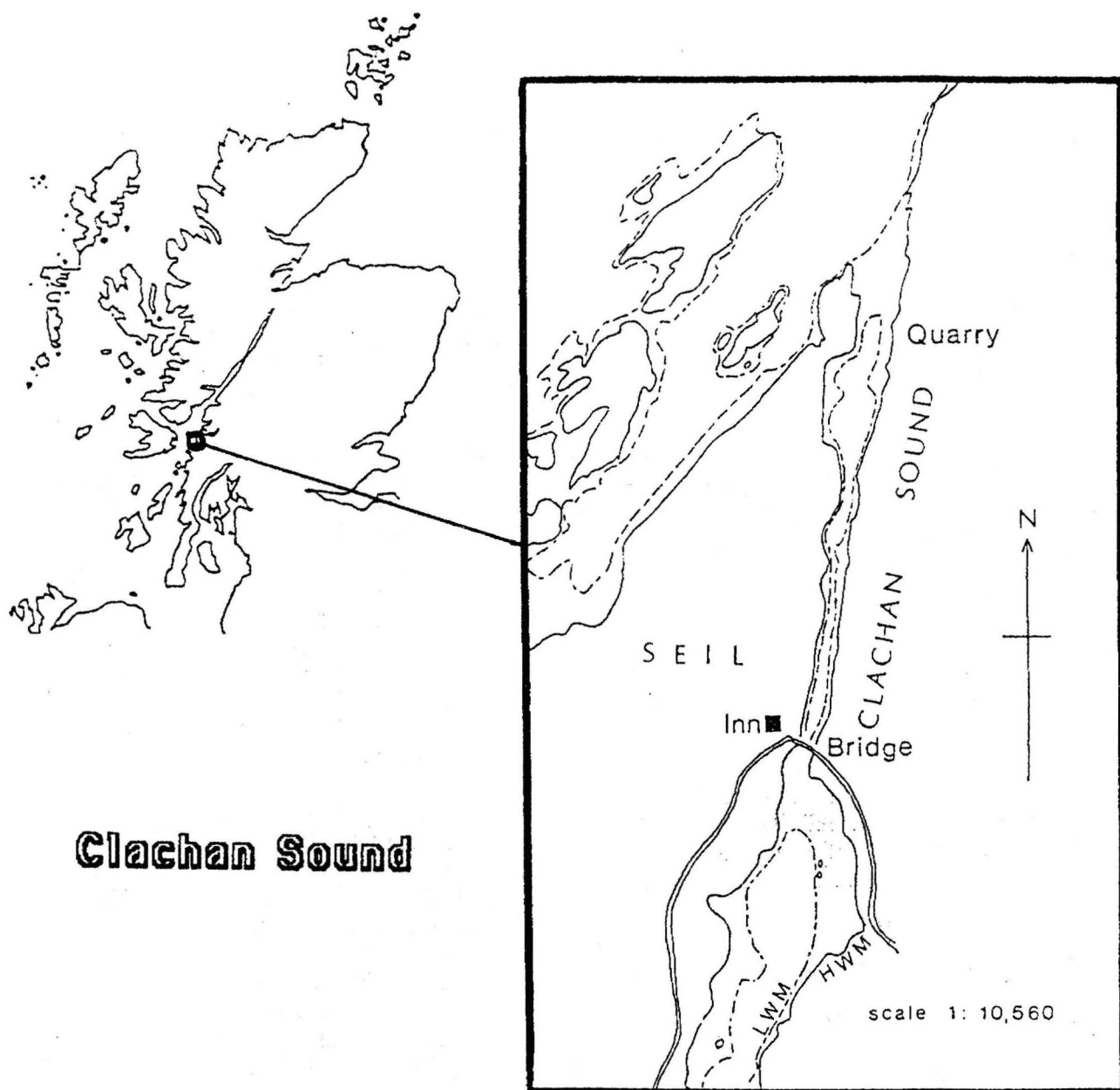
Live species at Clachan Sound

*species not seen in 1990

Leptochiton asellus, Callochiton septemvalvis*, Ischnochiton albus, Lepidochitona cinereus, Tonicella rubra*, Acanthochitona crinitus, Emarginula fissura*, Diodora graeca*, Tectura testudinalis, Tectura virginea, Patella ulyssiponensis, Patella vulgata, Helcion pellucidum, Margarites helicinus*, Gibbula cineraria, Gibbula umbilicalis, Calliostoma zizyphinum, Dikoleps nitens, Skenea serpuloides*, Tricolia pullus*, Lacuna crassior, Lacuna pallidula, Lacuna parva, Lacuna vineta, Littorina littorea, Littorina neritoides, Littorina mariae, Littorina obtusata, Littorina neglecta, Littorina nigrolineata, Littorina saxatilis, Skeneopsis planorbis, Bittium reticulatum*, Rissoa interrupta, Rissoa parva, Rissoa rufilabrum*, Pusillina inconspicua*, Pusillina sarsii*, Alvania beanii, Alvania punctura*, Alvania semistriata*, Onoba semicostata, Cingula trifasciata, Hydrobia ulvae, Lamellaria perspicua, Boreotrophon truncatus, Ocenebra erinacea, Nucella lapillus, Buccinum undatum, Omalogyra atomus*, Ammonicerina rota*, Rissoella diaphana, Rissoella globularis*, Rissoella opalina, Odostomia turrita, Odostomia plicata, Odostomia unidentata, Partulida spiralis*, Brachystomia albella*, Brachystomia rissoides*, Jordaniella nivosa, Retusa truncatula*, Elysia viridis*, Placida dendritica*, Limapontia senestra*, Berthella plumula, Doto coronata, Palio dubia, Goniodoris castanea, Goniodoris nodosa*, Onchidoris bilamellata*, Onchidoris muricata*, Acanthodoris pilosa*, Adalaria proxima*, Cadlina laevis, Archidoris pseudoargus, Jorunna tomentosa, Eubranchus pallidus, Flabellina pedata, Cuthona foliata*, Favorinus branchialis, Facelina bostoniensis*, Leucophytia budentata, Ovatella myosotis, Nucula nucleus, Glycymeris glycymeris*, Mytilus edulis, Modiolus modiolus*, Modiolula phaseolina, Crenella decussata, Musculus discors, Modiolarca tumida*, Limatula subauriculata*, Chlamys distorta*, Chlamys varia, C. varia nivea, Pecten maximus*, Aequipecten opercularis, Palliolum tigerinum*, Anomia ephippium*, Pododesmus patelliformis, Heteranomia squamula, Lucinoma borealis*, Kellia suborbicularis, Lasaea rubra, Mysella bidentata, Turtonia minuta, Astarte sulcata, Tridonta elliptica, Parvicardium exiguum*, Parvicardium scabrum, Cerastoderma edule*, Abra alba, Gari tellinella, Scrobicularia plana, Circomphalus casina*, Clausinella fasciata*, Timoclea ovata, Tapes rhomboides*, Venerupis senegalensis, Dosinia exoleta, Mya truncata, Hiatella arctica, Thracia distorta, Thracia villosiuscula.

Note: the reported bright yellow form of Calliostoma zizyphinum was a surface-stained specimen of the white form lyonsii.

Shelagh Smith and Julia Nunn



Clachan Sound

SNAILS USED AS AN OFFICIAL GREETING

Marjorie Fogan's recent address 'Mollusca in Fiction' (*J. Conch.* 34:1-6 (1991)) prompts me to mention an episode in C.S. Jarvis' 'The Back Garden of Allah' London, John Murray 1939 and reprinted seven times until 1946. This is a hilarious book about officials in Egypt in the days of Empire. In this episode the civil and military officials at a desert station had the Director-General and his wife down for the Christmas Holidays and arranged a trek in the desert and left the organisation of it to a native Regimental Sergeant-Major.

"The first post we came to on our road was Aneiza and they had had due warn-

ing of our arrival. The trouble was that they had had too much warning, and had as the result rather overdone things. With the best possible intentions, and at the telephonic instigation of Sol Mustapha, the men had collected those small white snails that crowd so thickly on every patch of scrub in the desert and had arranged a pattern of them in front of the post to read, "Yehia el Mudir!" ("Long live the Director-General!").

Unfortunately these snails, that appear to be dead, or at any rate moribund on their chosen surroundings, become exceedingly annoyed and lively when transferred to another place. The result of this was that there was only a corporal and one man on guard to present arms, the remaining five of the post being actively engaged in retrieving absconding members of the lettering and replacing them more or less in their correct positions.

The Director-General, who had been unable to read the flattering paeon of welcome owing to the fact that the word "Mudir" was retiring in broken formation, was of the opinion that the members of the post might have been better employed on the guard of honour than in collecting snails for a French side-dish."

The United States Board on Geographic Names Gazetteer No. 45 gives a Wadi 'Aneiza at 29°20'N., 33°18'E. in the extreme south-west of North Sinai (= Wadi 'Unayzah).

Henk Mienis tells me that the most likely species to have been involved is Eremina desertorum kobelti (Westerlund, 1889).

Bernard Verdcourt

SITES OF NATURE CONSERVATION IMPORTANCE

(A brief review of a new type of conservation designation being adopted by some local authorities. One such scheme being introduced in West Sussex, is examined in more detail)

Until fairly recently the conservation of natural habitats has been achieved in a variety of ways including:

- (a) the designation of Sites of Special Scientific Interest by the Nature Conservancy Council (now English Nature),
- (b) the establishment of National Nature Reserves,
- (c) in reserves or areas run by independent organisations such as the County Trusts of The Royal Society for Nature Conservation; the R.S.P.B., The Woodland Trust and The National Trust,
- (d) rather unclear protection, chiefly by management agreements with land-owners in "special areas" like national parks,
- and (e) the planning and land management policies of various local authorities.

Unfortunately these various protective designations exclude many important wildlife sites, so that many valuable habitats are left with no formal protection or recognition. As a result of this deficiency a number of local authorities have devised schemes to identify and register sites (in both rural and urban areas) on account of their floral and faunal interest. Such sites include all

major habitat types such as woodland, calcareous and neutral grassland, heathland, wetland, ponds and lakes, water courses and coastal habitats.

At present at least eight local authorities are in the process of operating or setting up such schemes. Disappointingly there seems to be little co-ordination or standardisation between them with regard to names, selection criteria, publication details and the notification procedure to owners/occupiers. The local authorities include, together with brief details about their schemes: (a) Kent (Sites of Nature Conservation Interest - S.N.C.I. - 470 sites with two levels of site grading); (b) Hampshire (Countryside Heritage Sites - C.H.S. - 250 sites with no site grading); (c) Shropshire (Prime Sites - ? sites, no site grading); (d) Greater Manchester (Sites of Biological Importance, 250 sites with 3 levels of site grading) (e) West Midlands (Sites of Importance for Nature Conservation - S.I.N.C. - 220 sites with grading now abolished); (f) Derbyshire (Biological sites, 1800 sites graded at 3 levels); (g) Norfolk ('C' sites, 1800 sites grading system unknown) and (h) West Sussex (Sites of Nature Conservation Importance - S.N.C.I. - no grading - initial listing expected in May/June 1992).

In the West Sussex S.N.C.I. scheme (which is jointly funded by the County Council, English Nature, the Sussex Wildlife Trust and The World Wide Fund for Nature) site information is gathered by a small team of ecologists. Site studies are based upon aerial photographs, and details of existing survey information together with site suggestions made by amateur and professional naturalists. Sites will be assessed by a panel of professional ecologists representing the various funding bodies and criteria for selection will closely mirror those used for the selection of S.S.S.I's to include size, diversity, naturalness, rarity, fragility, typicalness, recorded history as well as intrinsic appeal.

The introduction of such schemes is not without criticism. Some argue that the designation of S.N.C.I's put other areas at greater risk of development as, by implication, they believe, if an area is not given this designation then developers might suggest that it has no conservation value. The West Sussex organisers claim that the S.N.C.I. scheme in no way diminishes the importance of other areas of semi-natural habitat in the county, all of which are important for wildlife. In order that valuable sites do not fail to get S.N.C.I. recognition, the West Sussex team are systematically obtaining data for as much of the remaining areas of semi-natural habitat as possible.

Clearly much depends upon the quality, thoroughness and accuracy of S.N.C.I. surveys, together with the subtlety of the assessment criteria. Within West Sussex, although many of the best habitats lie within S.S.S.I's, there are many valuable areas of woodland, wetland and grassland containing molluscan populations typical of old unimproved habitats. With the present difficulties in getting new sites, particularly smaller ones, scheduled as new or extended S.S.S.I's, the S.N.C.I. scheme does (if carefully administered to take note of as wide a range of "good habitat indicator organisms") seem to offer a degree of protection and recognition to many valuable sites that might otherwise be subject to harmful land use changes. In West Sussex it is pleasing to note that, like S.S.S.I's, consideration of S.N.C.I's will become part of the planning machinery.

The West Sussex S.N.C.I. scheme appears to be providing other "spin off" benefits. Firstly it has stimulated many people to examine their fieldwork records and transfer otherwise "hidden" site information to a central bank, where data covering widely differing groups (e.g. bryophytes, molluscs, insects) has been brought together. Secondly it has encouraged an examination of many areas of habitat that might otherwise have been ignored. It may also be acting, to

make at least some land owners aware, that many areas of the wider countryside, with no formal conservation recognition, nevertheless harbour valuable wildlife communities worthy of consideration when land use options are being considered.

Members of the Conchological Society living in, or with a known interest in W. Sussex, have already been contacted and invited to forward details of any sites (not S.S.S.I.'s) that they believe may deserve S.N.C.I. status. If however you have not been approached but wish to suggest any W. Sussex habitats for consideration then please contact - Graham Roberts, Assistant Ecologist, Planning Department, West Sussex County Council, Tower Street, Chichester, PO19 1RL.

Thanks are due to Graham Roberts and Marion Finch, (both of the West Sussex S.N.C.I. team) for valuable discussions and for supplying information. I also thank Eric Philp and Barry Colville for forwarding information and opinions.

Martin J. Willing, 11/91

HILDEGARD ZEISSLER: COLLECTING ADVENTURES II

As the northern surroundings of Weimar proved dangerous at times, I preferred to collect at the opposite end. On the right side of the Ilm Valley stream up there were the quarries of Taubach but most time they were inaccessible - houses built on them. On the right side of that valley there are Ehringsdorf with its quarries - those still working, with some innokrenes called "Kipperquellen", the forest "Burgholz", then Belvedere Park and the forest "Hainholz", separated from the park by a small valley with an inconstant rivulet Possenbach". There was still a tributary to that brook in the Hainholz that came from a system of "petrifying wells".

These small springs interested me in a special way, as I there could see how calcareous tufa originates. On that topic I was writing an examination paper for the degree of a "Diplombiologe", as I was a scholar of Prof. Arno Wetzel, the hydrobiologist. He was interested just in my wells, for his other scholars worked only on polluted waters. To get the whole hydrobiology of the system, I worked in 1958 there each week for an afternoon, collecting, measuring, taking down data. One of the results of even that research is the experience that Pisidium personatum is able to survive for months in wet soil without any running water.

One afternoon in summer I had had a lot of things to collect, and it became rather late. When I finished, it was already darkening, and so I made up my mind, not to choose the direct way home through the forest and Park, but to leave the woodland and take a longer way through the fields to the next highroad. When I just was leaving the forest, a black silhouette of a big strong man emerged out of a shrub, only in a distance of a few meters. I stood there alarmed for a minute. I saw that he turned to me and said anything, but was too frightened to listen, I ran and ran After a while I looked back and saw that nobody was following. But still I hastened to get home.

Some days after Mr. Kaufmann, who was appointed by the Museum but working in the Quarries of Ehringsdorf, came into my working room. He said: "Mr. Urban

greeted you. And I must tell you that, if you meet him in the wood, you must not run away, as he never will do you any harm." Mr. Urban was well known to me, the blasting expert and foreman in the quarry Fischer, very kind and helpful, very interested in our work and in science generally. But I had not recognised him. So I made up my mind to apologise as soon as possible.

"I felt that you did not recognise me," he said. "And when you ran away I did not follow you, not to frighten you more. But it was a pity. I had seen in that very piece of woodland a strange white flower and I had liked you to tell me its name." I answered that I was very willing to go again there with him and at any rate to bring a botanic key. So after a few days we met at the Ehringsdorf quarry after his daily work finished and had a very pleasant walk to the Hainholz again. The strange white flower was Pyrola uniflora, in our country under protection.

(from T. E. Crowley)

PUBLICATIONS RECEIVED

NATURE CONSERVANCY COUNCIL, 16th. REPORT, 31 March 1990.

This is the last report to be expected from the Council, which now ceases to exist, by Government Decree, in favour of a new regionalised system involving Country Agencies and a Joint Nature Conservation Committee. The Chairman's Review therefore naturally looks back at the past achievements of the Council and briefly defines the situation today. The organisation has been close-knit and imbued at times with a good deal of idealism so that it is natural to find in the Report a tinge of regret at the abandonment of the established routines and even possibly a doubt as to whether conservation will be as efficiently defended in the future. As to this, time will tell, but there is no doubt that the N.C.C. has accomplished much since its foundation by Royal Charter in 1949. The essential issues remain the same and are likely to continue as far as one can see into the future, but public concern at the destruction of nature is a great deal more sensitive than it was in those early days and for this the N.C.C. can take a large share of the credit. Among naturalists and many others this fact is widely acknowledged and it seems almost unbelievable that the Council should not have been consulted or indeed involved in any way with the planning of its successor bodies; where else could the experience lie?

The format of the Report is as in previous years, excellently laid out and printed, with some delightful and very relevant colour plates. Much space is naturally devoted to the National Nature Reserves and sites of special scientific interest and it appears that damage has increased during the last year. The Council has found it necessary to prosecute in a few cases. Pollution continues to cause concern but what is less well known is the very considerable amount of research carried out on all aspects of the natural world in Great Britain, the advice tendered in connection with legislation, and the wide range of educational activities.

There is little doubt that the Organisation has been efficient and enthusiastic and has given good value for money. It seems a pity that it should

now be dismantled so completely.

T. E. Crowley

GENERAL NOTES

PUBLICITY DRIVE.

The Council of the Conchological Society is aware of its need to actively recruit new members and a council discussion paper has been drawn up which identifies areas of likely membership, the strengths of the society to be used in promotion and many ideas for increasing publicity and reaching potential members.

It was decided that a new membership brochure should be prepared as soon as possible, perhaps with a poster, and following this with a publicity drive. Time has been set at the December meeting of the Publications Committee for work on the leaflet.

An active publicity drive needs people, time and skills and we are calling on the entire membership to help. Is anyone interested in co-ordinating publicity and maybe there are members working professionally in the field of PR and advertising who may be able to assist. Other skills needed are graphic and design skills for assembling publicity material and displays on the society to tour museums, local events, symposia, etc..

If anyone considers they would like to help, please contact (address below). As our members are well scattered throughout the country (and world) we would be pleased to hear from anyone prepared to put up posters, supply membership leaflets, contact local natural history societies, etc., in their own area.

June Chatfield (Vice-President)

████████████████████, Alton, Hampshire, ██████████ (██████████)

ENGLISH HERITAGE: ANCIENT MONUMENTS LABORATORY

Spare English marine shells? We can put them to good use.

We are currently trying to build up a reference collection of marine shells for the Laboratory, for use in identifying and working on shells from archaeological excavations in England. We have about 130 species at the moment, but many are represented only by one or a few rather battered specimens. We're particularly keen to get hold of good series of species in the families that turn up most commonly on archaeological sites: Patellidae, Trochidae, Littorinidae, Muricidae, Buccinidae, Nassariidae, Mytilidae, Ostreaeidae, Pectinidae, Cardiidae, Veneridae, Mactridae, Tellinidae and Solenidae, but species from other families would also be very welcome.

Any offers of help would be much appreciated. Please write, or ring 071 973 3305 (working hours) or [REDACTED] (evenings).

Sebastian Payne: Ancient Monuments Laboratory, English Heritage,
Fortress House, 23 Savile Row, London, W1X 1AB

MOLLUSC COURSES AT THE FSC IN 1992

Friday 29 - Sunday 31 May 1992: A Weekend of Slugs and Snails led by Ian Killeen at Flatford Mill in Essex. £88 residential. Details from The Warden, Flatford Mill Field Centre, East Bergholt, Colchester, Essex, IG10 4AF

Friday 29- Sunday 31 May 1992: Land and Freshwater Snails at Nettlecombe Court, Somerset, led by June Chatfield. £75 residential. Details from The Warden, The Leonard Wills Field Centre, Nettlecombe Court, Williton, Taunton, Somerset, TA4 4HT

CONCHOLOGISTS' NEWSLETTER - INDEX

The Index to this volume, nos. 101-120 inclusive, is included with this issue. It has again been prepared by Dr. B. Verdcourt to whom I offer my thanks for all the work involved.

NEWSLETTER EDITOR

Will all members please note that I am resigning as Hon. Newsletter Editor with effect from the A.G.M. in March, after nearly 28 years. All future contributions and correspondence concerning the Newsletter should be sent to the new Editor, when elected, Mr. P. Lee to whom I send my good wishes.

P. E. Negus, Hon. Newsletter Editor, Vice-President, Honorary member. March 1992

Printed by: D. C. Armsworth, [REDACTED], Baldock, Herts. Tel.: [REDACTED]

FIELD MEETINGS 1992

Saturday, 4 April. Lathkill Dale NNR, Peak District. Leader: Peter Tattersfield, Tel. [REDACTED]

Lathkill Dale is situated south of Bakewell and forms part of the Peak District Limestone Dales National Nature Reserve. The first part of the day will be spent examining the fauna of the woodlands at the eastern end of the reserve, which are described by English Nature as coming second only to the Dovedale woodlands in quality in the limestone Peak District. Much is known about the histories of different sections of the woodland and it is hoped that their mollusc faunas may reveal some interesting differences.

The remainder of the meeting will concentrate on the River Lathkill, which is one of the few permanently flowing rivers on the Derbyshire limestone, and on the species-rich limestone grassland and associated scree at the west end of the reserve. The river's fauna is poorly known. The grassland supports one of the few colonies of *Helicella itala* in the Peak District. the terrestrial fauna.

Meet at 11:00 at the pay and display car park in Over Haddon (Grid ref: SK203663). If necessary, please contact the leader for further details.

Saturday, 2 May. Sandwich and the Isle of Thanet. Leader: Brian Craig, Tel. [REDACTED]

In the morning we will be recording the freshwater molluscs from the drainage ditches associated with the River Stour. A late lunch at Sandwich Bay will be followed by drift line collecting on Sandwich Flats. In addition to the many marine species recorded from this site, *Monacha cartusiana* is recorded from an area bordering the golf course behind the beach.

Later in the afternoon we will be recording one of the rocky shores on the Isle of Thanet. This will correspond with low water at 18:00.

Members are asked to be at Ramsgate BR station by 10:40. A train leaves Charring Cross at 08:50, arriving Ramsgate at 10:30 (confirm train nearer the time). All those intending to attend this meeting are asked to contact the leader to ensure sufficient cars are available for transport to the sites.

Sunday, 17 May. Dunoon area.

A choice of marine and non-marine field excursions will be on offer to follow the indoor workshop on marine recording. See adjoining sheet for details.

Saturday, 30 May. Peterborough area. Leader: John Bratton (JNCC), Tel. [REDACTED] (office hours).

The aim of the meeting is to record, probably for the first time, the molluscs of three varied sites a few miles west of Peterborough. Two are privately owned Sites of Special Scientific Interest (dry limestone grassland with springs and marsh). The third is a recently declared woodland National Nature Reserve.

Meet at Peterborough railway station at 11:00. There is a frequent rail service from King's Cross with usually three trains per hour. To ensure adequate transport it is essential that all members attending should contact the leader in advance. Any latecomers may meet on the minor road leading to Southorpe at TF090002.

Saturday, 20 & Sunday, 21 June. Weymouth, Dorset. Leader: Ian Killeen, Tel. [REDACTED].

The annual dredging trip will take place on the Sunday. It is likely that we will be taking samples eastwards along the coast towards Swanage (this may require a slightly earlier start than usual). The party is limited to 12 and members should book with the leader as soon as possible, enclosing a £5 deposit made payable to I. J. Killeen.

The programme for the Saturday is yet to be finalised but will probably consist of non-marine and marine work in the Portland area. Details in June Newsletter.

Thursday, 4 to Sunday, 7 July. Pembrokeshire. Leader: Shelagh Smith, Tel. [REDACTED]

The complete itinerary for this meeting is still to be arranged, but it will combine recording non-marine molluscs during the mornings (including searching for *Ponentina subvirescens*) and working a variety of shores at low tide in the afternoons. The meeting will be based at Tenby where there is a large selection of accommodation available, however, we will investigate the possibilities of a party booking. Full details will appear in the June Newsletter, but Members requiring advance information should contact Ian Killeen.

Saturday, 25 July. Pewsey, Wiltshire.

Friday, 25 to Wednesday, 30 September. Scarborough.

Sunday, 01 November. Dorking, Surrey. (NOTE: this is one day later than that advertised in the Programme Card)

Hon. Programme Secretary: Ian Killeen, [REDACTED],
Felixstowe, Suffolk, [REDACTED]. Tel. [REDACTED]

WEEKEND MEETING - 16 & 17 MAY 1992

RECORDING MARINE MOLLUSCA - THE WAY FORWARD

This meeting will now take place at the Argyll Hotel, Dunoon, Argyll, and not in Glasgow Museum as originally advertised. The meeting will comprise discussion workshops on Saturday and Sunday mornings, main meeting with guest speaker on Saturday afternoon and field excursions on Sunday afternoon. There will also be a dinner on Saturday evening. The main aim of the weekend is to review all aspects of the Society's Marine Census and to stimulate interest in the future of marine recording. The provisional programme is as follows:

Saturday, 16 May

- 09:00 - 10:30. Welcome. Review of the existing recording scheme. The way forward.
- 10:30 - 11:00. Coffee.
- 11:00 - 13:00. Nomenclature. Identification guides. New record card. Grid mapping. Computerisation.
- 13:00 - 14:30. Lunch break.
- 14:30 - 17:00. Main meeting. Illustrated lecture by Professor John Davenport (Director of the University Marine Biological Station, Cumbrae) '*The biology of the Antarctic protobranch bivalve Yoldia eightsii*'.
- 19:30. Dinner at the Argyll Hotel, Dunoon.

Sunday, 17 May

- 09:30 - 13:00. Servicing a Sea Area. Specialist mollusc groups. Liaison with other conservation and commercial marine organisations.

Afternoon & early evening Field excursions. Two programmes will be on offer: various land and freshwater habitats and a marine site at low water (c. 18:30). We also hope to arrange for the local sub-aqua club to collect sub-littoral material for us during the afternoon.

PLEASE TURN OVER :

Dunoon is a picturesque seaside resort located on the Cowal peninsula at the head of the Firth of Clyde, and is easily reached by car or train. Rail travellers should change at Glasgow and take the local service to Gourock. There is then a 20 minute journey on a car/passenger ferry to Dunoon. The ferry operates frequently all day, every day.

There is a wide range of accommodation available in Dunoon and the surrounding area from modest B&B to 4* hotels. Members should make their own arrangements but an early booking is recommended. Details and bookings may be obtained from Mrs Collinson at the Dunoon Tourist Board, 7 Alexandra Parade, Dunoon, Argyll PA23 8AB. Tel: 0369 3785.

All the workshop sessions, the main meeting and the dinner will take place in the Argyll Hotel, Argyll Street, Dunoon, Tel. 0369 2059.

This is the first meeting that the Society has held in Scotland and it is hoped that as many Members as possible will be able to attend, particularly those living in the north. It is also hoped that the Society's Sea area Representatives and marine workers will give their support.

Will all Members intending to come to this meeting please fill in the form below and send it to Mr Peter Dow, [REDACTED], Dunoon, Argyll [REDACTED] (Tel. [REDACTED]) as soon as possible. Members requiring details of the content of the meeting should contact Ian Killeen.

A second circular will be sent to all attendees.

I wish to attend the meeting in Dunoon:

Name.....
Address.....
.....Tel.....

I wish to book for the Saturday night dinner.....

Which field excursion would you prefer?
Non-marine..... Marine..... Both.....

I will be travelling by car..... rail..... other.....