
Produced by THE CONCHOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND

MARINE RECORDING THIS SUMMER

In the last three years, while I have been representative for Sea Area 14, I have been most disappointed by the very small number of records received from members of the Society. Area 14 runs from just north of Folkestone, around the coasts of Kent and Sussex to a few miles east of Brighton. It contains Eastbourne, Pevensey, Bexhill, Hastings, Rye, Dymchurch, Hythe and Folkestone, in fact, a string of seaside resorts broken by an occasional cliff. I cannot believe that no Conchological Society member or their friends have been on holiday in this area in the last three years! Many area representatives are short of recent records for their areas.

Even if you 'don't know a whelk from a winkle' please do collect whenever you have the opportunity. It is quite possible that you may find something new, and even if you don't, the records will contribute to the general picture. Area representatives are always happy to identify your finds.

The Society has recently produced some information sheets on the marine census. These sheets include 'Practical hints for collectors...', 'Introduction to the recording scheme for British Marine Mollusca', 'Sea area boundaries' and 'List of area representatives'. If you would like any of these sheets, please write, sending a large, stamped, self-addressed envelope and I shall be delighted to send them to you.

As you will know, 1976 is the Society's centenary year, and we are to see the first provisional atlas of non-marine Mollusca published. The contribution by members of thousands of records for the marine census would help to ensure that a provisional marine mollusc atlas is published before the bicentenary.

Celia Pain

SUBFOSSIL LACINIARIA BIPLICATA (MONTAGU) AT FULHAM, LONDON

In May 1973, at the invitation of Mr. Paul Arthur of the Fulham Archaeological Rescue Group, the writer visited an excavation (TQ 241759) across Fulham Palace moat in Bishop's Park, Fulham, near the River Thames. The section revealed deposits from the present day back to Neolithic times (Whitehouse 1973). It appears that in the 3rd. and 4th. centuries A.D. the Romans constructed a defensive area with a ditch on a previous Neolithic and Iron Age site. This ditch was possibly turned into a moat by the Vikings in the 9th. century and thereafter became part of the grounds of Fulham Palace (the residence of the Bishop of London). The moat and associated layers representing various cleaning-out operations persisted until 1921 when it was filled in; further rubble was added in the 1940's from war-time London.

Laciniaria biplicata was found in five of the samples from the excavation, in layers 4 (Roman rampart, latter half of 4th. century), 5 (post-Roman), XZ (probably 19/20th. century moat bottom deposits, undisturbed) and in B and C (deposits thrown out from moat-cleaning operations). The identifications were kindly confirmed by Dr. M. P. Kerney. Associated with L. biplicata were:

	Layers				
	4	5	XZ	B	C
<u>Theodoxus fluviatilis</u> (L.)	x	x		x	x
<u>Viviparus viviparus</u> (L.)					x
<u>Valvata cristata</u> Müller		x		x	
" <u>piscinalis</u> (Müller)	x	x	x	x	x
<u>Bithynia tentaculata</u> (L.)	x	x	x	x	x
<u>Carychium tridentatum</u> (Risso)	x	x			x
<u>Lymnaea truncatula</u> (Müller)					x
" <u>palustris</u> (Müller)		x		x	
" <u>auricularia</u> (L.)			x		
" <u>peregra</u> (Müller)	x	x	x	x	
<u>Planorbarius corneus</u> (L.)	x				x
<u>Planorbis carinatus</u> Müller	x	x	x	x	
" <u>planorbis</u> (L.)	x	x			
" <u>leucostoma</u> Millet			x	x	
" <u>albus</u> Müller		x			x
" <u>contortus</u> (L.)		x		x	x
<u>Succinea putris</u> (L.)					x
" <u>pfeifferi</u> Rossm.	x		x		x
<u>Cochlicopa lubrica</u> (Müller)	x	x			x
" cf. <u>lubrica</u> (Müller)			x		
<u>Vertigo pygmaea</u> (Drap.)		x			x
<u>Vallonia excentrica</u> Sterki	x	x		x	x
<u>Ceciloides acicula</u> (Müller)	x	x			x
<u>Cepaea hortensis</u> (Müller)	x			x	
" <u>nemoralis</u> (L.)	x	x			
" sp.	x				x
<u>Helix aspersa</u> Müller	x	x		x	
<u>Hygromia striolata</u> (C. Pfeiffer)	x	x		x	
" <u>hispidula</u> (L.)	x		x		x
<u>Discus rotundatus</u> (Müller)	x	x		x	x
<u>Vitrea crystallina</u> (Müller)	x			x	x
<u>Oxychilus</u> cf. <u>cellarius</u> (Müller)	x	x			
<u>Retinella</u> cf. <u>nitidula</u> (Drap.)	x	x			
<u>Arion</u> sp. granules	x	x	x	x	x
Limacid slug plates	x		x		x
<u>Anodonta</u> sp.	x				
<u>Sphaerium corneum</u> (L.)			x	x	x
<u>Pisidium amnicum</u> (Müller)	x	x			
" sp.		x	x	x	
<u>Cerastoderma edule</u> (L.)	x		x	x	
<u>Ostrea edulis</u> L.	x			x	x
Ostracods			x		
Small mammal bones				x	

According to Mr. Arthur, layers B and C (114cm below present ground level to the base of C) are very probably no more than 100 years old and with this in mind the nearby nettle-beds and shrubberies of the park were searched for about an hour, but no living or dead L. biplicata were found. However, it is felt that there is a possibility that this snail could still be alive somewhere in the secluded gardens of the Bishop's Palace and that this would be worth further investigation.

A. S. Kennard (MS. notebooks) recorded sub-fossil L. biplicata from Fulham, found in 1890 but he was given no precise locality by the collector of the sample, a Mr. G. E. Mason. It was associated with Marpessa laminata (Montagu). L. biplicata was not listed as living in Fulham by Sheppard (1852). Cockerell (1884) recorded it from Hammersmith. Other records of its occurrence in London and elsewhere are given by Ellis (1926 & 1969), Boycott (1929) and Castell (1962).

I would like to thank Dr. Kerney for confirming the identification and for providing some of the references. It is hoped that a paper incorporating all the specialist reports on the excavation will be compiled by the Fulham Archaeological Rescue Group, in which a full mollusc report will appear.

REFERENCES

- BOYCOTT, A.E. 1929 The habitat of Clausilia biplicata Mont.
J. Conch. Lond., vol. 18, no. 12, pp. 340-343
- CASTELL, C.P. 1962 Some notes on London's Molluscs.
J. Conch. Lond., vol. 25, no. 3, pp. 97-117
- COCKERELL, T.D.A. 1884 Conchological Notes.
Sci. Gossip, London, vol. 20, pp. 115-116
- ELLIS, A.E. 1926 & 1969 British Snails.
Oxford: Clarendon Press
- KENNARD, A.S. MS Notebook, Middlesex and Surrey (Quaternary non-marine Mollusca) in Dept. of Palaeontology, British Museum (Natural History).
- SHEPPARD, A.F. 1852 Land and Fresh-water Mollusca found in the Neighbourhood of Fulham.
Zoologist, London, vol. 9 for 1851, pp. 3120-3121
- WHITEHOUSE, K. 1973 Fulham Palace Moat Excavation.
Fulham archaeol. Rescue Group News Lett. No. 1, Autumn 1973, pp. 4-6

John Cooper, 3.XI.1975

SOME NOTES ON THE MOLLUSCAN FAUNA OF GIBRALTAR

INTRODUCTION

In April 1975, I spent a period of some 17 days collecting land and marine molluscs on the Rock, and in the coastal waters off Gibraltar. The following is by way of an introduction to a more detailed fauna which I hope to be able to produce sometime in the future when all the material I gathered has been identified. The published records on the molluscan fauna of the area are very limited and confined to a few widely scattered notes in British and European publications. With this in mind a short history, as this may have affected the fauna, and some notes on the structure and geology of the area may be of value to the better understanding of the status of some of the species.

HISTORY

The Romans called Gibraltar 'Calpe', and it was known as one of the 'Pillars of Hercules', Mount Abyla (Ape's Hill), on the Moroccan coast being the other. The name Gibraltar, however, is a corruption of the Arabic words 'Gebel Tarik' (Tarik's Mountain), named after Tarik ibn Zeyad a Berber leader who landed on the Rock in April 711 A.D. The Rock was used mainly as a defence post until 1160 A.D. when the Almohad Monarch 'Abd el M'umin' founded a city on it. From 1309 to 1333, Gibraltar had a short period in the hands of the Spanish, but in 1333 it was recaptured by the Moroccans. It is to this period that most of the Moorish remains to be found on the Rock belong. The Spanish held it again from 1462 until 1704, when Vice-Admiral Sir George Rooke landed and captured Gibraltar for the British.

During the whole of this period various walls and defences were built, turning the Rock into a strong fortress, but it was the Great Siege from 1779 to 1783 which produced the most remarkable part of the Rock's defences. It was in this period that Sergeant-Major Ince built the Galleries, a series of tunnels inside the Rock, which enabled the gunners to place their guns high up the north face, and by firing through small holes in its surface they could dominate the area without danger to themselves. These tunnels proved such a success that even today tunnelling still takes place; there are at the moment over 30 miles of tunnels, built for various uses.

GEOLOGY

Gibraltar is basically a very large limestone rock standing some 1,398 feet above sea level at its highest point, and some 2½ miles in length. In

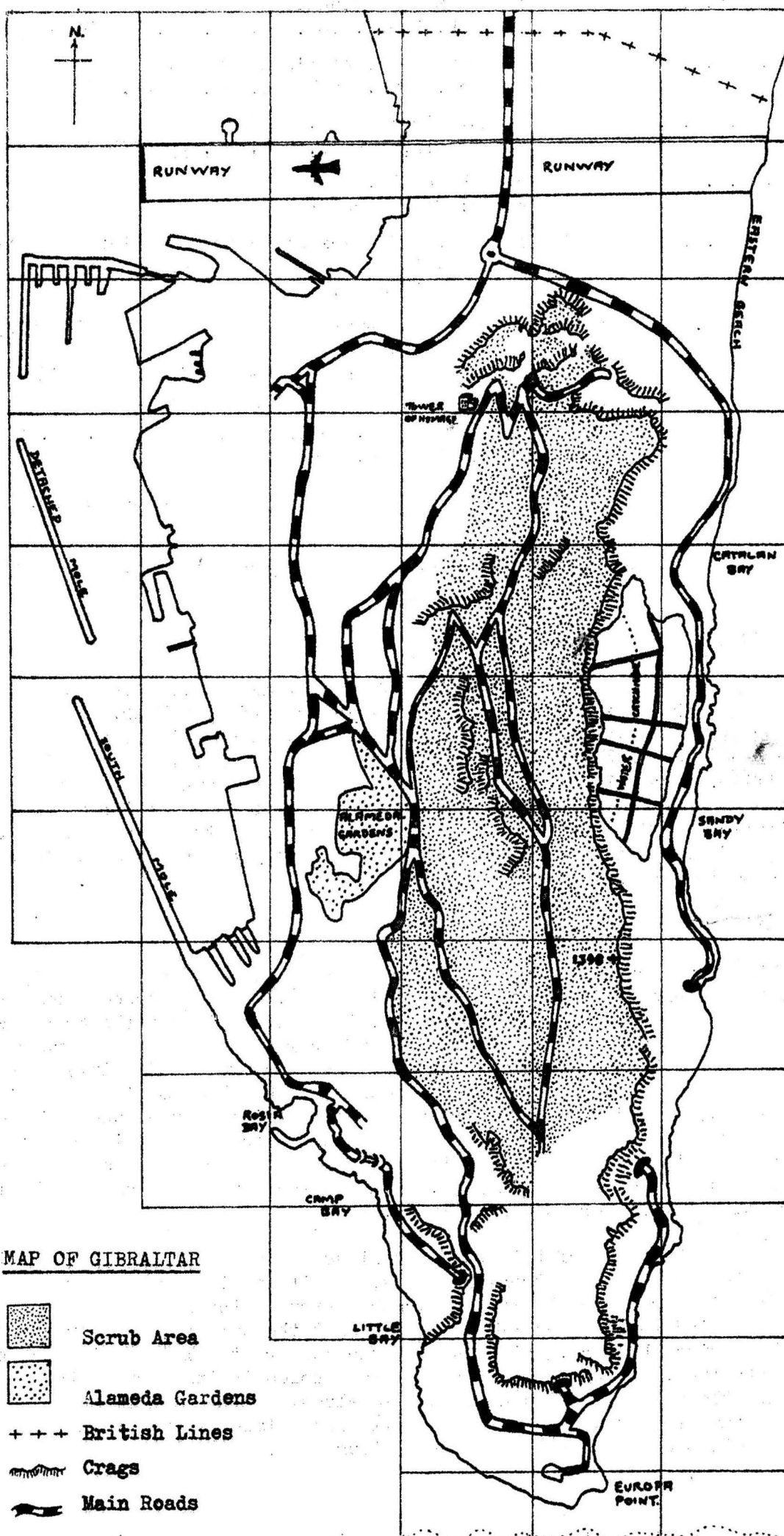
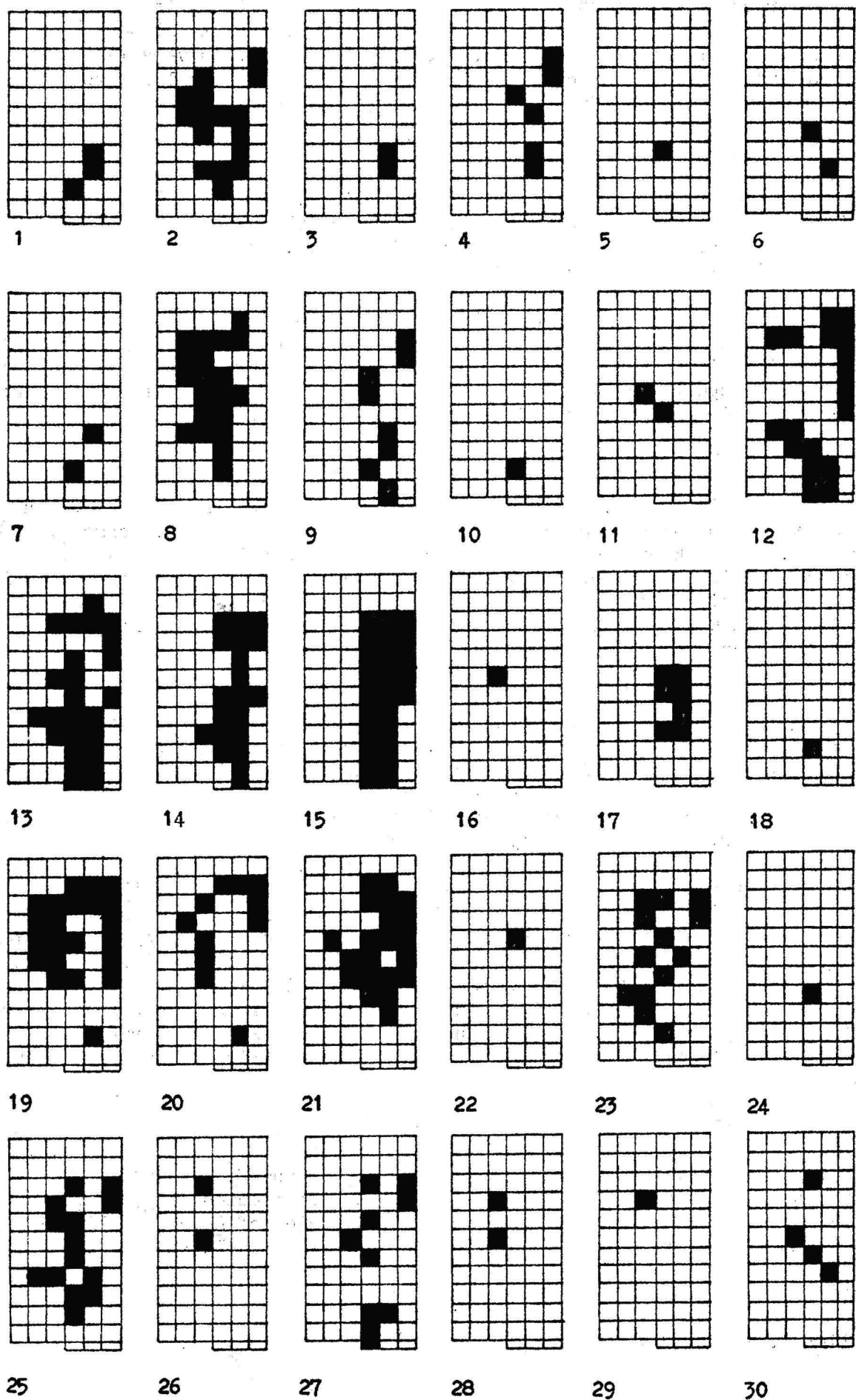


Fig. 1.



Maps showing the distribution of land molluscs on Gibraltar.

(For key map see fig 1.). Numbers correspond with list of species found on Gibraltar during April 1975.

width it tapers from 1,550 yards in the north to 550 yards at Europa Point in the south, and it has an area of some $2\frac{1}{4}$ square miles.

The rock is one of the Jurassic Limestones overlaid on its west side by shales. Being limestone it is honeycombed with caves, both at sea level, and high up on the rock. One of these, St. Michael's Cave, is very large and spectacular; this cave, because of its beauty and its natural auditorium is often used as a Concert Hall.

MODERN EFFECTS

The pressure for land and building materials, combined with the very limited area of the Rock and the need to protect the environment, has meant that most, if not all, the building materials, i.e. stone, has to be imported. Most of this, I was told, comes from Portugal but some materials come from North Africa and even from Great Britain. The introduction of new species of molluscs to the fauna of the Rock is, therefore, something that must take place at fairly regular intervals. The adverse climatic conditions may control these introductions in most cases, and prevent them from becoming fully established, however some species of land molluscs have become very successful immigrants, and the same is probably true for some marine species.

THE LAND SNAILS

In an article by W. Kobelt (1883), on the land shells of Gibraltar he published a list of some 20 species; this list was added to by J. Ponsonby (1885), and J. R. le Brockton Tomlin (1943), bringing the published list up to 28. I found 30 species, of which 10 were new, producing a grand total of 38 species. Of the 30 species I found, 8 could only be found dead, but only one of the dead species was new to the Rock and that was Helicella caperata (Mont.) which with H. virgata (da Costa), also only found dead, is usually best found live in the autumn.

The best areas for collecting land species are the edges of the roads which run up the west face of the Rock, particularly in the area of the Tower of Homage, Alameda Gardens and the road leading from the town to Europa Point. This road runs at the foot of the Rock and includes a few gardens, in what is one of the few areas that are relatively protected from the hot sun in summer. These, however, are not the only places, the flower tubs in the centre of the town produce large numbers of Rumina decollata (L.) and Helicella (Candidula) conspersata (Drap.) even the house roofs in the older parts of the town produce these two species with the addition of Ferussacia folliculus Gron. The larger flower beds contain a surprisingly large range of species, in one particularly good flower bed at the edge of Alameda Gardens I found 11 species including Parmacella moquini Bourguignat var. maculata Cockrill and Testacella maugei Fer. in reasonable numbers. In the badly disturbed areas at the edge of the town Milax gagates (Drap.), Helix aspersa Mull. and Oxychilus draparnaldi (Beck) occur in small numbers as does a species of Agriolimax and an Arion ? sp.

In the wilder parts of the Rock such interesting animals as Truncatellina which is common on the north-east side of the Rock, Otala lactea (Mull.), O. marmorata Fer., Carocollina lenticulata (Fer.) and C. calpeana (Morelet) occur fairly commonly. However some of the native species like Chondrina calpica (West), Granopupa granum Drap. and a species of Acicula, which is as yet unnamed, are very rare and only single examples could be found.

CHECK LIST OF LAND MOLLUSCS

Section A. List of species collected by A.N. in April 1975.

A = live, d = dead

1	<u>Acicula</u> (<u>Acicula</u>) sp.?	d	Rare	1885
2	<u>Ferussacia follicula</u> Gron.	A	Common	1883
3	<u>Pyramidula rupestris</u> (Drap.)	d	Rare	1883
4	<u>Truncatellina</u> sp.?	A	Common but local	1885
5	<u>Granopupa granum</u> (Drap.)	d	Rare	1885
6	<u>Lauria cylindracea</u> (da Costa)	A	Rare	

7	<u>Chondrina calpica</u> (West.)	d	Rare	1883
8	<u>Rumina decollata</u> L.	A	Abundant	1883
9	<u>Ceciloides poupillieri</u> Serv.	d	Fairly common	1885
10	<u>C. connollyi</u> Tomlin	d	Scarce	Tomlin, 1943
11	<u>Testacella maugei</u> Fer.	A	Scarce	
12	<u>Theba pisana</u> (Mull.)	A	Abundant but local	1883
13	<u>Helix aspersa</u> Mull.	A	Common	1883
14	<u>Otala lactea</u> (Mull.)	A	Common	1883
15	<u>O. marmorata</u> (Fer.)	A	Common	1883
16	<u>Hygromia hispida</u> (L.)	A	Rare	
17	<u>Helicella caperata</u> (Mont.)	d	Scarce	
18	<u>H. virgata</u> (da Costa)	d	Local	1883
19	<u>H. (Candidula) conspergata</u> (Drap.)	A	Common	1883
20	<u>Cochlicella acuta</u> (Mull.)	A	Abundant but local	1883
21	<u>Carocollina lenticula</u> (Fer.)	A	Common	1883
22	<u>C. calpeana</u> (Morelet)	A	Local	1883
23	<u>Arion</u> ? sp.	A	Common	
24	<u>Vitrea contracta</u> (West.)	A	Rare	
25	<u>Oxychilus draparnaldi</u> (Beck)	A	Scarce	1883
26	<u>Hyalina hydatina</u> Rsm.	A	Rare	1885
27	<u>Parmacella moquini</u> Bourguignat	A	Common	
28	<u>Milax gagates</u> (Drap.)	A	Common but local	
29	<u>Limax flavus</u> L.	A	Rare	
30	<u>Agriolimax</u> sp. ?	A	Common	

Section B. Additional species to the above from Kobelt's list 1883.

<u>Parmacella calyculata</u> Sow.	1883
<u>Hyalina calpica</u> Kobelt	1883
<u>H. dauthezi</u> Kobelt	1883
<u>Helix (Tachea) coquandi</u> Morelet	1883
<u>Helix (Iberus) scherzeri</u> Zelabor	1883
<u>Helix (Turricula) simiarum</u> M.	1883
<u>Helix apicina</u> Lam.	1883

Section C. Additional species to above from Ponsonby's list 1885

<u>Hyalina eustilba</u> Bourguignat	1885
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MARINE MOLLUSCA

Gibraltar is situated at the southern tip of the Iberian Peninsula at a point where the waters of the North Atlantic and the Mediterranean mix. This has resulted in a mixture of the molluscs found in both these sea areas, and therefore it has a very rich and varied fauna. I was able to examine the beach areas on the eastern side, Eastern Beach, Catalan Bay and Sandy Bay and intertidal rocks on the western side at Camp Bay and Little Bay. With the help of the Royal Air Force Diving Club, bottom samples were also taken off the Detached Mole, just on the outside of the harbour, and various places inside the harbour. Unfortunately the weather, during most of the period I was on the Rock, was inclement with strong winds and some rain. The seas were therefore too rough for me to be able to examine more open water and the more inaccessible areas of the south-east, where the high cliffs drop vertically into the sea.

There is a small tide of a few feet, and therefore a small intertidal area in which many interesting species can be found. I listed over 130 different molluscs of which I have been able to name 73 species to date. The main difficulties in identification are the numbers and variety of some groups, for example, one set of rocks in Little Bay had 5 species of the larger limpets, including Patella vulgata L., P. caerulea L. and P. lusitanica Gmel. and 5 species of Chiton including the handsome Chiton olivaceus Spengler.

The intertidal rock pools are very different from those found on the British coast, being almost devoid of sea-weeds. They do however contain large numbers of invertebrates, of which the most notable are the Sea Anemones, and the Echinoderms. The Snake-locks Anemone, Anemone sulcata Penn., a large green species, is particularly striking and the occurrence of such as the Feather Star, Antedon mediterranea Lam., Cushion Stars, Asterina gibbosa Penn. and the

Common Black Urchin, Arbacia lixula L., made it difficult both to keep your mind on the job of shell collecting and to turn over and replace stones without damage to these animals.

The rocks in Little Bay proved very good for the collecting of marine molluscs and I found about 40 species, some such as Pisania maculosa Lam. and Gibbula divaricata L. in large numbers. Haliotis tuberculata L., Vermetus triqueter Biv., Ostrea plicata Lam. and Anomia cepa L. occurred only in small numbers and proved very difficult to find, in some cases I had to remove several layers of rocks before these animals turned up. Only two species of sea slug were found, one Elysia viridis Mont. in Little Bay and a very large example of Oscanus testudinarius Cant. from the harbour found by the R.A.F. Diving Club. One of the divers emerged with this huge slug, about the size of a small dinner plate, in one hand and a large Basket Starfish Gorgonocephalus costosus Mull. in the other, like Neptune offering gifts from the sea!

The Gibraltarians only seem to bother with small numbers of shell-fish and the only species that can be bought, apart from the Common Octopus Octopus vulgaris L., are Glycymeris violescens Lam. and Acanthocardia tuberculata (L.) and these seem to be used mainly as bait for fishing.

Below is an incomplete list of the marine molluscs recorded by myself at Gibraltar, with additions from various other sources. The Museum in Gibraltar kindly let me have a list of the species known to occur in the area of the Rock and, although very incomplete, the list did include several interesting records. When I am able to get the remaining species I collected identified I shall try and publish a supplementary list. If any readers know of any records from the Rock not listed here, I would be very interested to hear of them.

LIST OF MARINE MOLLUSCS

Chiton olivaceus Spengler
Haliotis tuberculata L.
Emarginula reticulata Sow.
Patella vulgata L.
P. caerulea L.
P. lusitanica Gmel.
Acmaea virginea (Mull.)
Calliostoma zizyphinum (L.)
Jujubinus striatus L.
Gibbula divaricata L.
Astraea rugosa L.
Littorina neritoides (L.)
Rissoa parva (da Costa)
Turritella communis Risso
Vermetus triqueter Biv.
Cerithium vulgatum Brug.
C. rupestre Risso
Triphora perversa (L.)
Clathrus clathrus (L.)
Calyptrea chinensis (L.)
Aporrhais pespelecani (L.)
Primovula carnea Poirer
Polynices guillemini Payr
Natica josephine Risso
N. hebraea Martyn
Cassis sulcosa Brug.
Ranella gigantea Lam.
Tritonalia nodifer (Lam.)
Murex brandaris L.
M. trunculus L.
Thais haemastoma Lam.
Ocenebra erinacea (L.)
Astarte triangularis (Mont.)
Myrtea spinifera (Mont.)
Mysella bidentata (Mont.)
Anomia cepa L.
A. ehippium L.

Alvania cimex L.
Pisania maculosa Lam.
Nassarius mutabilis L.
N. incrassatus (Strom.)
Balcis devians (Mont.)
Busycon contrarium
Volutopsius norwegicus (Gmel.)
Cymbium philippinum
C. olla (L.)
Acteon tornatilis (L.)
Bullaria striata Brug.
Elysia viridis (Mont.)
Oscanus testudinarius Cant.
BIVALVES
Leda fragilis Chemn.
Arca noae L.
A. lactea L.
Glycymeris violescens Lam.
G. pilosus Lam.
Musculus marmoratus (Forbes)
Mytilus edulis L.
M. galloprovincialis Lam.
Pinna nobilis L.
P. squamosa Gmel.
P. rudis L.
Pecten jacobaeus L.
P. maximus L.
Chlamys opercularis (L.)
C. varia (L.)
C. pes-felis Lam.
C. furtiva (Loven)
Lima hians (Gmel.)
Limatula subauriculata (Mont.)
Tellina tenuis da Costa
T. incarnata L.
Donax vittatus (da Costa)
D. venustus Poli.

Ostrea plicata Lam.
Venericardia sulcata Brug.
Acanthocardia aculeata (L.)
A. tuberculata (L.)
Parvicardium scabrum (Phil.)
Dosinia exoleta (L.)
Venus striatula (da Costa)
V. verrucosa L.
V. ovata Penn.
Venerupis decussata (L.)
V. pullastra (Mont.)
Irus irus (L.)
Pitaria chione L.

Gari depressa (Penn.)
Ensis siliqua (L.)
Macra corallina (L.)
Spisula subtruncata (da Costa)
Lutraria lutraria (L.)
L. magna (da Costa)
Hiatella arctica (L.)
Corbula gibba (Olivi)
Panomya arctica (Lam.)
Gastrochaena dubia (Penn.)
Sphenia binghami Turton.
CEPHALOPODA
Sepia officinalis L.
Octopus vulgaris Cuvier

ACKNOWLEDGEMENTS

I would like to thank the many people who have helped both in the collecting of specimens on Gibraltar, and the identification of the material. In particular I would like to thank the R.A.F. Diving Club for their help in collecting the marine molluscs, and Mr. David Savage for all the help he gave me tracing the various localities given in Kobelt's publication.

REFERENCES

Kobelt, W., 1883, The Land Shells of Gibraltar, J. Conch. 4:1-9.
Ponsonby, J., 1885, Additions to the land shells of Gibraltar, J. Conch. 4:266.
Tomlin, J.R. & B., 1943, Gibraltar Cecilioides, J. Conch. 22:23.

Ad. Norris, F.L.S., Leeds City Museums, Dec. 1975

"HOW THOSE CYMATIIDAE DO GET AROUND!"

OR

'TRIALS OF AN AMATEUR'

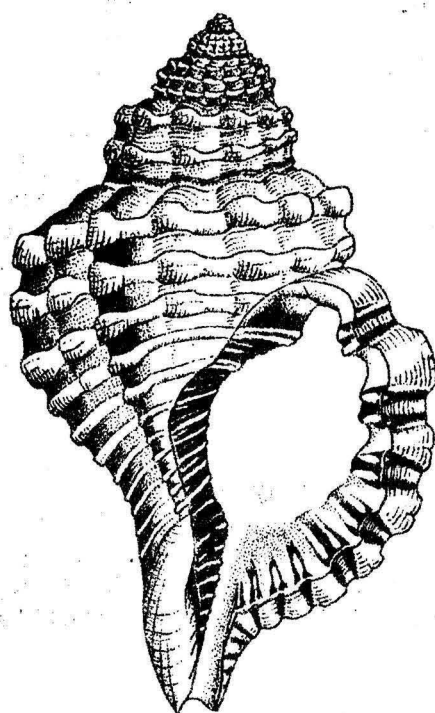
A few days ago I received a parcel of shells from Oman which contained a number of interesting specimens; Cymatium ranzanii Bianconi, 1850 for one. But there was one other Cymatium, several specimens, live taken and beached, adult and juvenile, which particularly interested me. My first reaction was that it looked like one I already had from Australia. I compared them with the latter, C. (Monoplex) australasiae Perry, 1811 and they seemed to me to be the same. Next I looked up C. australasiae in Wilson and Gillett's 'Australian Shells' and found the locality given as "Southern Queensland to Freemantle W.A." (Northabout or south about?).

At the next meeting of the Conchological Society I exhibited both the Omani and Australian shells, hoping for enlightenment. Mrs. Kathleen Smythe said that she had similar specimens from Oman which she had classified as C. parthenopeum Von Salis, 1793. This rang a bell for me which said 'Mediterranean'.

Back home I went first to von Nordsieck's book on Mediterranean gastropods where I found "Cymatium Rüdiger 1798....Subgenus: Monoplex Perry 1811. Type: costatum (Born) = parthenopeum (v.Salis)....Cymatium (Monoplex) parthenopeum (v.Salis) = succinctum (Lamarck)....Mediterranean, Lusitanian Sea to Guinea."

So next to Nickles book on West African shells where he gives "C. costatum Born (= le vojet Adanson); from Morocco to Cap Bonne Esperance." So now I had C. parthenopeum from the Med to the Cape of Good Hope. Where should I go next? On a whim I turned to a source often of great help, Myra Keen's "Sea Shells of Tropical West America", and got much warmer.

M. Keen gives "C. (Monoplex) parthenopeum keenae (Beu, 1970) (Synonym: Murex parthenopeus Von Salis, 1798 (sic), of authors). Although C. parthenopeum has long been considered to have cosmopolitan distribution in the Mediterranean, Caribbean, and eastern and western Pacific, Beu (1970) has shown that



Cymatium (Monoplex) parthenopeum Von Salis
(drawn by David Reid)

there are consistent geographical differences. The eastern Pacific form differs by having seven spiral ridges per whorl, more than in any of the other species or subspecies he recognizes".

So far so good. All the illustrations and descriptions of C. parthenopeum fitted my specimens from Oman and Australia's C. australasiae, but the localities of neither did.

Then, somewhat late in the day, I looked in Cernohorsky's "Marine Shells of the Pacific". Under C. (Monoplex) parthenopeum (Von Salis, 1793), he says "the species has a wide distribution, ranging from New Zealand to East Australia, Japan, East Africa, the Mediterranean, Caribbean, Florida and Brazil. Synonyms are costatus Born, 1778 (non Pennant, 1777), australasiae Perry, 1811, americanum d'Orbigny in Sagra, 1842, brasilianum Gould, 1849, acclivis Hutton, 1873, and echo Kuroda & Habe, 1950."

"So what?" you may say, "Nothing new after all!". Well, yes, but it was an interesting exercise and Cernohorsky at least had not included the Arabian Sea in his list of localities, and Myra Keen had omitted Australia and New Zealand and the Indian Ocean, and there is a tail-piece!

Finally I looked in my own book, the Hamlyn Guide to Shells of the World, to see what errors I had committed there. My Australian shell is illustrated and named Cymatium parthenopeum Von Salis, 1793 !!! But I have given the locality as 'South-east, south Australia', which Peter Dance has pointed out is too narrow. He says 'widespread e.g. the Mediterranean', but in his "Encyclopedia of Shells" he gives Cymatium australasiae Perry and the locality as Australia!

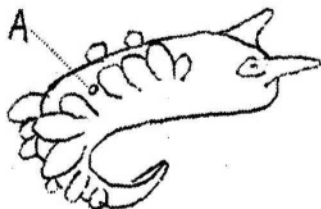
A. P. H. Oliver, November 1975

SACOGLOSSAN NOTES

It is hoped that these notes will encourage many of the first-rate collectors we have in the Society to be on the look-out for sacoglossans, rare or unrecorded. The more collectors that take part in the search for such species, the sooner we shall find them and so add prestige to our Society.

THREE RARE SACOGLOSSANS

G. P. Farran recorded Stiliger bellulus for Ballynakill Harbour co. Galway, Ireland, in 1903 and since then it has not been recorded. Its rediscovery would be a most welcome event. He found S. bellulus crawling over Laminaria saccharina and also in beds of Zostera. Of European species Stiliger mariae lives on the seashore and on salt marshes, whilst Stiliger niger is a marine species. The three species look very much alike and T. E. Thompson would probably help you to identify a specimen. The figure, given as a guide to all three, is based on descriptions of Stiliger bellulus.



SHAPE: slug-like body SIZE: 3-5mm. COLOUR: brown to black

KEY CHARACTERS: One pair of rhinophores; eyes set in pale patches; about 10-15 cerata along each side of the body. Anus half-way down the dorsal surface on the right.

A species not yet recorded for Britain or Ireland

In 1973 Lemche discovered a new species Calliopaea oophaga. He found it off the coast of Denmark on muddy-sandy ground. It is an interesting sacoglossan for it feeds on the eggs of tectibranchs such as retusids. If you find any likely egg-masses keep them in a bowl of sea water and examine them for C. oophaga.

The animal is very small, 1-3mm long. Its colour is brown to black. It has a pair of short, stubby rhinophores and a few blunt cerata (about 4-6 each side) which begin about half-way down the body.



Its internal anatomy is quite distinctive and, if required, I would try and confirm your identification. My address is T. Gascoigne, [REDACTED], Peckham, London, [REDACTED].

Mediterranean Species

The Mediterranean is a large subtropical basin rich in sacoglossan species. Most of them were discovered last century near Marseilles, Monaco, Naples, and on the Adriatic coast by Trinchese and A. Costa. It could be that by now pollution has killed off the rarer species, though they may still flourish along the African side near Bougie or Bizerta. Mediterranean species have not established themselves along our coasts - perhaps the sublittoral water is too cold for them to breed successfully. However, a few have extended their range to southern Ireland and Devon and Cornwall. Already H. Lemche and T. E. Thompson have recorded one of these species - Hermaea variopicta (1974, Proc.malac.Soc.Lond. 41 185-193). It is even possible the Mediterranean outflow and the Gulf Stream may bring one or two vagrant species as far north as the Orkney and Shetland Islands.

The best guide to Mediterranean sacoglossans is Mollusques Opisthobranches, Faune de France, No.58, written by A. Pruvot-Fol and published in Paris, 1954. The book consists of 448 pages but the sacoglossan section is

only 35 pages which could be photocopied and made into a small reference book. Pruvot-Fol deals fully with external features and most of the species are easy to identify. For example, Costasiella has two large black eyes that are situated between the rhinophores; the eyes are so large they almost touch one another. Calliphylla mediterranea looks like our Hermaea bifida, except that its cerata are broad, flat and leaf-like.

Tom Gascoigne

MARINE RECORDING AND MARINE CONSERVATION

The first of these is a prerequisite of the latter - for until one knows what is present in a site, one cannot take any action to protect a species or community. There are many who fear that we fight a losing battle: perhaps such action will be insufficient, or come too late - but at least we can help to ensure that those who need the ammunition of knowledge will not be unprovided with the right information. Those of us interested in the distribution of marine molluscs, will know that whereas one small stretch of coast may have a wealth of published and unpublished material on all marine groups, much of the shoreline may have no such historical background. The recording of molluscs in any of the Sea Areas will be helping to fill some of these gaps, and there are ways in which this may be of immediate use on the conservation front.....

Recently the Nature Conservancy Council (NCC) has placed a contract through the Natural Environment Research Council (NERC) with the Scottish Marine Biological Association and the Marine Biological Association of the United Kingdom, for the employment of two graduates and two assistants (supervised jointly by Dr. N. A. Holme and Mr. H. T. Powell) to undertake surveys of the inter-tidal zone of the whole coastline of England, Wales and Scotland over the next three to five years. This can only be a generalized assessment of habitats and communities, but the work will include a desk study of all the information available from different parts of the coasts. Survey results will be used to list those places it is especially desirable to conserve, by virtue of their biological diversity, unusual communities, presence of a very rare species, limited type of habitat, etc.. Appropriate management, research and legislative requirements will be considered by a Working Party set up jointly by the NCC and NERC, following a recommendation by the Clark Report of Marine Wildlife Conservation (published by NERC in 1973).

Even a brief resume of the general facies of a shore can be a useful guide to those assessing its value, and conchologists can add that touch of specialist knowledge which comes from experience of a group. The sort of background description which some members submitted for the Shore Directory, is potentially valuable (i.e. sheltered bay with sloping rocky reefs, many rock pools and a sandy beach used for bait-digging), accompanied by an annotated list of species found on particular date or dates. Counts per square metre of certain of the less mobile species, such as Littorina spp., Nucella lapillus and Mytilus and a note on the seaweed cover adds to the usefulness, especially if such notes apply to a re-identifiable part of the shore that can be used as a base-line in any future appraisal of the site; a photo or sketch-map is a useful adjunct. Moreover most conchologists find that they have become sufficiently familiar with other groups to name some of the commoner forms, so that these can be added to any survey note of the site.

Then the important thing is to see that a copy is available to any person or group who can take it a stage further on future outings. And if your Regional Nature Conservancy Officer has a copy, it could form a link in the knowledge of the national assessment of our littoral environment.

Stella M. Turk, 18.1.1976

DIES ANNIVERSARIUS
(To the Conchological Society)

One-hundred shelly years have passed
In which devotedly,
We've studied you who crawl on grass
Or grow down in the sea.

Our cabinets are arranged in rows
In dusty halls of fame,
And amateurs and likewise pro's
We're all in there the same.

We've written papers by the ton,
And when it comes to surveying
We are second not to anyone
For mapping is our thing.

The time worn records we have kept
Do credit to our fame,
And yet what snail has not but wept
To carry a misname?

For when it comes to classifying
Some of us are good,
But the rest of us feel like crying
When a shell is not understood.

How fine an object is a shell,
And rightly should it be
That molluscs have been treated well
By this Society.

Peter Topley (Junior Member), January 1976

SACOGLOSSANS AGAIN!

The small opisthobranch molluscs belonging to the order Sacoglossa are probably common around our coasts where suitable habitats occur, but they are under-recorded as few collectors have their eye into the precise type of habitat and also the un-molluscan appearance of these sea-slugs in the field. They are like small black specks or seeds glistening on the surface of the mud. It is essential to get on all fours to have any chance of finding them in the field. Recently Tom Gascoigne published a field guide to some British sacoglossans and this includes detailed accounts of their habitats (Gascoigne, T., 1975. A field guide to the British Limapontiidae and Alderia modesta Lovén (Gastropoda: sub-class Opisthobranchia, order Sacoglossa). J. Conch. Lond., 28, 359-364).

At the Conchological Society field meeting to the Gower peninsula, South Wales, held in late September 1975, Dr. T. Gascoigne gave a demonstration of finding sacoglossans on the salt-marshes at Llanrhidian Marsh (Nat.Grid Ref. 21/508939). Although it was the wrong time of year to look for these animals (and consequently those which we found were smaller than normal), most members of the group did collect Limapontia depressa and some also found Alderia modesta.

Trying the same methods of searching in patches of dark green filamentous alga in shallow, empty salt-pans on the shore of the Mawddach estuary near Bontddu, Gwynedd, in North Wales (23/654177), more Limapontia depressa were found during the Biological Recording Group for Wales meeting on 26 October, 1975. Like those found on the Gower in September, these specimens were also small in size (1-2 mm length). Once one has found one's first sacoglossan, the further ones are easier to find. Routine searching for sacoglossans in suitable habitats during the course of the Society's marine census, may well result in many new records and a more accurate assessment of their distribution.

June Chatfield

HELIX POMATIA L. IN LINCOLNSHIRE

In April 1974 a single shell of Helix pomatia L. was found by Mrs. V. Wilkin, of Hibaldstow, in a disused chalk pit on the Brocklesby Estate, near Great Limber (54/10). The shell was in a relatively fresh condition, but showed some signs of weathering. Decayed remains of the mollusc were still present in the shell when found.

As this site is about 90 miles north of the previously known limit of this species in Britain, in the Thrapston area of Northamptonshire, introduction was suspected. The possibility that the shell may have had a delicatessen origin was discussed, but was subsequently dismissed after Dr. Kerney confirmed that the shell was indeed Helix pomatia and not the Italian Helix lucorum. Details were sent to Dr. E. Pollard, at Monks Wood Experimental Station, for inclusion in his survey of the species.

In early April 1975 Dr. Pollard visited the site, and gained the impression that the colony was quite small. Later that month Mrs. Wilkin was able to locate a live specimen. Associated species recorded were:

Cochlicopa lubrica (Muller)
Helix hortensis (Muller)
Helix nemoralis (L.)
Helix aspersa Muller
Hygromia striolata (Pfieffer)
Hygromia hispida (L.)
Monacha cantiana (Montague)
Helicella virgata (da Costa)
Helicella caperata (Montague)

Discus rotundatus (Muller)
Arion hortensis Ferussac
Arion ater agg. (L.)
Vitrea crystallina (Muller)
Oxychilus alliarius (Miller)
Vitrina pellucida (Muller)
Agriolimax reticulatus Muller

More recently Mrs. Wilkin has been able to discover that the colony was established about 1950 by Mr. R. May, a local naturalist. It is understood that the original snails, about 25 in number, were obtained from a site at Leith Hill, Surrey.

Dr. Pollard reports that introductions of this species have been made to several sites in the country, but the new colonies have only survived for short periods. As the Great Limber colony has survived for a quarter of a century the site is obviously compatible with the species. Also the colony has lived through at least two extremely harsh winters, and appears to be permanently established. It is to be hoped that some degree of protection for the site may be possible in order to conserve this addition to the Lincolnshire fauna.

E. J. Redshaw, 9th. December 1975

JOINT MEETING WITH THE MALACOLOGICAL SOCIETY OF LONDON

AT CARDIFF 11 OCTOBER 1975

By kind invitation of the Director of the National Museum of Wales, members were given the opportunity to view the new Gallery of the Animal Kingdom as well as the rare treat of guided access to the famous Melvill-Tomlin collection of Mollusca. The Gallery excited favourable comment from our group, and one visitor from New York pronounced it superior to the comparable display in the Washington Smithsonian Institute. The Museum is to be congratulated on its imaginative combination of various modern visual display techniques. With the regrettable decline of University Systematic Zoology displays, galleries like this one at Cardiff will become more and more useful for teaching basic Biology to undergraduates.

During the afternoon Dr. Chatfield led a brief field excursion to the nearby Glamorgan Canal nature reserve at Whitchurch. This reserve is noteworthy as the site for a malacological survey carried out recently by Dr. Chatfield; in the course of which she recorded some 42 species including the immigrant sinistral pulmonate Physa gyrina. Of course, everyone wanted to add to the Chatfield list and we were successful in finding Zonitoides nitidus, Oxychilus helveticus and Hygromia striolata, all novelties. Fine weather made

the outing an enjoyable one and it was especially pleasant to have the energetic assistance of the wife and young children of our distinguished guest of the day, Dr. W. van Aardt from the Republic of South Africa.

All those who attended the Cardiff meeting agreed that it had been very enjoyable and instructive. Thanks were given to the principal organiser, Dr. June Chatfield, to the Museum authorities, who generously entertained us throughout the day, and to the young ladies who undertook on behalf of the Museum the preparation of the splendid luncheon served for us in the Court Room of the National Museum of Wales.

*Chatfield, J.E., 1974. The Mollusca of the Glamorgan Canal Nature Reserve, Whitchurch. Annual Bulletin of Glamorgan Naturalists' Trust, No. 13, 13 - 16.

T. E. Thompson

MARINE RECORDER

As from March 1976 I have resigned as Marine Recorder in favour of Mr. C. P. Palmer.

Relations with Council have been somewhat uneasy and communications have certainly been inadequate for smooth running of the work. There appeared to be no solution other than my resignation. I take this opportunity to thank all the people who have contributed to the Marine Mollusc Recording Scheme, not least the Area Representatives, and I hope that the ideas that they have discussed with me will be incorporated into future recording policy.

It is therefore ironic that this new list of Area Representatives which was prepared in November 1975 is now available (up-dated). Owing to unforeseen delays, the previous list was out of date when it appeared, and I apologise for any confusion which this caused. It is hoped that in future a new list will be available annually.

Shelagh M. Smith

FIELD MEETING RECORDING MARINE MOLLUSCS FROM THE GOWER COAST, SOUTH WALES, 1975

An energetic weekend meeting on the Gower coast was held in late September 1975. The party of over 20 members and friends was based at Rhossili where numerous landlords and landladies made us welcome and we were able to use the accommodation of the Outdoor Pursuits Centre at Middleton, close to Rhossili, in order to study the daily catch.

The Gower Peninsula is said to have a pleasantly dry, equable climate but it has not co-operated with the Conchological Society. On our 1974 visit we were greeted by deluges of rain; this time it was the turn of gales. Taken in conjunction with the fact that the forecast tides were weak, the gale-force winds prevented more than a token withdrawal of the sea on the promised ebb. Nevertheless the party made a number of valuable corroborative records and some new ones on the sandy beach as well as on the Worms Head causeway. The first day ended with barked shins, grazed knuckles and knees, and at least one total baptism. More than one member was actually blown to the ground by the gale's effect on the scenic cliff-top path. But spirits remained fairly high and we completed what we had set out to do.

On the second day (Sunday) the party split, so that a team went with Dr. Tom Gascoigne to Llanrhidian to search for the elusive sacoglossan opisthobranchs, while other groups visited other coastal localities. Two species of sacoglossans were recorded, the salt-marsh species Alderia modesta and Limapontia depressa, both new records for the Gower Peninsula. During Sunday the weather conditions ameliorated and Conchology suddenly became enjoyable again. But our poor volunteer aqualung divers had to go home relatively dry once again. As at the May 1974 Gower meeting, effective diving for molluscs

was profitless.

J. E. Chatfield & T. E. Thompson

Footnote

Since the above account was written, a paper by Dr. H. E. Quick published in 1949 (J. Conch., London. 23,84) has come to my attention. In this paper Quick records Limapontia depressa living on the north coast of the Gower peninsula between Gowerton and Penclawdd.

J. Chatfield

RESULTS OF THE COLLECTING ON THE GOWER 26-28 SEPTEMBER 1975

A: live record; B: freshly dead shells, 2 joined valves of bivalves; C: old worn shells or single valves of bivalves.

1. Rhossili Bay and Worm's Head Causeway

Species not found last year were:

<u>Lepidochitona cinerea</u>	A	<u>Alvania crassa</u>	B
<u>Barleeia unifasciata</u>	B	<u>Cingula cingillus</u>	B
<u>Cingula semicostata</u>	B	<u>Cingula semistriata</u>	B
<u>Circulus striatus</u>	C	<u>Clathrus clathratulus</u>	B
<u>Diodora apertura</u>	B	<u>Emarginula reticulata</u>	B
<u>Hydrobia ulvae</u>	B	<u>Patella aspera</u>	B
<u>Patella depressa</u>	A	<u>Rissoa parva</u> agg.	B
<u>Seneopsis planorbis</u>	B	<u>Tricolia pullus</u>	B
<u>Cylichna cylindracea</u>	B	<u>Diaphana minuta</u>	B
<u>Retusa truncatula</u>	B	<u>Anomia ephippium</u>	C
<u>Chlamys opercularis</u>	C	<u>Hiatella arctica</u>	B
<u>Kellia suborbicularis</u>	B	<u>Mysella bidentata</u> agg.	
<u>Nucula nucleus</u>	C	<u>Lasaea rubra</u>	A
<u>Nucula turgida</u>	C	<u>Solen marginatus</u>	B
<u>Thracia distorta</u>	B	<u>Turtonia minuta</u>	B
<u>Sepia officinalis</u>	B		

List for May 1974 in THE CONCHOLOGISTS' NEWSLETTER, June 1975, No. 53, pp. 438-440.

2. Oxwich Bay

Species not found last year were:

<u>Alvania crassa</u>	B	<u>Alvania punctura</u>	B
<u>Cingula semicostata</u>	B	<u>Cingula semistriata</u>	B
<u>Circulus striatus</u>	C	<u>Lacuna pallidula</u>	B
<u>Lacuna vineta</u>	B	<u>Tornus subcarinatus</u>	
<u>Acanthocardia aculeata</u>	C	<u>Cardium ovale</u>	C
<u>Cardium scabrum</u>	C	<u>Kellia suborbicularis</u>	B
<u>Lasaea rubra</u>	B	<u>Mysella bidentata</u>	B
<u>Nucula nucleus</u>	C	<u>Lutraria angustior</u>	C

List for May 1974 in THE CONCHOLOGISTS' NEWSLETTER, June 1975, No. 53, pp. 438-440.

3. Llanrhidian Salt Marsh

<u>Limapontia depressa</u>	A	<u>Alderia modesta</u>	A
<u>Macoma balthica</u>	A	<u>Mytilus edulis</u>	A
<u>Cardium edule</u>	A	<u>Hydrobia ulvae</u>	A

4. Creek in Llanrhidian Marsh

<u>Littorina saxatilis</u>	A	<u>Littorina littorea</u>	A
<u>Retusa obtusa</u>	B	<u>Mya arenaria</u>	B
<u>Scrobicularia plana</u>	B		

5. Whitford Sands & Whitford Point

<u>Buccinum undatum</u>	A	<u>Calliostoma zizyphinum</u>	C
<u>Gibbula cineraria</u>	C	<u>Hydrobia ulvae</u>	B
<u>Lora rufa</u>	B	<u>Littorina littorea</u>	A
<u>Littorina saxatilis</u>	A	<u>Nassarius reticulatus</u>	B
<u>Nassarius incrassatus</u>	B	<u>Natica catena</u>	C
<u>Nucella lapillus</u>	C	<u>Ocenebra erinacea</u>	C
<u>Patella vulgata</u>	A	<u>Acteon tornatilis</u>	C
<u>Chrysallida spiralis</u>	B	<u>Retusa obtusa</u>	B
<u>Abra alba</u>	B	<u>Acanthocardia echinata</u>	B
<u>Cardium edule</u>	A	<u>Chlamys varia</u>	C
<u>Donax vittatus</u>	B	<u>Ensis arcuatus</u>	B
<u>Ensis ensis</u>	B	<u>Ensis siliqua</u>	B
<u>Gari fervensis</u>	C	<u>Lutraria lutraria</u>	C
<u>Macoma balthica</u>	B	<u>Mactra corallina</u>	B
<u>Mytilus edulis</u>	A	<u>Nucula turgida</u>	C
<u>Nucula nucleus</u>	C	<u>Ostrea edulis</u>	C
<u>Pharus legumen</u>	B	<u>Pholus dactylus</u>	C
<u>Scrobicularia plana</u>	B	<u>Spisula solida</u>	A
<u>Spisula elliptica</u>	C	<u>Tellina fabula</u>	B
<u>Tellina tenuis</u>	B	<u>Venerupis pullastra</u>	B
<u>Venerupis decussata</u>		<u>Venus striatula</u>	B
<u>Sepia elegans</u>	C	<u>Sepia officinalis</u>	C

6. Broughton Bay

<u>Mytilus edulis</u>	A	<u>Littorina littoralis</u>	C
<u>Littorina littorea</u>	A	<u>Littorina saxatilis</u>	A
<u>Nucella lapillus</u>	A	<u>Patella vulgata</u>	A
<u>Cardium edule</u>	B		

Footnote

Some additional records from shell sand have been received from Mr. C. P. Palmer.

1. Worm's Head causeway; Rhossili: Odostomia plicata, O. unidentata, O. eulimoides, Chrysallida spiralis, C. interstincta, C. indistincta.
2. South end of Rhossili Bay: Odostomia plicata, O. unidentata, C. turrita, O. scalaris, O. eulimoides, Evalea obliqua, Chrysallida spiralis, C. indistincta, C. interstincta, Turbonilla elegantissima.
3. Oxwich Bay: Odostomia unidentata.

A HELICID NEW TO BRITAIN?

Dr. E. Gittenberger tells me that the Leiden Museum has some shells belonging to the helicid genus Cernuella from a British locality which are certainly not referable to our common species Cernuella (or "Helicella") virgata (Draparnaud). They are labelled as having been collected at Torquay, South Devon, in June 1955. No further information is available. In Dr. Gittenberger's opinion they are probably identical with a very local species living in Holland and, there, usually known as C. augustiniana (but which according to Dr. Gittenberger's most recent research should more correctly be known as C. aginnica (Locard)). The shell of C. aginnica is less globular than that of C. virgata, flatter above, and the umbilicus is distinctly larger. Both shell and anatomy are illustrated by Gittenberger, Backhuys and Ripken (Die Landslakken van Nederland (1970): figs. 161, 163). C. aginnica also occurs in France and Belgium.

However, in the absence of any information about the anatomy of the Torquay specimens, C. aginnica cannot yet safely be added to the British list. Species of Cernuella are notoriously hard to identify on shell criteria alone, and Dr. Gittenberger warns that there is an alternative possibility that the Devon specimens might prove to be a form of C. neglecta (Draparnaud), the

shell of which can resemble C. aginnica very closely (C. neglecta formerly lived at Luddesdown in Kent, but this sole recorded British colony is now extinct). Perhaps some member visiting Torquay will take the opportunity to search for living material for dissection and help solve this problem. Any very flat, widely-umbilicate "virgata" should be treated with suspicion.

M. P. Kerney

GENERAL NOTES

A HUNDRED YEARS STUDYING SHELLS

A small temporary exhibition will be on display in the National Museum of Wales, Cardiff, during June and July 1976 to mark the centenary of the Society. After July it is hoped to make the exhibition available to small museums through the Council for Museums in Wales.

The topics included will be a simple introduction to molluscs (fossil and living), the work of the Society, history of the Society, past and present co-operation between members of the Society and the National Museum of Wales and ending with some items of general interest and a show of colour slides.

If any members wish to see the collection which is not in the public galleries, would they please make arrangements in advance with Dr. Chatfield and avoid the first two weeks of July when staffing in the department will be limited.

THE JOURNAL OF CONCHOLOGY

The Editor is grateful to the members who kindly submitted suggestions and designs for the cover of the Journal. The first choice is a drawing of a Murex shell by David Reid. However, it is hoped to change the cover design from time to time and, therefore, we should like to retain the other drawings for future use. If anyone would like their drawing returned, please write to the Editor, Dr. C. R. C. Paul, Dept. of Geology, Liverpool University, Liverpool, L69 3BX.

SLUG PAINTINGS

The papers by H. F. Barnes & J. W. Weil on "Slugs in Gardens: their numbers, activities and distribution" (Journal of Animal Ecology, part 1: vol. 13, No. 2, pp. 140-175, Nov. 1944; part 2: vol. 14, No. 2, pp. 71-105, Nov. 1945), which were reprinted as publications 254 & 261 of the Dept. of Entomology, Rothamsted Experimental Station, have long been unobtainable. This means that the colour plates of slugs by Evelyn M. Tuke, vol. 14, plates 3, 4 and 5 have also been out of print. Having recently received a copy of "Snails and Slugs" by E. M. Tuke (School Natural Science Society publication No. 45), I was delighted to see that these beautiful plates have been reissued in this pamphlet, which is published for the Society by M. J. Wootton, 44 Claremont Gardens, Upminster, RM14 1DN. Plates 2 & 3 have been reissued in "Pests of Field Crops" by F. G. & M. Jones (Arnold).

A. E. Ellis

INTERNATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE: ANNOUNCEMENT: A.N.(S) 98

Required six months' notice is given of the possible use of plenary powers by the International Commission on Zoological Nomenclature in connection with the following names listed by case number: (see Bull. Zool. Nom. 32, part 4, 30th. January 1976).

2112 CIRCINAE in Aves and Mollusca: proposals to end the homonymy.

Comments should be sent in duplicate, citing case number, to the Secretary, International Commission on Zoological Nomenclature, c/o. British Museum (Natural History), Cromwell Road, London, SW7 5BD, England, if possible within 6 months of the date of publication of this notice. Those received early enough will be published in the Bulletin of Zoological Nomenclature.

17 February 1976. R. V. Melville, Secretary to the International Commission on
Zoological Nomenclature

A NOTE ON THE DENTITION OF DONAX VITTATUS (DA COSTA)

There appears to be confusion over the nature of the cardinal teeth in the left valve of Donax vittatus (da Costa). Jeffreys (1862-69, vol. 2, p. 404) refers to "two diverging cardinals and an intermediate tooth or denticle" and Forbes and Hanley (1848-53, vol. 1, p. 334) do not mention the cardinal teeth of the left valve. Tebble (1966, p. 141) states that the left valve has "two thin cardinal teeth of which the posterior is bifid". However he also notes (p. 142) that it is the anterior cardinal tooth which is bifid in the left valve of a species of the same genus, i.e. D. variegatus (Gmelin). I have examined a number of fresh valves of D. vittatus and found that it is always the anterior cardinal tooth that is bifid in the left valve. In fact all British members of the family Tellinidae have anterior bifid cardinal teeth in the left valve, bifid posterior teeth only occurring in the right valve.

References

- Forbes, E., & Hanley, S., 1853. A history of the British Mollusca and their shells, John van Voorst, London.
Jeffreys, J.G., 1862-69. British Conchology, John van Voorst, London.
Tebble, N., 1966. British Bivalve Seashells, British Museum (Natural History).

Peter Lingwood

THE AMERICAN MUSEUM of Natural History, Central Park West at 79th. Street, New York, has opened 'The New Hall of Mollusks and Mankind' (on the first floor near the 77th. Street entrance). A comprehensive exhibition covering all aspects of man's relationship with the Mollusks, past and present.

WANTED Parts 8-11 (bound as vol. 2) of J. W. Taylor's Monograph of the Land and Freshwater Mollusca of the British Isles. Please contact D. R. Worth, [REDACTED], Beckenham, Kent, [REDACTED], stating condition and price.

WANTED - Specimens of Theba pisana Muller from any overseas country, including those countries into which the species has been introduced. Small collections illustrating the range of variation in colour and form are required. Full data, locality, etc., is essential. Postage refunded if required. John Humphreys, [REDACTED], St. Ives, Cornwall, England.

WANTED - any books, journals, etc., on British marine and non-marine molluscs, including all of the standard works. A complete set of Taylor's Monograph is particularly required. Offers with full details to John Humphreys, [REDACTED], St. Ives, Cornwall, England.

Mrs. S. Piplani, [REDACTED], West Caldwell, N.J. 07006, U.S.A., is interested in building up a good collection of world-wide Chitons - flat girdle specimens. Is anyone willing to exchange, or to collect for her? Good locality data required. Please write.

Dr. W. Backhuys, [REDACTED], Rotterdam 3016, The Netherlands, has a catalogue of books on malacology which he will gladly send to any member who is interested.

Mr. G. Powell, W.O.II, Kuwait Liaison Team, [REDACTED], Kuwait, Arabian Gulf, would like to know if anybody wishes to receive marine shells from his area (until July 1977) in exchange for identification of his specimens. On a journey by dhow to a tiny island in the Gulf, Jayirat Kubbar, he found 3 beach specimens of Cypraea pulchra which, according to Burgess (The Living Cowries), does not extend that far up the Gulf.

SIGHTINGS OF ELYSIA VIRIDIS

I would be very grateful to receive from your members any information about sightings of Elysia viridis (Gastropoda: Opisthobranchia), i.e. where, when and on what seaweed species it was seen, and, if possible, perhaps a small sample of the seaweed could be sent to me at the address given:
Shelagh Doonan, Department of Microbiology, University of Aberdeen, Marischal College, Aberdeen, AB9 1AS, Scotland.

THE SOCIETY'S PUBLICATIONS

Back numbers of the Conchologists' Newsletter may be obtained from J. Collins, The Bookshop, 45 Westow Street, Upper Norwood, London, S.E.19 (telephone: 01-771 9719) at 25p each, or from the Hon. Secretary, Mrs. E. B. Rands, who can also supply copies of the Marine Concordance, 30p to members and 50p to non-members, and can take orders for back numbers of the Journal of Conchology. Papers for Students can be obtained from Dr. A. Rundle.

SHELLS FOR SALE

A fine selection of shells for the collector is available at Eaton's Shell Shop, 16 Manette Street, off Charing Cross Road, London, W1V 5LB (telephone: 01-437 9391).

FOR SALE

The Journal of Conchology, Vol. 28, No. 1-5 (mint condition) - Julia E. McDermid, [REDACTED], Scunthorpe, South Humberside, [REDACTED].

FOR SALE

'Conchologists' Newsletter', No. 2-55, excluding 6, 8, 12, 23, 35, 37, 38, 39, 48 and 49, and 'Papers for Students', No. 1-14 inclusive. £10.00 for the lot. D. R. Janson, [REDACTED], London, [REDACTED].

SHELLS ON STAMPS

Extend your interests to collecting these attractive items. Several extremely rare shells have been depicted on stamps. Large stock available from 1935 (Cayman Islands) to all latest issues. Also interested in buying and limited exchange.

A. Grainger, [REDACTED], Horsforth, Leeds, [REDACTED].

CENTENARY LUNCHEON - souvenir copies of the menu are available from the Hon. Secretary, Mrs. E. B. Rands, at 5p plus large S.A.E.

MRS. A. WILKINS, [REDACTED], Kidbrooke Gardens, Blackheath, [REDACTED], has several tropical shells and conchological books and reprints for sale. Please write or telephone [REDACTED].

MICHAEL AZALEKOV, Anloga Branch Library, c/o. The Post Master, Anloga, Ghana, wishes to exchange shells with Members.

STELFOX'S BOOKS AND SPECIMENS

The statement about Stelfox's books (Conchologists' Newsletter, March 1976) is misleading. Stelfox's conchological books came to the Merseyside County Museums (then City of Liverpool Museums) in 1956 when we also acquired his collection of non-marine Mollusca. Three volumes of his Journal and a considerable quantity of MSS. papers, photographs, records, etc. were given to me personally, and are now in my possession. His annotated copy of Taylor's Monograph is also in my hands.

Mrs. N. F. McMillan

FIELD MEETING - CHANGE OF DATE

Please note that the meeting at Camber, Sussex, is now on Saturday 21st. August (NOT 28th. as previously advertised).

RECORDING SCHEME FOR BRITISH MARINE MOLLUSCA

LIST OF AREA REPRESENTATIVES, 1976

Anyone gathering records for the Scheme should submit these to the representative of the Area in which they were found. Inevitably there will be changes of names and addresses. If in doubt write to the Acting Marine Recorder, Mr. C. P. Palmer.

SHETLAND (Area 1).	Dr. J. D. Peacock, Institute of Geological Sciences, Murchison House, West Mains Road, Edinburgh 9.
SUTHERLAND (Area 2).	Mr. R. G. Meiklejohn, [REDACTED], Thurso, Caithness, [REDACTED].
ORKNEY (Area 3).	Mr. A. Skene, [REDACTED], Stromness, Orkney, [REDACTED].
VIKING (Area 4).	Mr. C. W. Pettitt, Zoology Department, University Museum, Manchester, M13 9PL.
MORAY FIRTH (Area 5).	Mr. D. W. McKay, [REDACTED], Bourtie, Inverurie, Aberdeenshire.
ABERDEEN (Area 6).	D. W. McKay (see Area 5).
FIRTH OF FORTH (Area 7).	Dr. S. M. Smith, Natural History Department, Royal Scottish Museum, Chambers Street, Edinburgh, EH1 1JF.
NORTH SEA (Area 8).	C. W. Pettitt (see Area 4).
NORTHUMBERLAND (Area 9).	Mr. F. R. Woodward, Principal Keeper of Natural Science, Sunderland Museum, Borough Road, Sunderland.
DOGGER (Area 10).	Mr. J. E. Llewellyn Jones, [REDACTED], Southend, Essex.
YORKSHIRE (Area 11).	Mr. A. Norris, Natural History Department, Leeds City Museum, Municipal Buildings, Leeds, LS1 3AA.
WASH (Area 12).	J. E. Llewellyn Jones (see Area 10).
THAMES (Area 13).	Dr. Joan Llewellyn Jones, [REDACTED], West Mersea, Colchester, Essex.
EAST CHANNEL (Area 14).	Mrs. C. J. Pain, [REDACTED], Millbank, London, [REDACTED].
WIGHT (Area 15).	Mr. M. Goodchild, [REDACTED], Chichester, Sussex, [REDACTED].
PORTLAND (Area 16).	Mr. D. R. Seaward, [REDACTED], Yeovil, Somerset.
CHANNEL ISLES (Area 17).	Mr. R. N. Brehaut, [REDACTED], St. Peter Port, Guernsey.
PLYMOUTH (Area 18).	Mrs. S. M. Turk, [REDACTED], Camborne, Cornwall, TR14 OBH.
SCILLY ISLES (Area 19).	Mrs. S. M. Turk (see Area 18).
NORTH CORNWALL (Area 20).	Mrs. S. M. Turk (see Area 18).
BRISTOL CHANNEL (Area 21).	Dr. T. E. Thompson, Department of Zoology, The University, Woodlands Road, Bristol, BS8 1UG.

CARDIGAN BAY (Area 22).	Mrs. A. M. [REDACTED], Hilton, Bridgnorth, Shropshire, [REDACTED], and Mrs. J. L. Charlish, [REDACTED], Coldthorne Park, Wolverhampton, Staffordshire.
ANGLESEY (Area 23).	Dr. E. I. S. Rees, Department of Marine Biology, Marine Science Labs., Menai Bridge, Anglesey.
LIVERPOOL BAY (Area 24).	Mrs. N. F. McMillan, [REDACTED], Bromborough, Merseyside.
SOLWAY (Area 25).	Miss M. M. Milne, [REDACTED], Maryport, Cumbria, [REDACTED].
ISLE OF MAN (Area 26).	Dr. A. R. Brand, Marine Biological Station, Port Erin, Isle of Man.
DUBLIN (Area 27).	Dr. B. M. Healy, Zoological Department, University College, Belfield, Stillorgan Road, Dublin 4.
BELFAST (Area 28).	Mrs. H. C. G. Ross, Zoology Department, Ulster Museum, Botanic Gardens, Belfast, BT9 5AB.
CLYDE & ARGYLL (Area 29).	Miss B. Rae, [REDACTED], Dervaig, Isle of Mull, [REDACTED].
MINCH (Area 30).	Dr. S. M. Smith (see Area 7), and Mr. S. Angus, [REDACTED], Stornoway (for Outer Hebrides only).
LEWIS (Area 31).	S. Angus (see Area 30).
UIST (Area 32).	S. Angus (see Area 30).
NORTH DONEGAL (Area 33).	Mrs. E. Platts, [REDACTED], Belfast, [REDACTED].
DONEGAL BAY (Area 34).	Dr. L. S. Garrad, Department of Natural History, Manx Museum, Isle of Man.
MAYO (Area 35).	Mr. C. Hayton & Miss H. Price, Department of Zoology, University College, Cathays Park, Cardiff.
GALWAY (Area 36).	Dr. B. F. Keegan, Zoology Department, University College, Galway, Eire.
FASTNET (Area 37).	Mr. M. Long, [REDACTED], Dingle, Co. Kerry, Eire.
CORK (Area 38).	Mr. L. S. Atkins, [REDACTED], Hettyfield, Douglas, Co. Cork, Eire.
NYMPHE BANK (Area 39).	C. Hayton & H. Price (see Area 35).
LABADIE (Area 40).	Dr. N. A. Holme, The Laboratory, Citadel Hill, Plymouth, PL1 2PB.

Produced by THE CONCHOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND

ECOLOGY NOTES ON HELFORD PASSAGE, CORNWALL

In a short article by Gardiner (1927) called 'Ecology notes on the *Zostera* beds in the Helford River, Cornwall', he describes the eel-grass beds as being "on the right bank about two miles up the inlet", so obviously he is referring to Helford Passage rather than the *Zostera* in the vicinity of Treath, across the water at Helford. Alan Gardiner is writing of a particular visit in the late summer of 1926, but he had in fact known this prolific site since 1906 when he first came to Cornwall as a Biology and Chemistry teacher at Falmouth. Although he left the county again after a few years, he visited it many times before his death in 1951, and as he was Marine Recorder of the Conchological Society from 1931 until he died, Cornwall was commonly cited in his lists.

In September 1972, with a co-tutor, Mr. R. Burrows, I had an Exeter University Extra-Mural Dept. field day at this site, and the following notes are based mainly on the survey and recording work we undertook, with the addition of records from other sources, as indicated, as well as the observations made by Alan Gardiner. Many additional species have been recorded from "Helford Estuary" but such generalized records have not been included here, and careful distinction has been made between Helford on the south (Meneage) of the estuary, and Helford Passage on the north (Mawnan) side. Conversely I have attempted to mention every known species-record in this compilation. It is hoped that the following account will serve as a guide to this rich assemblage of littoral life, and that any future visitors will inform me (or the Biological Recording Unit of the Institute of Cornish Studies, Trevenon House, Redruth) of any changes, additional species, etc..

At a time when we have reason for believing the many subjective estimates that certain stretches of the British coastline are less productive than they were, it is pleasant to be able to find so much at Helford Passage that has remained much the same for almost half a century. However as each decade sees an increasing number of university, teaching college and school groups coming to the Mecca that is Cornwall, it is essential that stone-turning, digging and collecting are kept to a minimum if the populations of certain inter-tidal creatures are not to be depleted. Habitat disturbance and trampling is also caused by raking of the extensive cockle and winkle beds here and at Helford.

Helford Estuary has been described as a "sheltered arm of the sea", for it is a drowned valley (a ria) and the influx of water from the many streams is remarkably small. Most of the creeks, like Frenchman's Pill, made famous by Daphne du Maurier, are very silted, the main molluscan inhabitant being *Scrobicularia plana*, which Gardiner, and more recently Bristol University students, have recorded as being common at Port Navas. It is at Port Navas that the Duchy has a large oyster farm where 'ports' (Portuguese Oysters - *Crassostrea angulata*) are fattened alongside our native species. In 1973 over half a million Pacific Oysters were laid here; being a faster growing species, it may eventually replace the 'ports'. The Cornish custom of collecting trigmeat (molluscan shell fish) on Good Friday, is not confined to the cockles to be found at Helford and Helford Passage, but also includes the winkles which occur in vast numbers near the *Zostera* beds. The *Zostera* itself seems to have recovered in all its Cornish stations since its depletion in the 1930's, and to be spreading. However, a report by a tutor, from Westminster College of Education, Oxford, to whom Helford Passage is known from past visits, suggests that at least in the early part of 1975 an inundation of silt, perhaps washed down by excess rain, had covered much of the young growth and the surface

fauna; a visit to Helford in March 1975 showed that there had also been an increase of mud there. In May 1975, after this incursion of mud, R.B. found only a single specimen, lying on the surface, of the usually common slime tube worm, Myxicola infundibulum. The main difference between Helford Passage shore, and that of Helford, is that the latter has a wealth of slate clutter which creates a hard substrate for many plants and animals, as well as cover for such mobile animals as fish and crabs.

The part of the shore which received most attention on 18.3.72 when the bulk of these records were made, may be indicated by grid ref. SW762266: this represents the central point of the two or three acres of Zostera marina uncovered by the lowest of the spring tides. The roots of the vigorous plants make the beds firm and easy to walk on, although digging reveals a soft black silt, full of organic debris, with an admixture of shells, shell fragments, a little gravel and some stones. Certain of the shells (containing the living animals) seem to be exceptionally soft, perhaps due to the decay acids which blacken the shells. The comparative firmness of the substrate is enhanced by the presence of a prodigious number of Sandmason Worms (Lanice conchilega) which were the dominant faunal element in a broad zone, and which yielded counts of many hundreds per sq. metre. Lower on the shore they were replaced by a narrower zone of Peacock Worms (Sabella pavovina). Although there are few stones of any size to form a hard substrate, the small amount of bottom movement makes it possible for animals and plants to find secure settling places on the smallest pieces of shell and stone which may lie at or just below the surface. Sponges, lobular in form, appear to grow in the very mud itself, whilst small stones have attached to them scallops, mussels and oysters, as well as providing a base for such gastropods as winkles and slipper-limpets. As well as the American Slipper-limpet dating in Britain from the 19th. century, Australian Barnacles (Elminius modestus) and Japanese Tunicates (Styela clava = S. mammiculata) are quite common, and were introduced about 1940 and 1950 respectively. Many small algae are to be found on these stones, and a single large tide pool with bigger stones contained massive examples of the oarweeds, Laminaria saccharina and Saccorhiza polyschides: this oasis of Laminaria 'forest' has a diverse fauna, including Patina pellucida.

The molluscan fauna may be conveniently discussed under the following habitats and micro-habitats. Note that all were found alive and *in situ* unless otherwise stated, and that all were recorded by R.B. & S.M.T. in March 1972 unless another source is cited.

IN THE GRAVELLY MUDS

Adult Buccinum undatum are common, ploughing immediately below the surface, often accompanied by another scavenger, Nassarius reticulatus. Empty shells of Turritella communis abound, and living specimens have been recorded by B.U., but only one was found alive by R.B. & S.M.T. Solen marginatus and Lutraria lutraria are especially common, although, strangely, Gardiner writes that shells of the latter were common, but in twenty years he had found none alive, whilst the only Solen marginatus he saw had been deposited on the beach by people working a shrimp net from a boat. Loripes lucinalis, a rather local species, is also common in this habitat, with Mya truncata, Lucinoma borealis, Venerupis pullastra, V. aurea and Cardium exiguum: Gardiner found C. scabrum as well as C. exiguum, but the former was commoner off shore. Acanthocardia tuberculata has been found in the vicinity of Treath at Helford, but not as yet from Helford Passage. In the burrows of the numerous sipunculoids, Golfingia spp. (both G. vulgaris and G. elongata have been identified from here by Dr. P. E. Gibbs) and the sea cucumber Labidoplax digitata, Gardiner found "a few examples of Mysella bidentata and Lepton sp." The latter was probably Epilepton clarkiae which is commensal with Golfingia elongata.

IN THE SANDIER MUDS

These flank the Zostera beds, and Gardiner lists from them, Ensis siliqua, E. ensis, Venus striatula, Spisula subtruncata, Venerupis pullastra and V. aurea (all also found by R.B. & S.M.T.); Venerupis decussata (also found in Zostera beds by W.C. in 1970); Mya arenaria (also found by B.U.); Venerupis rhomboides, Spisula solida and Mactra corallina. Gari fervensis and Tellina squalida he found, washed up by the tide. B.U. students record Montacuta ferruginosa associated with Echinocardium sp., but whether this was in the

sandy or gravelly substrate is not noted. Tellina fabula (B.U.) and T. tenuis (B.U. & W.C.) are additionally reported. The Edible Cockles are confined to a higher and drier area - The Bar - a little further to the west, and corresponding to a similar cockle habitat to the east of Treath Beach at Helford.

ROOTS OF THE ZOSTERA

"A considerable number of specimens" of Haminoea navicula were found when Gardiner thrust his hand 4" to 6" in the mud around the roots.

LEAVES OF THE ZOSTERA

Gardiner writes that Rissoa membranacea, Bittium reticulatum, Cantharidus striatus and C. montacuti "occurred in thousands on the weed when submerged, but were difficult to find when high and dry." On this occasion Rissoa membranacea was found in fair numbers and empty shells of Bittium reticulatum were plentiful (a dozen living ones were found later the same month by A.B. (B.U.)) but neither species of Cantharidus was seen, although C. striatus had been found at Helford in large numbers in 1962. Also on the Zostera were numerous green egg circles of Lacuna vincta and some specimens of Gibbula umbilicalis.

ON THE MUD OR ATTACHED TO STONES OR SHELLS ON OR NEAR THE SURFACE

Edible Winkles occur in immense numbers on either side of the Zostera flats, and in small numbers on or under stones amongst the plants. Other prosobranchs in this habitat are Gibbula cinerea, Crepidula fornicata, Littorina saxatilis, Calyptraea chinensis (less common than in the stonier area at Helford), Ocenebra erinacea (W.C.), Calliostoma zizyphinum and Gibbula magus (both B.U.). Opisthobranchs recorded as "crawling on the mud" by Gardiner, are Aplysia punctata, Archidoris pseudoargus and Pleurobranchus membranaceus, all of which have been recorded in the 1970's. Gardiner observes that Aeolidia papillosa is usually to be found in the spring and early summer. The nudibranchs Archidoris stellifera, Acanthodoris pilosa, Eubbranchus exiguus and Precuthona peachii have all been recorded by B.U., and the last one, which feeds exclusively on the hermit-crab hydroid (Hydractinia echinata) was also found spawning by S.M.T. in March 1972. Facelina auriculata, Onchidoris fusca and Rostanga rufescens are all listed by R.U. Bivalves include oysters (Ostrea edulis); mussels (Mytilus, none of which were examined in detail: Gardiner writes that "M. edulis and its var. galloprovincialis are common" on the "extensive cockle beds"); scallops (Chlamys varia and its subspecies purpurea); and saddle oysters (Anomia ephippium and Heteranomia squamula). Modiolus barbatus has been recorded by W.C. A species for which one would think that there was no available niche, is Hiatella (arctica type), but this was found amongst the byssi of Mytilus, a micro-habitat which was found to be surprisingly rich by Mr. Robin Harvey when he investigated the mussel reefs on the north coast of Cornwall in 1972.

UNDERSIDE OF STONES

Lepidochitona cinereus is common and there is a record (B.U.) of Lepidopleurus cancellatus. At Helford, Acanthochitona crinitus and the local A. communis have been collected by B.U., whilst in silt under stones A.N. reports that Cingula semicostata is abundant. Acmaea virginea occurs in small numbers, Trivia monacha is occasional and Nassarius incrassatus is numerous. Small numbers of Littorina saxatilis and juvenile L. littorea are also to be found.

ROCKY REEFS FRINGING THE SHORE

These are gently sloping Devonian slates with a few small rock pools. Zoning of the wracks is typical of a sheltered shore with Channel Wrack (Pelvetia canaliculata) succeeded by Spiral Wrack (Fucus spiralis), Bladder Wrack (F. vesiculosus) with some Knotted Wrack (Ascophyllum nodosum) and then a belt of Fucus serratus. Patella vulgata is present, although not as common as on shores with a sparser weed cover, and it is too sheltered for Littorina neritoides to be found in any abundance. Littorina saxatilis, L. littoralis and L. littorea all occur, with some Gibbula umbilicalis in the rock pools, and a narrow zone of Monodonta lineata. Individuals of Nucella lapillus can be

found throughout the reefs. Runcina coronata has been listed by R.U. from rock pools and the same students record Cingulopsis fulgida and Barleeia rubra, presumably from weed washings. A.N. reports Cingula cingillus and Leucophytia bidentata as both being abundant at Helford, and he found Lasaea rubra to be all of the white variety.

Even with some eighty species, this catalogue of species will not be exhaustive. Rissoa parva will certainly be present, and the cast-up shells of such bivalves as Modiolus adriaticus (form ovalis) and Macoma balthica suggest that these are in the vicinity. Much depends on searching in the appropriate places, and it is hoped that this article will stimulate further work at this site, and similar compilations for other British shores.

SOURCES

- A.N. Adrian Norris, Leeds Museum: visit to Helford (SW760261) on 25.9.1974.
B.U. Bristol University Field Courses, with Prof. R. B. Clark, Dr. T. E. Thompson & Mr. A. Bebbington: 1963-1975.
GARDINER, A., 1927 Ecology notes on the Zostera beds in the Helford River, Cornwall. J. Conch. 18: 147-148.
R.B. & S.M.T. Roger Burrows & Stella Turk: Exeter University Extra-Mural Dept. Field Day, 18.3.1972. All records, unless another source is cited.
R.U. Reading University Field Courses: 1960's and 1970's: Dr. Warner & Dr. V. Fretter.
W.C. Westminster Teacher Training College, Oxford Field Courses: 1960's-1975.

Stella M. Turk

PEARLS

An article, consisting of a blend of facts and legends, appeared under the above title in the February 5, 1859 issue of "Household Words" - a weekly journal conducted by Charles Dickens.

From this rather long work I have extracted a few items which I hope will be of some interest to the readers.

Touching on the primitive belief that pearls are produced from a diet of dew the author says:-

"Pliny gravely tells us, that the oyster produces pearls from feeding upon heavenly dew. Our own early writers entertained the same notion; and Boece speaking of the pearl mussel of the Scottish rivers, says, that 'these mussels, early in the morning, when the sky is clear and temperate, open their mouths a little above the water, and most greedily swallow the dew of heaven; and after the quantity of the dew which they swallow, they conceive and breed the pearl.' Harrison says, that the pearls are also sought for in the latter end of August 'a little before which time the sweetness of the dew is most convenient for that kind of fish which doth engender and conceive them.'"

Lacking the general knowledge which, no doubt, the author of the article expected from his readers, I spent some time in the local library trying to identify the two writers mentioned by him.

It would appear that Boece or Boethius, Hector was a native of Dundee born in about 1465 and who died in 1536. He was a scholar who at one time was head of the Theology department at the fairly new University of Aberdeen. His annual salary for this position was £2.4.6. A very low figure indeed, even allowing for the then purchasing power of the Pound. There is, however, no record of any industrial action by this underpaid academic and his colleagues!

Harrison is much more difficult to locate. In the absence of even an initial he could be any one of a number of 16th. or 17th. century divines, scientists or writers.

There follows a long dissertation on the mechanics by which the pearls are actually formed and some notes on the various pearl-producing species and on

the, then, mostly extinct fisheries.

Margaritifera margaritifera is still being fished occasionally in the river Tay. It is, therefore, curious to note the author's remarks stating that the fishery in the Tay ended at the close of the 18th. century and, by implication, had not been revived at the time of writing the article (1859). He writes:-

"The Scottish pearl fishery continued until the end of the last century, especially in the river Tay, where the mussels were collected by the peasantry before harvest time. The pearls were generally found in old and deformed specimens; and round pearls about the size of a pea, perfect in every respect, were worth about three or four pounds."

I would like to conclude with one more paragraph which I found rather baffling and so, apparently, did the author. He quotes an earlier article on the subject thus:-

"A curious account, published about thirty years ago, says, that the pearl mussel is found in abundance in the River Conway, and is collected by means of the natives of North Wales, who obtain their livelihood entirely by their industry in procuring the pearls. When the tide is out they go in several boats to the bar at the mouth of the river, with their sacks, and gather as many shells as they can before the return of the tide. The mussels are then put into a large kettle over a fire to be opened, and the fish taken out singly from the shells with the fingers and put into a tub, into which one of the fishers goes bare-footed, and stamps upon them until they are reduced to a sort of pulp....."

There follows a detailed account of the method by which the pearls are extracted from the pulp and sold.

If the shells in question were supposed to be Margaritifera margaritifera what were they doing in an estuarine locus, and if they were not margaritifera, what were they?

R. Fresco-Corbu

SACOGLOSSAN NOTES (2)

Classification

A few brief remarks, based on Fretter and Graham (1976), may help the general reader to appreciate the systematic position of the order Sacoglossa.

The three major classes of the phylum Mollusca are Gastropoda, Bivalvia, and Cephalopoda. The class Gastropoda has three subclasses: Prosobranchia, Opisthobranchia and Pulmonata. The Opisthobranchia is divided into two super-orders - Tectibranchia and Nudibranchia. The Sacoglossa is one of the six orders of the Tectibranchia. Therefore sacoglossans are not nudibranchs, though in non-technical language species of both groups are called sea slugs.

Bivalved gastropods

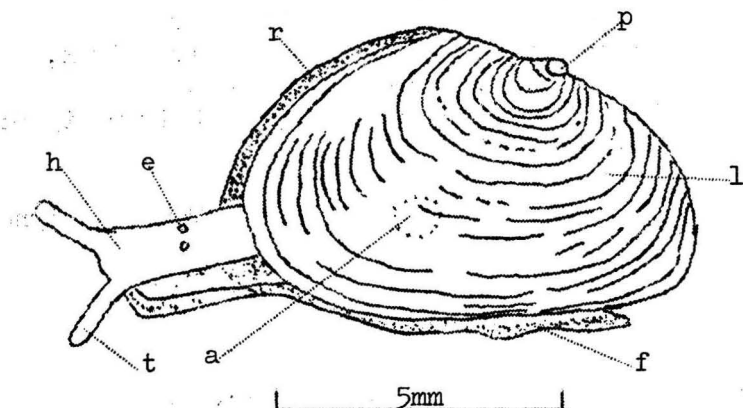


Figure 1. Tamanovalva limax

a bivalved gastropod (order Sacoglossa)

f, foot; h, head; l, left valve; p, protoconch; r, right valve; t, tentacle; a, adductor muscle scar; e, eye.

In 1959 Kawaguti and Baba caused quite a sensation in the zoological world by their discovery and description of Tamanovalva limax. Only one or two related species were known and they had been classified as bivalves. The living animal, however, has a head with tentacles, a buccal mass with a single longitudinal row of large teeth and other features which clearly show it belongs to the class Gastropoda, order Sacoglossa. These curious molluscs are now known as bivalved gastropods. They are found in tropical and sub-tropical waters and feed on green seaweeds of the genus Caulerpa. Since 1960 five new species of bivalved gastropods have been discovered by R. Burn, M. Edmunds and A. Kaye.

How do these sacoglossans acquire their bivalved shells? When the veliger larva settles the larval shell (= protoconch of the adult) is retained. This is enlarged by deposits from the mantle border along both sides of the body and so the two valves are formed. Meanwhile a hinge and an adductor muscle are developed. Since the protoconch is firmly attached to the left valve this could be regarded as a gastropod shell and the right valve as a special accessory structure. When in danger the head and tail are withdrawn inside the valves and then the animal looks just like a bivalve.

The shells of bivalved gastropods have been found in the Eocene beds of the Tertiary. Naturally, they were classified as bivalves and had to be transferred to the class Gastropoda. Fossil shells are extremely rare - some good ones have been found in the Paris Basin. They should also be present in the Eocene deposits of the Thames Basin and those of Hampshire, but, as far as I know, no good specimens have been discovered. It is possible that bivalved gastropods originated in the Jurassic period or earlier. Large faunal changes, however, can take place rapidly and they could have evolved during Eocene times, a period favourable to evolution as is shown by the rise of the mammals. No fossil sacoglossans have been found earlier than the Eocene or Late Chalk.

To help in the identification of shells, living or fossil, their main features are given:

Protoconch diameter 0.2-0.3mm; often appears deceptively large in young shells; may be erect, or inclined so that its upper part lies over the right valve; firmly attached to the left valve; has about $1\frac{1}{2}$ whorls; is more robust than the thin and fragile valves.

Left valve diameter commonly 2-3mm, but varies with the age of animal and the species - can be as large as 10mm; anterior margin usually more rounded than the posterior; first growth line some distance from the margin of the protoconch; radiating striations may be seen; an adductor muscle scar is present in anterior region and retractor muscle scars may be noted.

Right valve diameter, growth lines, striations, muscle scars, as for left valve; both valves are covered by a horny periostracum and are joined by a straight hinge - sometimes one or two teeth are present.

References

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|-----------------------------------|---|
| Boettger, C.R., 1962. | Gastropoden mit zwei Schalenklappen
Verhandlungen der Deutschen Zoologischen
Gesellschaft Vienna: 403-439. |
| Fretter, V., and A. Graham, 1976. | A functional anatomy of invertebrates.
Academic Press, London. |
| Kawaguti, S., and K. Baba, 1956. | A preliminary note on a two-valved
sacoglossan gastropod <u>Tamanovalva limax</u> ,
n.gen., n.sp., from Tamano, Japan.
Biological Journal of Okayama University 5:
177-184. |

Tom Gascoigne

MOLLUSCAN MOVIES

I was selected to participate in the Festival of Expanded Cinema in January 1975 at the Institute of Contemporary Art, London. As the name

implies, the show was basically concerned with film and its direct (or indirect) relationship with cinema.

The piece which I submitted for the show was a series of 16mm film loops entitled "Easy Glider", the subject of the film being two adult specimens of Helix aspersa. Not wishing to become involved here in the artistic and cinematic qualities which were evident in the piece, I will endeavour to explain its more basic intentions.

First, that contemporary Art is generally void of content, and it is perhaps necessary to inject into it a more unusual and educationally stimulating subject. This could be any subject under the sun, but being particularly interested in land molluscs, my choice was quite obvious.

Snails are conveniently easy to film as they cannot run away, and are easy to keep in captivity, therefore remaining close at hand. Helix aspersa was chosen for its availability and, more readily, for its size.

I must stress that the film was not intended to include any important biological observations, but as stated earlier, merely to inject a rather unusual biological subject into a piece of contemporary art, and to combine the two subjects, which have drifted increasingly apart since the days when the pre-occupation of the artist was with the human form, requiring him to be a competent biologist and anatomist.

Should the film be shown in another location, the accompanying soundtrack will contain more detailed information about the species, now that the initial step has been made.

Ron Carr

MOLLUSCAN VERSES

Land snail who slides o'er moss and rock
An interesting fellow is -
The snail who swims in pond and brook
An interesting fellow is -
Sea-snail who creeps in sea, on shore
An interesting fellow is -
These rhymes are dedicated to
Those interesting fellows who
are interested, Snails, in you!

The lordly Chambered Nautilus has, in his vaulted shell
A room for all his needs and several guest chambers as well.
Mind you - I do believe he mimics "Bluebeard" in his way,
For he will stop young damsel fish to pass the time of day
And then a friendly tentacle he'll round her shoulders rest
Politely to escort her in - a (tasty) honoured guest.
Locked in dark chambers by their host, his guests await their fate -
Scribbling "Last Wills and Testaments" before it is too late.

No doubt you think this fanciful - the verse is, that's for sure!
(Whoever heard of Nautilus with more than one front door?).
It's true he's pompous, preys on fish and eats them on the spot -
But to be fair, a "Bluebeard" is the one thing he is NOT!!!

Helicigona lapicida is, as you know well,
A mollusc justly proud of his neat keeled shell.
The original design this snail drew up himself,
So his house would never roll from a high top shelf.
And also, when upon his back his home he'd hump,
It would balance gently there without a sway or bump,
Whilst other snails less fortunate (or with less brain),
Can only keep the balance right by sweat and strain!

Aquatic Ampullaria, the handsomest of snails,
A pulmonate, with banded shell, (from Trinidad he hails) -
Is really such a gentle snail, a sweet and model charge.
There's just one thing - I do so wish he wasn't quite so large.

He eats the rotting plant remains and keeps his home ground clean,
His banded shell, in humbug style, quite perfect, shines pristine.
Then in due course his wife lays eggs on dry land as is right;
(Their pale green tint, so delicate, makes them a lovely sight.)

The youngsters hatch and promptly help their parents clean the home,
And loudly rasp at lettuce leaves before they start to roam.
This noisy eating drives me mad - deprived of sleep am I -
I think I'll shift their home up to the attic bye and bye.

Pat Halliday

EVENING BEACH AT FLAMBOROUGH HEAD

(To The Conchological Society)

I wandered down by the shore-licked sea
And the curled wrack was all about me.
Old waves spent their fortresses of might,
And plankton, interminable sea drift,
Gave its phosphorescent jewellery of light.

My hand whisked rich algal slime
And parted kingdoms showed them unto me.
They glowed like coloured beads of life,
Caught to a strand of brown rife.
Dark worlds intermingled where
Two brown eyes met there
A hundred eyes on different rocks.

Who knows what each torch beam tramples
With its light? Tentacles and scuttling feet
Greet the wonderer, and are gone
To their safety-sided low discreet.
They wait and no-doubt tremble,
Raise a cautious operculum and
Slide from underneath. Some cease to resemble,
Shift and are recognised.

All this while the fog-horn lighthouse booms,
And grey mist 'twixt greyer grey looms
A warning and a frown.

Peter Topley (Junior Member), March 1976

L'ESCARGOT

I

The snail responds to any criticism
By retreating within his philosophical system.

II

A lover half crazed for a worthless tart
Cried: "Curse this passion which breaks my heart!"
The indifferent snail deplored his plight:
"I couldn't care less, being hermaphrodite."

III

Deep in a snail's now empty home
Is found a stately pleasure dome,
Within which hangs upon the wall
A looking-glass extremely small--
No use at all to you or me,
A mirror for an ant, may be.

IV

His way is slow but very sure
The whole length of the wall to endure
And mount towards the vault azure.

L'ESCARGOT ALPINISTE

The snail to scale the heights intent
With sack on back goes forth in quest;
The snail to scale the heights intent
Sets out the mountain to digest.

After Paul Claudel, who wrote sixteen poems on the snail, five of which are included in his "Oeuvre Poétique", Bibliothèque de la Pléiade, Editions Gallimard, 1967.

A. E. Ellis

MOLLUSCAN PLACE-NAMES: SUPPLEMENT

(Newsletter No. 52, page 412)

"We think this name, 'Cow-hole', must be a contraction of 'Cowrie-hole', from its having been a hole in a rock leading to the spot where cowrie shells are to be found in abundance." Cornelius's Guide to Dawlish, 4th. edition, p.33, footnote. (I have never found a cowry at Dawlish).

"Many of the 'Winch' names have reached their present form by a long process of alteration, but there are one or two, like Winchcombe and Winchelsea, which recognisably embody an old word wincle, meaning 'corner' or 'bend', and bearing a strong flavour of our own word 'winkle'. Which raises the question: Did the shell-fish get its name from the same old word meaning 'bend'? It would certainly provide a very picturesque description; but even so we must abandon any ideas about Aldwinkle having originated around a signpost made of a pole supporting an old winkle. Aldwinkle was, in fact, the nook or corner occupied by a man called Ealda - 'Ealda's wincle.'" H. G. Stokes, "English Place Names" (Batsford, 1948), p. 24.

"Oyster Gate - A water gate on the Thames, near London Bridge, opposite the church of St. Magnus. The name seems afterwards to have been given to the lane leading down to the gate from Thames Street." Oystregate, 1259. H. A. Harben, "A Dictionary of London" (Herbert Jenkins, 1918).

Mussel Rock, Brixham, S. Devon. Oysterber, Bentham, near Ingleton, West Riding. Oyster Bank, Workington, Cumberland. Cockle Bight, Scolt Head Island; Cockle Haven (Grub's Haven), one of the former outlets of the river at Great Yarmouth, Norfolk. Cockle Edge, Ingbirchworth, Penistone, W.R. Buckie, Banffshire: alternative derivation, Gaelic beucach, noisy, roaring, especially of the sea. Shell Farm, four miles east of Ely: Great Shell was near Shippea Hill, Little Shell near Wellmore Farm. Shell Lane, Calverley, near Leeds.

Snailcroft, Great Maplestead, Essex. Snail's Paddock, Snail's Pond Hill, Great Snails, Snail's Ground and Snail's Bottom are in the vicinity of Radstock and Midsomer Norton, Somerset. River Snail, Cambridgeshire. Snailshaw,

Arnford, near Hellifield; Snail Green, Bingley, near Keighley; Snailsden and Snailsden Pike, Holme, W.R. Slugwash Lane, Wivelsfield Green, Sussex. Sluggs Green, Burrough, Cambs.

Mrs. Mary Saul has reminded me of Crawley-cum-Snailby and Snaily parish in Thackeray's "Vanity Fair", chapter seven, and Oysterstown in chapter twenty seven.

Dr. June Chatfield has kindly sent a photograph of a signpost pointing to Snailing Lane, just west of Greatham, Hampshire, grid reference 41(SU)767304. She also supplies some information about Shell Island, Mochras, one mile west of Llanbedr, Merionethshire, 23(SH)55-26-, which is a sandspit connected with the mainland by a causeway submerged at high water. Dr. Chatfield writes: "A small booklet listing the shells found at Shell Island was published in Barmouth - there is no date on it, but it appears to be twentieth century and I would guess the 1930s. I found two references to Shell Island, one by the Reverend Carlton Greene in 1891 and the other by J. D. Dean in 1906, and both of them were of the opinion that the reputation of Shell Island exceeded its actual worth as a collecting site, and Davy Dean was particularly unimpressed. However, when I read this out at the meeting in March (13.iii.1976) Mrs. Brockbank (area representative for the Cardigan Bay census area) was of the opinion that it was reasonably good for marine molluscs and what one found depended on time and tide. The references are: Dean, J.D., 1906, The Shell Beach at Mochras Island, *J. Conch.* 11:297; and Greene, C., 1891, Marine Shells of North Wales, *The Conchologist*, 1:1-5."

The following is Davy Dean's disparaging estimate of the conchological endowment of Shell Island: "To the scientifically minded casual visitor to North Wales I hold with Mr. J. Cosmo Melvill that Mochras Island is a delusion and a snare. If a conchologist is in this neighbourhood and is not desirous of filling a clothes basket with old valves of *Pecten maximus* and *Lutraria*, etc., but is after something rare and strange, may I suggest that the train be taken to Harlech, instead of Llanbedr, the station for 'The Shell Island'."

A. E. Ellis

CORRECTION: "An Old English Riddle," Newsletter No. 45, p.316, line 2: insert flode after ic. I wonder how many readers spotted this omission. A.E.E.

NATURAL HISTORY/MALACOLOGICAL ILLUSTRATED LITERATURE

FROM THE 15th. TO THE 18th. CENTURY

Catalogue of an Exhibition held in the Civic Library of Mantua,
10th. - 31st. May 1975

By Giancarlo Schizzerotto, Mario and Attilio Zanca,
and Dario A. Franchini: 86pp, 8pls., pub. in Mantua

Although this booklet is described as a catalogue and was produced in a limited edition of only 1,000 copies to accompany the exhibition, it is chiefly remarkable for the fascinating historical background given concerning early naturalists and the formation of natural history collections several centuries ago. The exhibition was arranged by a local Natural History Group in co-operation with the Italian Malacological Society and the illustrated works on natural subjects selected for display came from the City of Mantua's own valuable Library.

The catalogue consists of several passages of explanatory background material with a selection of plates from the works exhibited, followed by full bibliographical details of each of the 69 rare and precious books displayed. The first passage deals with the history of Mantua and its liberal patron Princes or Gonzaga who employed clerks to make copies of original works by Pliny, Aristotle, mediaeval religious writers and others on the natural sciences, medicine and astrology. The introduction of the printing press to Mantua in 1472 gave a tremendous impetus to the number of books in circulation

and scientific and philosophical works derived particular benefit from developments in printing. The catalogue supplies details of many of the books which were written at that time.

Fresh interest in natural history was aroused in Mantua by the endowment of civic botanical gardens at the end of the 16th. Century, when successive Gonzaga began creating their own collections of natural objects. An early 17th. C. Duke Ferdinand founded a museum with departments for geology; corals, marine plants and various shells; trees and their fossil remains; and animal relics such as teeth and bones. However, much of this material had been dispersed by the end of the 18th. Century when the Austrian Empress Maria Theresa founded the Academy of Mantua amid renewed local interest.

The Civic Library of Mantua was opened on 30th. March 1780 and received contributions of books from other libraries in Lombardy and Austria, such as the works of the Swiss naturalist Albrecht von Haller which were purchased for it by Maria Theresa herself, as well as many precious volumes sent there for safety during the disturbances of the Counter-Reformation and the Napoleonic Wars.

The next explanatory passage discusses methods of making scientific illustrations. All the early illustrations were taken from woodcuts, but from the mid-16th. C. onwards it became possible to reproduce from copper engravings instead. In the 19th. Century lithography and finally photography were developed. The first colouring was achieved by hand-painted or printed aquatinting, which was eventually superceded by colour lithography and then by more modern methods. This passage points out that diagrams and hand-drawn illustrations are still necessary today to show what the camera cannot see. These drawings must possess qualities of clarity and precision, reproducing not so much an individual example but the type-specimen, and showing in a single picture a summary of specific characteristics.

The first illustrations of molluscs appeared in books concerned with aquatic animals, e.g. "De aquatilibus, libri duo" of Pierre Belon (Paris 1553) illus. Pierre Gourdelle. Ulisse Aldrovani devoted one volume of his "De reliquis animalibus exanguibus" (Bologna 1606), an encyclopedia of animals, to Mollusca and Crustacea. This was illustrated with excellent woodcuts of which one, an Argonauta sp., is reproduced on the cover of the catalogue. There being no law of copyright, such illustrations were often copied from one tome to another, resulting in the production of a number of scientifically inaccurate mirror images. Sometimes the effect of this process was cumulative, e.g. the "Concha imbricata" or drunken shell (Tridacna sp.) first illustrated by Guillaume Rondelet in "De testaceis, Lib. I" of his "Universae aquatiliu historiae" (Lione, Lugduni. 1555) was reproduced in mirror image in Konrad von Gesner's "De tellinis in genere" (Zurich 1560) and mirrored again by Aldrovani in his work. The final image did bear some resemblance to the original illustration. All three versions featured in this exhibition.

When natural history collections became a popular hobby the need arose for illustrated catalogues of their contents. However the first publication devoted entirely to Mollusca was Filippo Buonanni's "Recreatio mentis et oculi in observatione animalium testaceorum curiosis naturae inspectoribus" (Rome. 1684) ("Recreation of the eye and mind in the observation of shelled animals and natural curiosities" in rough translation). This book was illustrated by fine copper engravings like those of Aldrovani's work and was included in the exhibition. The first occasion when the animal itself, as distinct from the shell, appeared in illustrated form was in Fabio Colonna's "De purpura" (Rome 1616; Kiel 1675) where a Murex sp. was shown with the animal extended, whilst Gerard Blaes in his "Anatomie animalium" (Amsterdam 1681) actually illustrated two opened bivalves with the animals dissected. Gradually illustrations became more scientifically accurate, though even Linnaeus apparently often referred to Buonanni's or d'Argenville's plates.

Next the catalogue deals with the history of Malacology. Study of this subject can be said to have begun with the "Historia animalium" of Aristotle, who created the first system of classifying fauna. This system survived virtually unaltered for 2,000 years until it was finally superceded by the binomial system created by Linnaeus. Between these extreme time limits, mediaeval copyists created images of fabulous sea-creatures from unknown regions of the

oceans, but it was not until better standards of observation were adopted in the 15th. and 16th. Centuries that the scientific study of Mollusca made any real advance. Pierre Belon, a Frenchman, in the work cited previously, described fauna from an ecological viewpoint for the first time and even gave some comparative anatomy. Improvements in printing processes encouraged the production of scientific literature and the first monographs devoted exclusively to Mollusca made many an honest attempt to dispel the myths of the Middle Ages. For instance, Buonanni in the work cited above, included descriptions and details of colour of the mollusc and its shell, as well as distribution data, and he refuted several notable mistakes ascribed to Pliny, the only Roman to contribute to contemporary knowledge of natural history.

The first malacologist to be more interested in the animal than the shell and possessing a truly scientific devotion to dissection and observation was an Englishman, Martin Lister, who was the Court Physician to Queen Anne. He published a number of malacological works but still believed the molluscan animal was a "fish" and an entity independent from its shell which it was able to abandon at any time! It was the Frenchman Réaumur who showed that the shell is produced by the animal itself and forms an integral part of it. He studied the byssus and the methods by which limpets cling to rocks, and was responsible for demonstrating the existence of the protoconch and that molluscs were not born as miniature adults complete with a perfect shell.

In the 17th. and 18th. Centuries the focus of scientific interest moved northwards from the Mediterranean to France, England and the Low Countries. For instance, Ray discovered hermaphroditism in slugs, and Rumph published in Amsterdam "Amboinische rariteitskamer", the first regional study which concerned the shells of Indonesia. By this time private shell collections were growing rapidly in size and importance. One need only mention the voyages of Cook and the activities of men like Hugh Cuming who brought back shiploads of exotic shells from the Orient. Museums flourished and high prices were paid for rare shells. The age of the magnificent iconographs reached its culmination in the 18th. Century with a number of works destined to be remembered more for their printing and illustrations than their scientific content, e.g. those of d'Argenville.

The major contribution which conchology made to science in that era was the part it played in the development of the system of scientific classification. Aristotle had divided testacea (hard-shelled animals) into univalves, bivalves and whorled shells. He remained the authority in this sphere until Wotton published in 1552 his "De differentiis animalium" in which he divided animals into groups according to their morphological affinities. J. D. Major suggested another system in 1675, but it was too complicated to be practical. Others who followed included Buonanni, Lister and d'Argenville. The systems they devised were often based on inconsequential and artificial divisions, and none made any real impact before Linnaeus introduced his "Systema Naturae". He brought a new dimension of understanding to the problem, saw how new species could arise and develop, and he prepared the way for Lamarck and Darwin. His binomial system soon became universally accepted.

The new classification encouraged the production of many splendidly illustrated manuals, e.g. Cuvier, Buffon and Lamarck, but the principles of Linnaeus' creation remained unchanged.

The catalogue concludes with a list of the works exhibited and notes thereon; most of these are concerned with wider fields of natural history than just malacology. There are comments on the authors of these books and on the printing, but not on their malacological content. There is also a list of works not included in the exhibition and an Index.

Janet T. Sawyer
10th. September 1975

WHY BOTHER ABOUT FLARES?

Inflatable boats are now used by water sports enthusiasts all round the world and are among the safest craft afloat, yet even so, something can go

wrong. The RAF Coltishall Sub Aqua Club (BS-AC No 439) set off in May 1975 for a two week expedition to Anglesey in North Wales. The purpose of the expedition was two-fold; first to collect molluscs for the Conchological Society and secondly to collect Diatom samples for the British Museum (Natural History). The Club's equipment included a 16 foot Domino Inflatable, a 360 offshore Penta and, for emergencies, a 4 $\frac{1}{2}$ HP Seagull. Both engines had been overhauled and tested prior to the expedition.

On the first day, Saturday 24 May, four divers set off from Treaddur Bay and using the Penta motored South out of the bay for shake-down dives at a position about half way between Castell and Porthygaran. The first pair dived at the beginning of low water slack to find visibility was zero and below 45 feet it was so dark that it was impossible to read depth gauges. They surfaced, the boat was re-positioned using the Penta and they dived again. Visibility at 30 feet, provided they neither breathed nor moved, was about 6 inches so after collecting one Diatom Survey sample for the British Museum they returned to the boat. The second pair jumped in and after ten minutes they too gave up in disgust. The Penta was started and the party set off to return to Treaddur Bay. However, within minutes the Penta stopped! We were still at low water slack so there was no noticeable current and only a light breeze.

It was not immediately possible to start the Penta and so plugs were checked and an hour went by attempting to both start it and diagnose the fault. It was then realised and confirmed by Sextant that the freshening North East wind was pushing the boat further out to sea so the Seagull was started whilst one of the party continued to work on the Penta. All of a sudden the cooling water outflow from the Seagull died away and this engine too had to be stopped. The boat was anchored to prevent further drift, the Penta eventually re-started and the return to Treaddur continued. Then the Penta stopped again and it was decided to lift it into the boat, replace with the now cooled-off Seagull and continue to return on the Seagull using the anchor each time the engine had to be shut down to allow it to cool. A further two hours had now gone by and all members of the party were cold, including the two on the oars. The boat was now closer to the shore between Porth-y-Post and Porth Ruffydd than it was to Treaddur Bay. Consequently a final effort was made to row, and when cool, motor on the Seagull to that coast. However, all efforts were in vain for the boat was caught in a tide race and moved rapidly towards Penrhyn Mawr. An attempt to anchor resulted in loss of the anchor, 300 feet of rope and left one member with rope-burnt hands. The boat swung rapidly around Penrhyn Mawr and continued at high speed along the west side of Holy Island towards South Stack Lighthouse. At this point 2 Mini Flares and one Smoke Flare were fired and shortly afterwards - though as we continued at high speed towards North Stack heading into the Irish Sea it didn't appear to be a short time - a rescue helicopter of No 22 Squadron was seen in the distance.

The helicopter was apparently searching so our flares must have been seen by someone and as it was to the South of us a further Mini flare was fired. The helicopter still moved away so a smoke flare was set off. This was very obviously seen for the helicopter, at least one/two miles away turned, headed straight towards us and within seconds three of us were winched aboard. The winchman remained in the inflatable with the fourth member of the party whilst the first three were put ashore at Holyhead. The helicopter then returned to pick up the fourth member and the winchman. Divers will wish to note that even though the pilot knew the position of the inflatable it was not immediately obvious on his return even though the bow dodger was painted in Dayglo.

In Holyhead an attempt was made to find someone with a power boat who would be prepared to search for and tow in the inflatable but half an hour before sunset this was not possible although it was agreed a tug would search the following day. This arrangement was only made possible due to the financial assistance of a very kind lady at the Yacht Club who not only telephoned for us but also provided a very welcome whisky - in future I intend to neoprene some money to my wet suit. The coastguard stated six people had telephoned to report sighting an inflatable firing distress signals. There had also been a telephone call from the shore party to report an overdue boat.

The Coltishall inflatable, bow dodger painted in Dayglo, was not overloaded, it contained four sets of equipment and four divers, it had two engines both of which had not given trouble previously, it had a set of oars and Mini,

Night and Smoke Flares were carried. Also one of the party was a skilled engine fitter. Yet even with spare engine, expertise, and a shore party it is thought that but for the Flares the divers may have had to spend at least one night in an open boat.

The following day a visit was paid to No 22 Squadron to thank the crew that had rescued us. The helicopter captain stated it is not easy even on a fairly calm day to spot an inflatable and it was extremely difficult to spot one when the sea was rough. He also advised that use of smoke flares and Day-glo on inflatables would facilitate rescue.

The Salvage Tug, Afon-Wen, also reported after a day of searching it had not been able to find the inflatable.

The Coltishall Sub Aqua Club had lost a lot of equipment, boat, oars, two engines, four sets of equipment, personal bags of odds and ends, flasks, first aid kit, flares, rope, etcetera, but thanks to their flares and No 22 Squadron Rescue Helicopters no life was lost or even put at risk.

This incident ended well for, on Monday 26 May, 35 miles out to sea the HMS Orange Leaf picked up the inflatable complete with all its contents.

When you put out to sea do you carry flares?

Squadron Leader D. A. J. Taylor

BOETTGERILLA PALLENS IN JERSEY

The site in St. Martin's (Map Reference 695531), on the slope of a narrow but steep valley, borders a small lake and is approximately two metres above the lake's surface level. It has a north by north-east aspect, and is completely overhung by trees. The specimens so far located were all found on 8th. May 1975 beneath three pieces of broken concrete which were resting lightly on a much tunnelled soil base. It was evident from surface moss growth that the concrete pieces had lain undisturbed for some time.

The site is closely backed by a viaduct carrying the B38 road and is cut by the 200 foot contour line. It seems likely that the concrete pieces are an overspill from the construction of the viaduct embankments as such pieces break the surface of the embankment in some quantity.

It is notable that one of the three pieces actually rested on a footpath but as this path ends in an impassable mud patch where the valley stream broadens into the lake it cannot have carried much traffic. The whole area is littered with discarded and broken bottles, rusting tins, pieces of polythene, etc..

Two of the specimens were found in the soil tunnels but were clearly visible from the surface - the concrete itself having formed the upper limit of the tunnels - when the concrete was lifted but the third had to be teased from within the chinks of the broken concrete, having at first been mistaken for 'spider-fluff'.

Subsequent visits to the site have revealed no additional specimens but the extreme dry weather throughout the summer of 1975 probably accounts for this and it is hoped that more Boettgerilla will be found when damp conditions obtain.

In Jersey, Boettgerilla keeps company with Carychium tridentatum (Risso), Cepaea nemoralis (L.), Hygromia hispida (L.), Discus rotundatus (Müller), Arion intermedius (Normand), Arion hortensis (Ferussac), Vitrea crystallina (Müller), Vitrina pellucida (Müller), and Retinella nitidula (Draparnaud).

I am grateful to Mrs. M. Long (no relation) of the Botanical Section of La Societe Jersiaise for the list of plants growing in the immediate area. These are Hedera helix, Ruscus aculeatus, Polystichum setiferum, Phyllitis scolopendrium, Athyrium filix-mas, Rubus sp., Sambricus nigra, Galium aparine, Geum urbanum, Heracleum sphondylium, Crataegus monogyna, Acer pseudoplatanus,

Ilex aquilifolium, Geranium robertanum, Meothringia trinervia, Circaea lutetiana, Dryopteris anstriaca, and Narcissus sp..

I am grateful to Dr. June Chatfield for her encouragement and for the imparting of that 'feel' for molluscs which led to this site, and also to Mr. Adrian Norris for his services in confirming the identity of Boettgerilla pallens (Simroth), a new addition to the list of the molluscan fauna of Jersey.

Rev'd. Graham Long
February 1976

JOURNAL OF CONCHOLOGY

By now all paid-up members, even the most distant, will have received copies of the Journal with the new cover. Preliminary reaction has been favourable but any additional comments or suggestions will be most welcome. May I, as Hon. Editor, express my personal thanks to all who submitted ideas or designs. At present we are retaining these for possible future use. We may well change the design and colour with each new volume, i.e. every three years.

Other, less obvious, changes were also introduced with vol. 29, part 1. We now require an abstract to precede each paper. If this seems an extra chore to potential authors, bear in mind that abstracts reach a much wider audience than the complete paper. Landes (1951) estimated that between 10 and 500 times more people read abstracts than the complete work. Many abstracting services 'lift' abstracts whole from the original paper. Thus by distilling the essential conclusions of your paper in the abstract, you will communicate them in your own words much more widely than the circulation of our Journal - and communication, after all, is the main aim of publishing.

At the printer's suggestion, two more characters per line and six more lines per page, have been added. By using a slightly smaller type, the printed page size has been kept almost exactly the same as in vol. 28, but these small changes mean that each page contains 20% more type. This should result in considerable savings to the Society as we can now publish in 5 pages, information that would have filled 6 pages of vol. 28.

The copy for vol. 29 part 2 went to the printers at the end of May, and the part should appear by late October. Contents are as follows, although not necessarily in the order listed:-

Observations on the breeding habits of Opeas gracile (Hutton): by Biswas, Rahman and Mitra.

Abida secale (Drap.) in northwest England: by R. A. D. Cameron and Lady Christina Letanka.

The commercial exploitation of the freshwater pearl mussel Margaritifera margaritifera L.: by the Earl of Cranbrook.

Some aspects of growth and development in the river limpet, Ancylus fluviatilis: by P. M. Durrant.

Field observations on Theba pisana (Mull.) at St. Ives, Cornwall: by J. Humphreys.

Two Postglacial molluscan faunas from southwest England: by M. P. Kerney.

Non-marine Mollusca from Faversham, Kent figured by George Walker in 1784: by M. P. Kerney.

On the status of Murex osseus Reeve 1845: by T. Pain.

The non-marine Mollusca of Colonsay and Oronsay: by C. R. C. Paul.

Reviews: "Pulmonates" Fretter & Peake (Editors). "American seashells" R. Tucker Abbott.

The Society's proceedings.

I hope there will be something of interest to everyone.

REFERENCE

LANDES, K.K., 1951. A scrutiny of the abstract, Bull. Am. Ass. Petrol. Geol. 35: 1660.

Hon. Editor

MARINE MOLLUSCA FROM GUERNSEY

During the course of a week's visit to Guernsey in August 1975 I took the opportunity to collect some of the Mollusca to be found at certain points along the island's coast. I thought it might be of some interest to place on record the species collected.

Lihou

Patina pellucida (L.)
Patella vulgata L.
P. aspersa Lamarck
Gibbula cineraria (L.)
G. umbilicalis (da Costa)
G. pennanti (Philippi)
Littorina littoralis (L.)
L. littorea (L.)
Calliostoma zizyphinum (L.)
Nucella lapillus (L.)
Lepidochiton cinereus (L.)
Acanthochitona crinitus Pennant
Trivia arctica (Montagu)
Tellina crassa Pennant
Venerupis aurea (Gmelin)
Ocenebra erinacea (L.)
O. aciculata (Lamarck)
Monodonta lineata (da Costa)
Haliotis tuberculata

Pleinmont Point

P. vulgata L.
P. intermedia (Jeffries)
P. aspersa Lamarck
H. tuberculata L.
N. reticulatus (L.)
G. cineraria (L.)
G. umbilicalis (da Costa)
G. pennanti (Philippi)
M. lineata (da Costa)
C. zizyphinum (L.)
L. littoralis (L.)
L. saxatilis (Olivi)
B. rubra Adams
R. guerini Recluz
R. parva (da Costa)
T. pullus (L.)
O. erinacea (L.)
O. aciculata (Lamarck)
N. lapillus (L.)
M. squama (Gmelin)
Anomia ephippium L.
Cingula cingillus (Montagu)

Petils Bay

Patella vulgata L.
P. aspersa Lam.
Chlamys varia (L.)
Pecten maximus (L.)
Odostomia eulimoides Hanley
Littorina saxatilis (Olivi)
L. littoralis (L.)
N. lapillus (L.)
C. zizyphinum (L.)
G. pennanti (Philippi)
H. pellucida (L.)
Rissoa guerini Recluz
Nassarius incrassatus (Strom)
Lepidochiton cinereus (L.)
Barleeia rubra Adams
Tricolia pullus (L.)
Monia squama (Gmelin)
Rissoa parva (da Costa)

Grandes Rocques

P. vulgata (L.)
P. intermedia (Jeffries)
P. aspersa (Lamarck)
Hydrobia ulva (Pennant)
M. lineata (da Costa)
G. cineraria (L.)
G. pennanti (Philippi)
G. umbilicalis (da Costa)
A. laeta L.
R. parva L.
R. guerini Recluz
B. rubra Adams
C. cingillus (Montagu)
L. littoralis (L.)
L. cinereus (L.)

R. W. Morrell

PUBLICATIONS RECEIVED

- (1) A Catalog of Dealers' Prices for Marine Shells (fourth Edition) 1975, by Tom Rice (of Sea and Shore Publications, Port Gamble, Washington, U.S.A. 98364. \$5.00)

This is a new and enlarged edition of a catalogue first published eleven years ago and is the most complete and useable thing of its kind available. It lists about 10,000 marine species available from shell dealers, together with the highest and lowest prices asked in each case. The variation indicated is

sometimes considerable and it is difficult to guess how dealers price their shells, since it is evidently not usually by reference to other dealers' price lists. The work of collating these lists must have been very considerable and has been systematically and accurately done.

The third edition of this catalogue was issued in 1972 and it is interesting to note that a great many shell prices have come down in the interim. For example the following (all first quality specimens):

<u>Species</u>	<u>£ 1972</u>	<u>£ 1975</u>
<u>Murex nuttingi</u> Dall	20 - 95	5 - 20
<u>Murex digitatus</u> Sow.	100 - 200	15 - 25
<u>Murex jickelli</u> T-C	500	150 - 200
<u>Pecten diegensis</u> Dall	30 - 100	6 - 15
<u>Pecten phrygium</u> Dall	20 - 25	10 - 20

If you insist on rarities, you can of course spend a very large sum of money on a single specimen, but at the other end of the scale it is still possible to buy many hundreds of species at ten cents a shell, and probably the majority of the shells listed can be had for the equivalent of ten bob or less each. When one considers the amount of correspondence (some no doubt abortive) which dealers need to enter into, the packing and postage costs, cleaning shells, ensuring their correct identification, writing labels with full data, advertising and display work, it is difficult to avoid the conclusion that for the collector, shells are remarkably cheap.

- (2) Poirieria. Organ of the Conchology Section, Auckland Institute and Museum, edited by N. and N. Gardner, 6 Tui Glen Road, Birkenhead, Auckland, New Zealand.

Vol. 8, Part 1 includes some notes about the extended range of a marine gastropod Morula chaidea (Duclos 1832), an article on the unexpected discovery of cowries in Taranaki waters, attached to an oil rig: a continuing review of the Mollusca of the New Hebrides; an article on the habits of Nassarius spiratus, one on Cleidothaerus maorianus and one on the famous bright green tree snail from Manus Island, Papuina pulcherrima Rensch.

Vol. 8, Part 2 is equally absorbing, with illustrated articles on Diloma subrostrata novaezelandiae (Anton), once called Zediboma; the small commensal bivalve Divariscintilla maoria Powell; Papusuccinea archeyi Powell - a seasonal land snail; and Planorbis corina Gray. There is a review of New Zealand wentletraps and an article on the fossil beds of the Auckland area and their contents.

Both parts feature field trip reports - some of them better described as travelogues - reviews, references, new discoveries and notes of interest to members. Some of the latter indeed, are of general conchological note.

T. E. Crowley

REVIEW

A Concise Guide in Colour. Shells of Britain and Europe. By Jan Lellak, 235pp., 88 full colour plates. Hamlyn 1975.

It was the price of this book that made me look twice and, in the end, buy it. At £1.05 it is extremely good value as long as you are not too critical of the contents. As a conchologist or malacologist, it would be the last book that I would go to in order to identify a British species. In fact the title is very misleading. A better title would have been 'Some marine shells of the Mediterranean and Northern Coasts of the Continent'. It is also a pity that the words "invaluable guide to anyone interested in collecting and identifying seashells" were added to the jacket description, anything less accurate could not have been written. One must be fair though, and say that the author set himself an impossible task when one considers that there are some 600 British marine molluscs and multiples of this number when one considers the areas

covered by the book. A mere 80 plates, 50 or so potential British species, and a 100 descriptions is only scratching the surface.

One also gets the impression when reading through the book that many of the descriptions and drawings have been taken from museum material and that because of this they are not very true to life. For example in Acanthocardia tuberculata, Mactra corallina and Corbula gibba the plates are extremely misleading. Acanthocardia looking more like Cardium edule, the common cockle, Mactra could be any Spisula species while Corbula is an inequivalve but shown as an equivalve.

On the other hand, when the author writes 'The molluscs chosen for this book are "typical examples" and that the aim is to stimulate an interest in shells', one can agree and for this reason one could recommend it to those who are beginners, to those interested in the animal inside the shell and to those who are interested in the edibility of various molluscs. The author also spends some 50 pages of the 200 or so describing the structure and habits of molluscs in general as well as discussing in reasonable terms the way one should go about collecting them. It is extraordinary though, that when it is forbidden to take birds' eggs and now many wild flowers, the collecting of living molluscs is encouraged still, even though they may be becoming rare or even, in some instances, extinct as in the Mediterranean.

In conclusion, I consider that this book at the price is a very good buy indeed as long as you have it as an attractive book rather than as a serious guide to shell identification.

John E. Llewellyn-Jones
December 1975

NEWS AND VIEWS FROM HYPERBOREA

In the time of Atlantis there was a land in the extreme north called Hyperborea, no one is now quite sure where it was or whether any present day land is part of it. Living in Scotland can make one feel as remote from 'the rest of the world' as if one dwelt in that mysterious Far North! Everything seems to take place elsewhere, or conversely what we do goes un-noticed outside. Some wit suggested that, to prevent the break-up of the UK, big events such as Crufts should go on tour round the big cities and national societies should hold their AGM's or annual exhibitions like movable feasts, going here, there and everywhere. I fear the howl from London would be clearly audible at the North Pole!

Something has happened however which may put an end to this unfortunate state of affairs north of the border. A committee for biological recording has been set up in Scotland, it is well-named B.R.I.S.C. and it may provide the impetus to local natural history societies to record in earnest which may increase the numbers in the field of conchology*

In Scotland people doing any recording, except of birds, can find themselves very much alone, literally not within visiting distance of anyone doing similar work. There are probably few conchologists, yet strangely enough in our local natural history society, conchology is by no means low in the popularity stakes. Birds come top, followed by mammals, then geology, conchology would probably tie, but is so far a rather untried subject, then botany, butterflies and moths, and archaeology, while fishes, mosses and liverworts and other insects come nowhere.

There are hopes that what may be the smallest local museum in the British Isles will open here in a month or so in an antique shop, it hasn't been measured, but I think it will be about 6ft. high by 4 ft. across and about 1½ ft. deep! Some of its shelves will be for natural history and one of the things that will be part of that display will be a collection of boro-arctic fossil shells discovered in clay on Rhu and Helensburgh shores, after the astronomical-equinoxal tides of February 1974 had drawn away the covering of shingle. Though by no means a large number of species were found in comparison with similar beds, we are impressed by the excellent condition of most of the shells,

the gleaming epidermis and hinges in working order; they looked as if they had just died yesterday and not 9,000 to 12,000 years ago.

*Anyone interested may care to contact Dr. A. Sommerville, 8 Dublin Street, Edinburgh, EH3 3PP

Alison Rutherford

INTERNATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE

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

The following Opinions recently published by the Commission may be found by means of the reference given in each case:

<u>Opinion No.</u>	<u>Subject</u>	<u>Bull.zool.Nom.vol.pt.p.</u>
1040	<u>Oniscidia</u> Mörch, 1852, and <u>Morum</u> Røding, 1798 with the names of their respective type-species, placed on Official Lists (Mollusca)	32 3 139
1044	<u>Lorica</u> H. and A. Adams, 1852, and <u>cimolius</u> , Chiton, Reeve, 1847, placed on Official Lists (Mollusca, Polyplacophora)	32 4 216
1052	<u>Nipponaphera habei</u> Petit, 1972 designated under the plenary powers as type-species of <u>Nipponaphera</u> Habe, 1961 (Gastropoda)	32 4 242
1057	(Bull. zool. Nom. 33 (1) page 19) <u>Donax variabilis</u> Schumacher, 1817 (Mollusca: Bivalvia) suppressed under plenary powers for both priority and homonymy. Type-species designated for <u>Latona</u> Schumacher, 1817 to be <u>Donax cuneatus</u> Linnaeus, 1758. <u>Donax variabilis</u> Say, 1822 placed on Official List.	
1061	(Bull. zool. Nom. 33 (1) page 29) <u>Homoceras</u> Hyatt, 1884 (Cephalopoda), designation as type-species of <u>Goniaticites smithii</u> Brown, 1841 under plenary powers.	

The Commission cannot supply separates of Opinions.

GENERAL NOTES

A LUCKY FIND IN THE OUTER HEBRIDES

While on holiday in September 1975 we visited most of the long shell sand beaches on the west coast of South Uist. Walking along the strand-line at North Bay, Ardivachar, looking for shells, I picked up a much-travelled melon, encrusted with Balanus balanus, and young Ostrea edulis (Linne), and with some Lepas antifer showing through a hole in the side.

I put the whole thing into a plastic bag and carton for safe keeping. Six weeks later, when I had time to investigate it further at home, we cut a section out of the melon, which was as hard as wood by then, so that we could see what was inside. Besides a great many young Lepas antifer (Linne) I was delighted to find 26 young Musculus niger (Gray) ranging from 2 to 15 mm. long. I wonder how far it had come?

A. Margaret Brockbank

A NEW BRITISH RECORD FOR THE GREENHOUSE ALIEN GULELLA IO VERDCOURT

Gulella io, described as a new species by Verdcourt in 1974 (Arch. Moll., 104: 121), is a small streptaxid snail of unknown origin, having so far been recorded only from greenhouses in Czechoslovakia (Bratislava) and Britain (Kew, Edinburgh). A specimen from the Aroid House at Kew is illustrated in J. Conch.,

27 (1969): 15. Recently our member Mr. R. P. Scase showed me a further specimen, found in June 1956 in a hot-house in the Royal Horticultural Society's gardens at Wisley, near Woking, Surrey. The shell is perfectly fresh and was obviously live-collected. Mr. Scase tells me that this particular hot-house has since been demolished, but new ranges providing similar environments have been built close by and it would be interesting to discover if the species is still there. Several attempts to re-find it at Kew have failed.

M. P. Kerney

RECENT SHELL STAMP ISSUES

British Indian Ocean Territory. Commemorative issue for maps of the Islands, 8th. November 1975. 4 stamps within one Souvenir sheet. The sheet border contains several shells.

Comores Islands. Overprinted issue for the independent Comores Islands. Issue of 1971, the 60F Cypraea caputserpentis overprinted "Etat Comorien" and surcharged 75F.

Grenada. Commemorative Issue August 1975. Designed by John Waddington Studio.

1/2c	<u>Chama macerophylla</u>	50c	<u>Arca zebra</u>
1c	<u>Smaragdia viridis</u>	75c	<u>Strombus pugilis</u>
2c	<u>Trachycardium muricatum</u>	£1	<u>Sthenorythis pernobilis</u>
25c	<u>Janthina janthina</u>		

£2 Souvenir sheet. Voluta musica with probably Ischnochiton papillosus in the sheet background.

Grenada Grenadines. Commemorative Issue December 1975. Designed by John Waddington Studio.

1/2c	<u>Nerita peloronta</u>	25c	<u>Phalium granulatum</u>
1c	<u>Donax denticulatus</u>	50c	<u>Cassis tuberosa</u>
2c	<u>Strombus raninus</u>	75c	<u>Strombus gigas</u>
3c	<u>Distorsio clathrata</u>		

£2 Souvenir sheet. Charonia variegata with other shells in the sheet background including: Strombus gigas, Cypraea zebra.

Solomon Islands. Definitive Issue of Indigenous shells and birds for the newly independent Solomon Islands. Release date 8th. March 1976. Designed by Gordon Drummond.

6c	<u>Cypraea aurantium</u>	25c	<u>Trochus niloticus</u>
10c	<u>Comus gloriamaris</u>	35c	<u>Cymbiola rutila</u>
15c	<u>Nautilus pompilius</u>	45c	<u>Lambis crocata</u>
20c	<u>Murex pecten</u>	£1	<u>Charonia tritonis</u>

Territories Afars & Issas. 6th. value in the sea shells series. December 1975. 45F Murex scolopax.

Thailand. Commemorative Issue. September 1975.

75S	<u>Mytilus smaragdinus</u>	2-75B	<u>Oliva mustelina</u>
1B	<u>Turbo marmoratus</u>	5B	<u>Cypraea moneta</u>

Anthony Grainger

THE MALACOLOGICAL SOCIETY OF LONDON. Zoology Department, Woodland Road, Bristol, BS8 1UG. June 10th. 1976.

Dear Members,

I am writing on behalf of the Malacological Society of London to extend an invitation to members of the Conchological Society to take part in an ordinary meeting of our Society which will be held in the Lecture Theatre of the Zoology Department, Chelsea College, on Wednesday October 27th. 1976.

The Guest Speaker for this meeting will be Professor R. D. Purchon and he will be talking on 'Marine Mollusca of West Malaysia'. We envisage that the meeting will start at 4.00 p.m. and last approximately one hour. Professor Purchon has kindly offered to organise a small exhibition of mollusc shells which will be on view for an hour before, and an hour after, the lecture. Your members might be interested to learn that among the exhibits will be specimens which are characteristic of West Malaysia and a few which may be rare and little known such as Strombus listeri from Thailand and Gastrochaena cymbium.

Yours sincerely,

D. M. Crampton
Publicity Officer

SIXTH EUROPEAN MALACOLOGICAL CONGRESS IN THE NETHERLANDS (AMSTERDAM, 1977)

The Sixth European Malacological Congress of the UNITAS MALACOLOGICA EUROPAEA will be held in the week 15-20 August 1977, in the Free University, Amsterdam. This congress, under the auspices of a Comité d'Honneur consisting of Dr. Vera Fretter (U.K.), Dr. A. Riedel (Poland), Dr. K. M. Wilbur (U.S.A.), Dr. J. Lever and Dr. C. P. Raven (both from the Netherlands), is intended to be a meeting-place of everybody engaged in or interested in any branch of malacology. Apart from the usual items on the programme such as a meeting of the European Invertebrate Survey, field trips, and the General Assembly of the U.M.E., there will be twelve main lectures by specialists in the various fields. Ten of those have already consented to read a major paper, viz., Dr. E. A. Malek (U.S.A.) on the control of snail hosts of schistosomiasis, Dr. J. Joosse (Netherlands) on the endocrinology of molluscs, Dr. J. Knudsen (Denmark) on deep-sea bivalves, Dr. J. Lever (Netherlands) on torsion in gastropods, Dr. A. S. M. Saleuddin (Canada) on shell formation, Dr. A. Solem (U.S.A.) on zoogeography of land gastropods, Dr. N. H. Verdonk (Netherlands) on symmetry and asymmetry in the embryonal development of molluscs, Dr. M. J. Wells (U.K.) on brain and behaviour of cephalopods, Sir Maurice Yonge (U.K.) on cementation in bivalves, and Dr. A. de Zwaan (Netherlands) on the energy metabolism in molluscs. There will also be so-called 'poster sessions' in order to present material and data instead of contributed papers, for which latter also provision will be made.

All malacologists, i.e., everybody working with molluscs, whether in a professional capacity or not, is invited to attend the Amsterdam congress. For further information write to Sixth European Malacological Congress, c/o. Congresbureau van de Vrije Universiteit, De Boelelaan 1105, Amsterdam, Holland.

The fees will be as follows: Hfl. 100.- for full congress members (approximately US \$ 40), Hfl. 20. - for associate members (e.g., accompanying ladies), and Hfl. 50. - for student members.

THE NATURAL HISTORY MUSEUM, Wollaton Hall, Wollaton Park, Nottingham, NG8 2AE.
Chief Museums Officer: B. Loughbrough, M.A., A.M.A. Tel. 0602 281333.

The museum is housing the recently set up Biological Records Centre for Nottinghamshire and we should like to collect and organize as many records, past and present as possible. I should appreciate any help your members can give and shall be grateful for any molluscan (or other) records from our county, with the usual provenance and author of determination. Records to be kept strictly confidential should be marked.

Graham Walley, Assistant Keeper of Biology

PUBLICATIONS OF INTEREST

'Sea Shells of the Seashore', 'Seashore life on Sandy Beaches', 'Seashore life on Rocky Shores'. These three attractively produced, well illustrated booklets with text and photographs by Heather Angel are published by Jarrold & Sons Ltd. (Colour Publications), Barrack Street, Norwich, NR3 1TR, price 40p each plus postage.

'British Bivalve Seashells' by Norman Tebble - a second edition has now been published. Available from all H.M.S.O. bookshops or direct from Publica-

tions Officer, Royal Scottish Museum, Chambers Street, Edinburgh, EH1 1JF and British Museum (Natural History), London, price £3.00, - £3.21 incl. postage.

'Marine Micropaleontology', a new quarterly, commenced 1976, Vol. 1, published by Elsevier Scientific Publishing Co., Amsterdam. Subscription \$46.95.

'The Biology of Estuaries and Coastal Waters' by E. J. Perkins, 1974, 640 pages, \$43.50/£22.55, Academic Press, New York.

'Estuarine and Coastal Marine Science', Vol. 4, 1976, 6 issues, U.K. subscribers £19.80, an Academic Press journal.

'Estuarine Research', Vol. 1 - Chemistry, Biology and the Estuarine System, Oct. 1975, 750 pages, \$31.50/£16.40. Academic Press.

ANNUAL GENERAL MEETING MARCH 1977

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

Rule No. 11. Candidates for nomination to the Council shall be paid-up members of The Society and shall be nominated by two members. Nominations, other than those made by the Council itself, shall be sent in writing to the Hon. Secretary at least six weeks before the A.G.M., and shall be accompanied by a signed declaration of the candidate's willingness to serve.

NOTE: Nominations must be received by the Hon. Secretary NOT LATER THAN.
31 December 1976.

EXCHANGE WANTED: Paolo Bernardi, [REDACTED], 47037 Rimini, Italy, wishes to exchange fossil molluscs with English collectors. An interesting collection of Italian Pliocene marine shells available, also others. A list will be sent on request, please write.

ANYONE INTERESTED IN EXCHANGING tropical marine shells for Malawian land or freshwater shells or butterflies or beetles, please contact: W. Noel Gray, Department of Surveys, P.O. Box 349, Blantyre, Malawi.

ADVERTISEMENT

SHELLS ON STAMPS: extend your interests to collecting these attractive items. Several extremely rare shells have been depicted on stamps. Large stock available from 1935 (Cayman Islands) to all latest issues. Also interested in buying and limited exchange.

A. Grainger, [REDACTED], Horsforth, Leeds, [REDACTED]

SHELLS FOR SALE

A fine selection of shells for the collector is available at Eaton's Shell Shop, 16 Manette Street, off Charing Cross Road, London, W1V 5LB (telephone 01-437 9391).

THE SOCIETY'S PUBLICATIONS

Back numbers of the Conchologists' Newsletter may be obtained from J. Collins, The Bookshop, 45 Westow Street, Upper Norwood, London, S.E.19 (telephone 01-771 9719) at 25p each, or from the Hon. Secretary, Mrs. E. B. Rands who can also supply copies of the Marine Concordance, 30p to members and 50p to non-members, and can take orders for back numbers of the Journal of Conchology.

Papers for Students can be obtained from Mr. A. Norris, Natural History Dept., City Museum, Municipal Buildings, Leeds, LS1 3AA.

JUNIOR MEMBERS

Whilst junior members normally transfer to full, senior membership at the age of 18, they are reminded that they may become full members at an earlier age if they wish, thus obtaining all publications and rights of membership on payment of the full, current subscription.

Produced by THE CONCHOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND

THE CASE OF THE SNAIL (OR SLUG) IN THE GINGERBEER BOTTLE

Without the words in brackets (which are mine) the title might be that of a "who-done-it" by Erle Stanley Gardner but is a lawyers reference to the case known more formally as "Donoghue v Stevenson 101 L.J.P.C. 119". Many other references to Law Reports could be given, but all are silent as to the sort of factual detail that would be of interest to conchologists and might make it possible to guess at the species concerned. In fact the ultimate result of the prolonged proceedings and some more interesting details can only be gleaned from articles in legal periodicals. One such article was entitled "Was there a snail?" and that is not the only matter of doubt regarding the case. My first doubt - and the reason for the words in brackets in the title - was raised by Stella M. Davies' Note "Slug or Snail" in No. 44 of The Newsletter from which it seems that at Lanark (only some 35 miles from Paisley where the affair began) a black slug (anglice) would be called a snail. There is no clue as to its colour, shape or size.

Now the facts in the case, so far as I have discovered, are that on the 26th. of August 1928 the plaintiff (Donoghue) - in Scotland she was called "the Pursuer" - went with a friend to a cafe in Paisley run by one Minchella. There the friend bought refreshments for both of them, consisting of some ice cream served in glasses and some ginger beer. The beer was made by the defendant (defender) and contained in a bottle of dark opaque glass. Some of the beer was poured into the glasses and the mixture was then I assume sucked through a straw. When Donoghue's glass was getting empty the friend topped it up with some more from the bottle and something nasty floated out which Donoghue thought looked like a decomposing snail. What her friend thought it was, is not known. The immediate effect on Donoghue was violent shock but unlike the events in "The Case of the Pregnant Fishwife" (also Scottish) or "The Case of the Pregnant Doctor's wife" (nationality unknown but both titles might have come from Mr. Gardner) Donoghue did not miscarry, presumably because she was not pregnant. The effect on her friend is also unknown, as is what either or both of them said to Minchella. Soon after, Donoghue suffered from acute Gastro-enteritis and was off work for a long time. Such, more or less, are the discoverable facts.

Now for a very little law. Donoghue did not buy the gingerbeer and so would have had no claim in contract against Minchella, still less against Stevenson, but on taking legal advice was told, it would seem, that she had just a chance against Stevenson if he was sued for a tort based on negligence. Years ago, a lecturer at whose feet I sat, commented that the chance was a thin one, as the law then was, and that her adviser was a brave man to launch the proceedings. However, he did, and in short, the argument was that Stevenson, by selling his beverage in a dark opaque bottle which prevented inspection by the retailer (Minchella) or the purchaser (the nameless friend) or the consumer (Donoghue) or indeed anyone else, was in such a proximate relationship to Donoghue, as consumer, that he was under a duty to take care that snails did not get into his product, as the defect could not be discovered until the damage was done.

The case against Stevenson was launched and came before the Outer House of The Court of Session (I have heard it referred to as "the Outer Circle" and, more rudely, as "The Out-House"). There, "the Lord Ordinary directed the case to go to Proof on the issue of the relevancy of the claim against Stevenson". I think that means that Stevenson's counsel had argued that the facts alleged

by Donoghue did not disclose any case for him to answer, but that the Lord Ordinary had ruled that there was. The next step would have been for the evidence in support of Donoghue's allegations to be heard, but before that was done, Stevenson appealed to the next higher court, the Second Division of the Inner House. There, the decision of the Court was (in English) that there was no case for Stevenson to answer - in other words, he won. That put Donoghue in an awkward position. That she was not satisfied goes without saying, but she had been out of work, and even though a year or two had elapsed could not possibly have amassed the sum necessary to pay even her own costs, let alone Stevenson's too if she lost, on a further appeal as that had to be to the House of Lords. In 1931 there was no Legal Aid. However, she made it.

On 10th. December 1931 the case came before the Lords Buckmaster, Atkin, Tomlin (Any relation, I wonder, of J.R. le B.T.), Thankerton and Macmillan and was then entitled "M'Alister (or Donoghue) (Pauper) v Stevenson. The case continued on 11th. December, after which "their Lordships took time to consider their judgments". On 26th. May 1932 they delivered them, and how! 28 pages of report. I will quote only two passages (one now and one later). At the very end of the last judgment (Lord Macmillan's) he said

"Negligence must be both averred and proved. The appellant accepts this burden of proof and, in my opinion, she is entitled to have an opportunity of discharging it if she can. I am accordingly of the opinion that this appeal should be allowed, the judgment of the Second Division of the Court of Session reversed, and the judgment of the Lord Ordinary restored".

Or more concisely in the last two words of the report "APPEAL ALLOWED".

If the case had followed the normal course, it would have gone back to Scotland and the Outer House so that the facts averred by Donoghue could have been heard by that Court and a final judgment given on those facts, but that did not happen. One of my "sources" says that the defender (Stevenson) died and the pursuer (Donoghue) in consequence compromised the Action. Another "Source" says, more briefly, that before the case was heard settlement was made out of Court. At any rate, both agree that Donoghue got £100.

Those are the facts, so far as I have been able to ascertain them, and the history of the proceedings and there is not much information on which to base even a guess at the identity of the species concerned. However, in the first judgment Lord Buckmaster after reciting, very briefly, the facts said that "at this stage her" (Donoghue's) "allegations must be accepted as true". Her allegations in short were that what she thought was a decomposing snail came out through the neck of a gingerbeer bottle as a result of which she suffered shock and severe gastro enteritis. Not much clue for the identity there.

An Articled Clerk I met soon after the war had a brass snail (some sort of Helix) which she used as a paper weight. She referred to it as "M'Alister" and, as I remember, argued that under Lord Cairngorm's Act (applicable only to Scotland and not to be found among the English Statutes) an animal most foully done to death had an action against those responsible. This at any rate explained the sudden appearance of M'Alister as a party to the proceedings, but there is no British snail by name M'Alister or "M'Alisteri" or anything like it. I don't support that identification, but I still covet that brass snail.

Various explanations of varying degree of rudeness have been put forward for the sudden intervention in the case of "M'Alister", all relating to the state in 1928 to 1932 of the Scottish Marriage Laws. Some say that a Scottish married woman was wise to sue in her maiden name as well as her married name in case she should be non-suited on some technical defect regarding the formalities for her marriage being proved. Others say that Scottish Pauper's marriages were presumed to be defective. But this does not help in identifying the snail.

A decomposing snail came out through the neck of the gingerbeer bottle. I am going to accept, with Lord Buckmaster no doubt, that it was a snail with visible shell and not a slug, black or white, with or without shell. Any native Scottish snail, if sufficiently juvenile, would pass through the neck of the bottle, so that does not help. How did it get in and when? In 1928 you

got a penny or tuppence back on the bottle when you returned it to the retailer so bottles were unlikely to be left lying about the countryside long enough for the snail to crawl in. It might have been put in by some budding malacologist who then forgot it, but it might have crawled out again before the bottle got back to the factory. On those very slender grounds, I propose to exclude from further consideration all species found only in woodlands wild or open country, and look only at those likely to be found in the haunts of man, particularly the factory, a cafe, a retailer's shop or the home of a previous purchaser of the bottle. If the snail got in at any of the last three, it has to be assumed that either the factory did not wash out bottles when they were returned or the bottle in question missed getting its wash on that occasion. If the snail got in at the factory after the bottle had been washed, no assumption has to be made, and, thin though the argument is, that seems preferable.

When as children, aided and abetted by our Nanny, but without a Brewers Licence, we made a mildly alcoholic form of gingerbeer, the "wash or wort" had to be boiled, allowed to cool and then fermented. When a snail is over boiled, it cannot as a rule be got out of the shell (Irrelevant) but the parts of the animal left in the shell do not decompose in the normal sense of the word. They may dry out and in time turn to dust or may decay like rotting leather. I don't think Donoghue or M'Alister would have called either process "decomposing". It seems to me most likely that the snail did not go through the boiling process but was in the bottle (after its rinse) when the cold or cooling liquid was put in. Alternatively the snail crawled or was put in to the bottle after the liquid and before the cap or cork was put on. In that case it might have decomposed; if the liquid was put in hot (but not hot enough to crack the bottle) and the snail was already there I guess that decomposition would have been inhibited.

Most of this argument was thought out by me before the war and long before I had heard, probably in 1957, of any doubts as to the existence of the snail so I will finish the identification on the line then adopted. I had before the war very few books but Edward Step's "Shell Life" has a chapter called "Land-slugs and Glass-shells". The slug possibility is being ignored but what is more likely in a bottle than a glass-snail. Of the genera and species of snail included in the chapter, many, like Vitrina, Vitraea and Euconulus are very small and I doubt if Donoghue or M'Alister would have recognised them as snails, unless she had knowledge of the subject. These and zonitoides are unlikely to be found near the factory. That leaves only Oxychilus. Draparnaldi is to be found around Glasgow, but if adult would not get out of or in to the bottle. Helveticus is not very common near mans dwellings and being Swiss would be far too hygienic to be drowned in pop. Donoghue or M'Alister did not complain of any smell of garlic so alliarius is out. That only leaves cellarius (the Cellar Snail) and what more likely to be found in the bottling cellar of Stevenson's factory or anywhere else that the empty bottle might have been kept.

That is my identification. Can anyone else do better?

J. F. M. de Bartolome

THE ATLAS OF NON-MARINE MOLLUSCA OF THE BRITISH ISLES

I should like to thank everyone who has written to me about the Atlas. Their generally kind comments are much appreciated, though I must point out that the great bulk of the work was done by the contributors, not me. Without the enormous enthusiasm and energy of our membership the maps could never have been compiled.

I have been asked a number of questions, and to save writing to everyone individually here are some of the answers.

The cost of printing the Atlas was entirely borne by the Institute of Terrestrial Ecology (Natural Environment Research Council), who allowed us a quota of complimentary copies for our major contributors, and have also made available to the Society sale copies at a reduced rate. I am sorry that it was therefore not possible to send a free copy to everyone who contributed data,

but this does not, of course, mean that their contributions were any the less appreciated.

The mapping scheme is not closed. As the Society's Non-marine Recorder I am glad to continue to receive data in the same way as before. Thinly-worked areas remain; these may be identified by reference to the first map in the Atlas (the coverage map). Parts of N.E. Scotland and many areas in Ireland invite attention rather noticeably. Eventually it may be possible to publish a new edition of the Atlas; alternatively, revised maps could be issued for some of the less satisfactorily recorded species (e.g., for recent segregates, such as those of Columella or Euconulus).

However, the general picture of distribution at national level is now very clear for most species. Perhaps therefore the energies of conchologists should in future be increasingly directed towards investigating some of the many interesting questions which the maps raise. To give one example, why do many so-called catholic species live in some areas but not in others? A way of resolving the problem might be to study the precise field occurrences and habitats of such molluscs at the edges of their ranges, e.g. a snail such as Trichia striolata (map 160), which is unaccountably missing from large tracts of central England. Tetrad (2 x 2km square) mapping could be useful here; such maps are already being compiled for the Mollusca of Surrey (v.c.17), Bedfordshire (v.c.30) and Northamptonshire (v.c.32).

Of course, it will become much easier to define these problems more exactly when the projected set of transparent overlays for the Atlas maps is published. These overlays will show such factors as temperature, rainfall, humidity, altitude, geology, rivers, and so forth. There will also be a map with a 10-km square graticule to help position the dots more easily, and another with the Watsonian vice-counties. Not everyone is as conversant with the "grid geography" of the British Isles as I have become after fifteen years! I understand from the Biological Records Centre that the overlays are now being prepared and should be available some time in the second half of 1977. The price per set is expected to be about £1.50.

M. P. Kerney

SACOGLOSSAN NOTES 3

CLASSIFICATION

Formerly sacoglossans were included in the order Nudibranchiata, as in Jeffrey's British Conchology, Vol. V, 1869. They were first separated from nudibranchs and placed in a separate order, Monostichoglossa, by Fagenstecher in 1875. No one uses this long-winded term nowadays; they prefer, instead, Sacoglossa or Ascoglossa. Both names were published in 1876; the first by v.Ihering and the second by Bergh, and both appear in the literature; many modern specialists prefer Sacoglossa and some use Ascoglossa.

The order is a small one comprising about 150 species, most of which are tropical or sub-tropical; eight species are British. Their chief characteristic is a radula adapted to slit algal walls. Teeth which are no longer of any use are not shed but stored in a sac below the buccal mass, either in a loose ball or in a spiral. Part of the buccal mass is modified to form a pump for the withdrawal of cell contents. In short, sacoglossans are sap-suckers and their hallmark is a small sac in which discarded teeth are stored.

RADULA

In figure 1 (page 538) A and B are semi-diagrammatic. A shows the surface muscles of the buccal mass. B is a half-section with the radula in situ. C, drawings of teeth; 1, lateral view; 2, back view; 3, two interlocking teeth of the lower limb.

am, ascus muscle; bc, buccal cavity; be buccal entrance; cm, circular muscles; fs formative sac in which new teeth are produced; ll, lower limb of radula; lt, leading tooth; mp, posterior muscle pad; od, odontophore (the thick

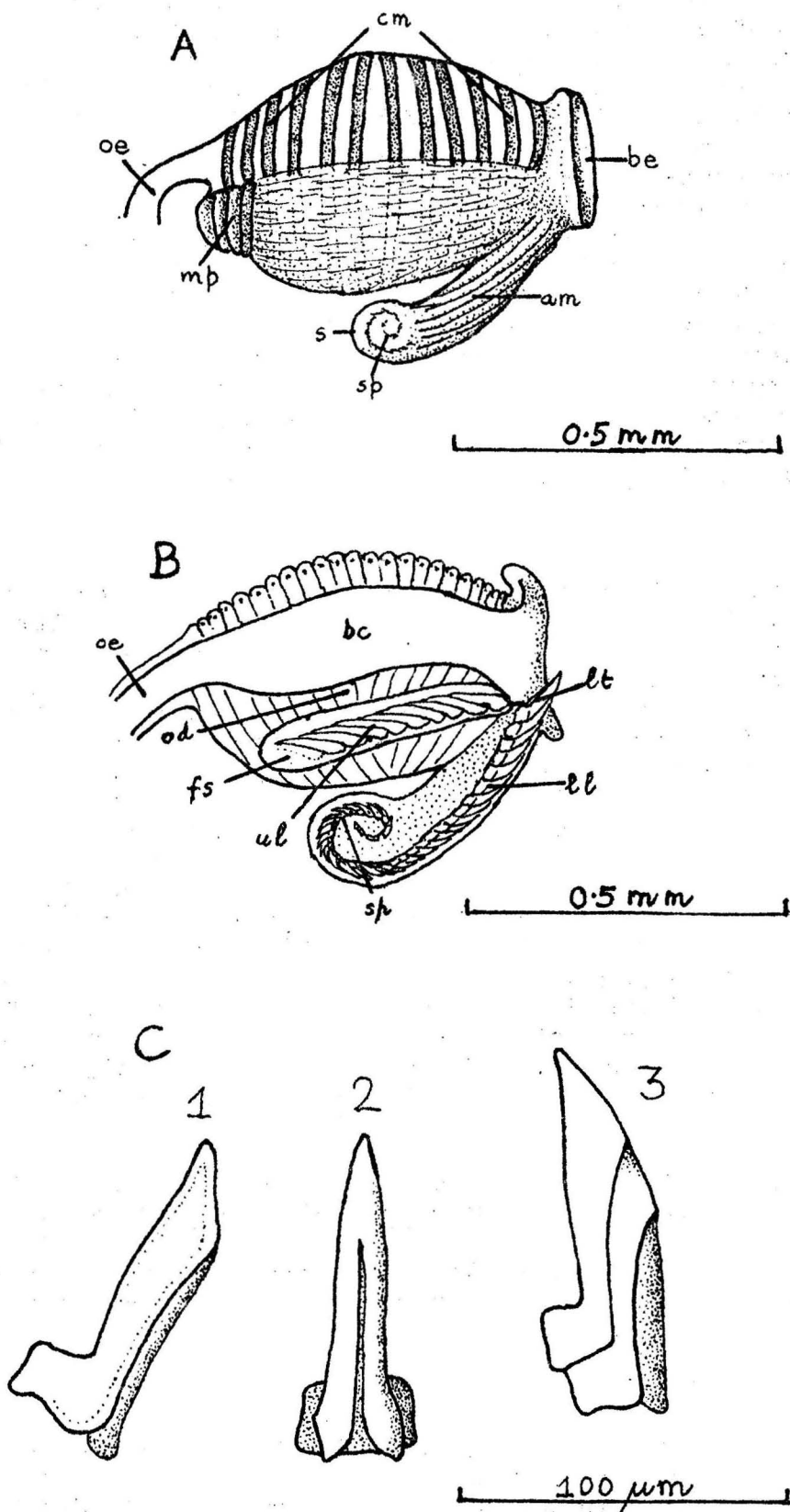


FIGURE 1

Placida dendritica = Hermaea (placida) dendritica = Hermaea dendritica

muscular floor of the buccal cavity in which the upper limb is embedded); oe, oesophagus; s, sac; sp, spiral; ul, upper limb of radula. Note to Fig. A. The gut is tubular from the mouth to the stomach; in the region of the buccal mass it swells and is somewhat like a barrel in shape. The circular muscles form the hoops of the barrel. Their lower halves are obscured by some tissue and by a small posterior muscle pad. The ascus muscle does not quite reach to the ascus so that the spiral of the radula is visible.

The radula of *Placida dendritica* (Fig. 1B) consists of a single

longitudinal row of some 45 teeth attached to a narrow ribbon; the row is bent over the tip of the odontophore thus forming an upper and a lower limb; and at the end of the lower limb is a sac containing a spiral of functionless teeth. The name *Sacoglossa* (or *Ascoglossa*) was derived from this sac for it was once thought that the teeth of the lower limb rasped off bits of alga and the end of the limb was extruded from the sac to grasp the fragments and carry them back into the buccal cavity. This, of course, is not true. The discarded teeth are not involved in any way in feeding, nor does the lower limb function as a rasp. The lower limb acts as a lancet, its point is the uppermost, or leading, tooth and those behind it interlock to form the shaft. By the contraction of the ascus muscle the lancet is driven against an algal wall and the leading tooth pierces it; the contents are then sucked out by the buccal pump. As the animal grows, the leading tooth is replaced by the next one on the upper limb and the former leading tooth moves down and becomes part of the supporting rod. The process is repeated many times and would eventually result in a long, unwieldy rod, were it not that the smaller teeth at the end of the lower limb are cast off, or rolled up in a spiral.

FEEDING

Limapontia capitata is found in rock pools from midshore level to the top of the shore. It feeds exclusively on *Cladophora*, a green, filamentous, branching seaweed. At first sight this monotonous diet seems odd; why does not *L. capitata* have a change from time to time, and feed on *Ulva*, *Enteromorpha*, or small red seaweeds, or even sample young fucoids? Probably because the cells it pierces must be large enough to make the effort worthwhile; thus most sacoglossans feed on acellular algae (*Vaucheria*, *Caulerpa*, *Bryopsis*, *Cladophora*) for with a single slit a considerable amount of protoplasm is made available. Then the size of the tooth matters. *L. capitata* has teeth about 120 μm long and 30 μm wide; these would be unwieldy tools for opening up cells of 50 μm length. The nature of the algal wall is another factor. *Cladophora* has a wall composed of several layers of microfibrils and the strength of the ascus muscle and the size of the teeth are adapted to pierce a wall of this kind; likewise, the buccal pump is strong enough to withdraw the cell contents. For whatever reason, naturalists find that each sacoglossan species feeds only on one or two related species of algae; and this makes the task of collecting sacoglossans much easier. *L. capitata* (length 4-6mm) rarely strays from *Cladophora* (5-15cms long) and the easiest way to find this animal is first to find *Cladophora*.

Recently one of our members, John Llewellyn Jones, made an interesting discovery. He found *Limapontia depressa* feeding on *Cladophora*. Now *L. depressa* has a small buccal mass and small teeth; and it usually feeds on *Vaucheria*, a green, thin-walled alga. The buccal mass of the specimen feeding on *Cladophora* was found to be larger than that of the normal type and the teeth were about 20 μm longer.

'CHLOROPLAST SYMBIOSIS'

This is an unusual form of symbiosis between one type of organelle on the one hand and an animal on the other. In some sacoglossans chloroplasts are sucked into the gut and their tough outer membranes resist digestion; they eventually appear in the cells of the lobules of the digestive gland that lie just below the semi-transparent skin. In this environment the chloroplasts fix carbon by photosynthesis and the sacoglossan benefits by the resulting products. Perhaps a better way of regarding the whole process is to consider it as the capture, or successful transplant, of organelles that increase the efficiency of some cells of the gut. Indeed, this may have been the way in which the eukaryote cell originally obtained organelles from primitive blue-green algae.

Many species appear to harbour active chloroplasts which benefit the animal, but it is difficult to prove this; it requires not only experimental methods, but also ^{14}C fixation and chromatography. So far, it has been convincingly demonstrated in three tropical species of *Sacoglossa*, and also in *Elysia viridis* and *Limapontia depressa* var *pellucida*.

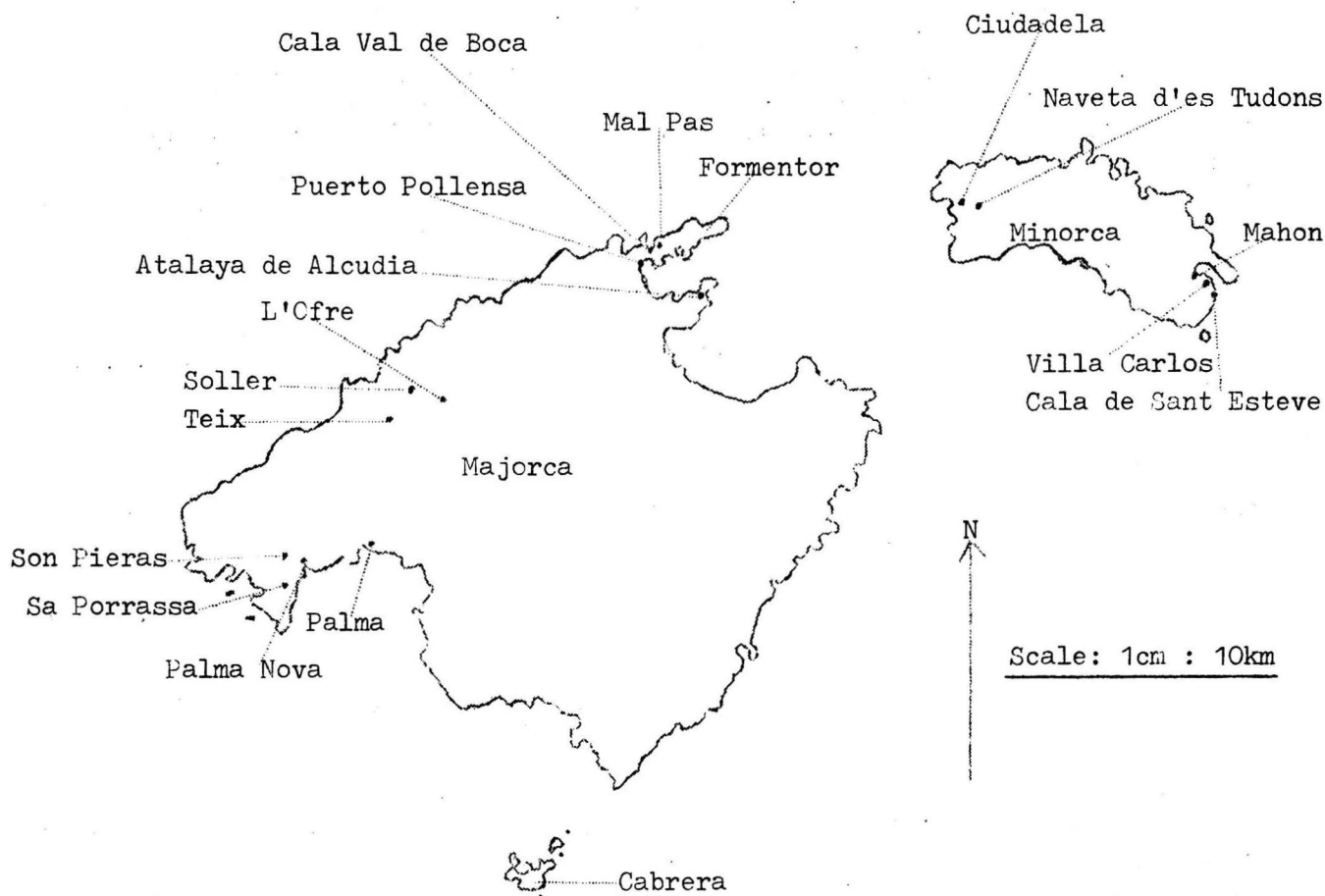
EGG EATERS

Two minute sacoglossans feed on opisthobranch eggs. Stiliger hansineensis, an American species, feeds on the eggs of Haminoea virescens, Aglaja diomedea, and Gastropterion pacificum. It crawls inside an egg-string and engulfs the eggs one by one; sometimes as many as 10 to 20 a minute. It has a barrel-shaped buccal mass and the radula is vestigial. Calliopaea vesiculosa is a European species that feeds on the eggs of Favorinus branchialis, Philine denticulata and Retusa trunculata. It makes a hole in the outer casing of an egg-string and sucks out the eggs; it can force the anterior half of its body into the egg-string in order to obtain more eggs. The radula of C. vesiculosa is not vestigial and has some teeth with broad cusps.

J. B. Sigurdsson has recently found specimens of Calliopaea vesiculosa in two Northumberland bays. Since the species is new to the British fauna it could be added to Winckworth's check-list, The British Marine Mollusca (Journal of Conchology, 1932, 1951).

Tom Gascoigne

BALEARIC SNAILS



The Balearic islands lie in the Mediterranean sea off the east coast of Spain and consist of Majorca, Minorca, Ibiza, Formentera and Cabrera, together with many small offshore islets.

In March 1974 I stayed for a few days in Palma Nova, Majorca, hoping to collect the endemic Iberellus balearicus (Zeigler) which is distributed along the north western Sierras from Soller to the Formentor Peninsula. As I had to rely on my feet or public transport, I took the train from Palma to Soller which follows a very scenic route. I could not climb high enough into the mountains and I returned to the hotel with some Eobania vermiculata Muller. I decided to spend the remaining days in the Palma Nova neighbourhood and on the second day started to walk towards Son Pieras. After some heavy rain, I found the following species amongst Pinewood clumps and large rocks: Tudorella

ferruginea (Lamarck) an operculate, Pseudotachea splendida (Draparnaud), Eobania vermiculata (Muller), Otala lactea (Muller), Rumina decollata (L.), Sphincterochila cariosa (Michaud). Further up a steep boulder-clad slope I found three specimens of Iberellus companyoni Aleron. On my last day, walking towards Sa Porrassa I found nothing new but could not help noticing the abundance of Theba pisana (Muller) and Eobania vermiculata (Muller) amongst the roadside vegetation.

In late April/early May 1975 I made a return visit staying at Soller for the first few days. Having climbed to the summit of Teix (1062m) I only found some large specimens of Otala lactea (Muller). Another climb up to L'Ofre (1090m) was more rewarding as I found some beautiful specimens of Iberellus balearicus (Zeigler) about halfway up, under some flat moss-covered stones. The next few days were spent at Puerto Pollensa and I again found some more Iberellus balearicus (Zeigler) near Mal Pas. Otala punctata (Muller) turned up at Cala Vall de Boca under some large boulders which I could only just lift. I also found some large bleached specimens at Atalaya de Alcudia (444m).

I was very pleased with my acquisitions, but unfortunately I could not reach the extremity of the Formentor peninsula, the only locality for Iberellus graellsianus (Pfeiffer). I shall have to make a return visit.

I flew over to Minorca for the last remaining days of my holiday and within half an hour of arrival I found numerous specimens of Marmorana (Murella) muralis (Muller), an introduction from Sicily. I stayed at Villa Carlos just outside Mahon, the capital, where I found the following species: Pappilifera bidens (L.), Theba pisana (Muller), Rumina decollata (L.), Otala lactea (Muller), Eobania vermiculata (Muller), and Helix aspersa Muller. The pre-historic sites were good localities for collecting. The endemic Iberellus minoricensis (Mittre) was fairly common on a wall down by the quayside at Ciudadela and I also found it in old walls around Naveta d'es Tudons. It turned up too at Cala de Sant Esteve which is situated at the eastern extremity of the island.

No rain fell during my fortnight's holiday and I found no slugs. A few Helicella were found but await identification and I am grateful to Mr. J.F.M. de Bartolomé for his kind assistance.

Reference

James D. Parrack. The Naturalist in Majorca. David & Charles: Newton Abbot (1973).

Derek R. Worth

A BRIEF SURVEY OF THE LAND MOLLUSCA OF THE DORDOGNE REGION OF FRANCE

Many people know the Dordogne region as famous for its colourful landscape, architectural history and food. Indeed there can be few inland areas of France endowed with such a wealth of scenic beauty and such a long cultural heritage from prehistoric times to the present. Many tourists come to visit the caves, several of which were occupied by Palaeolithic man thousands of years ago and who decorated them with paintings of contemporary animals. Others simply come for the food, for this is the region where truffles and foie gras abound. Geographically the area is situated in south-west France some 200 Km. north of the Pyrenees. The River Dordogne itself rises in the Central Massif in the Puy de Sancy and flows through the spas of Mont Dore and La Bourboule and then south-westwards to the sea west of Libourne.

During August 1975, the authors visited the middle region which extends roughly from Bergerac east to Sarlat; the country commonly called the Périgord Noir, because of the deep shadow cast by the trees over the high plateau. This is limestone country peppered with caves and steep river valleys. It was while touring this area that cursory collecting revealed that this limestone district supported quite a rich snail fauna. A few bulk samples of leaf litter/moss were taken for later analysis of the smaller species. This note records the species that were found and gives some brief ecological notes on the various

habitats sampled. The lists are by no means comprehensive, indeed no records of slugs were kept, but in view of the extreme shortage of molluscan records for the region, a note here seemed worthwhile. Such lists may provide useful information for the future compilation of European census distribution maps; the 10 Km. grid references are given in brackets after each site.

	a	1*	b	2	3	4*	5	6*	7
<u>Cochlostoma septemspirale</u> (Razoumowsky)	x	x	x	x	x	x	x	x	x
<u>Pomatias elegans</u> (Müller)	x	x	x	x	x	x	x	.	x
<u>Acicula fusca</u> (Montagu)	.	.	.	.	x	.	.	.	.
<u>Carychium minimum</u> Müller	.	.	.	.	.	.	.	x	.
<u>Carychium tridentatum</u> (Risso)	x	.	.	.	x	.	.	.	.
<u>Succinea putris</u> (Linne)	.	.	.	.	.	.	.	x	.
<u>Cochlicopa lubrica</u> (Müller)	x	.	.	.	.	.	.	x	.
<u>Pyramidula rupestris</u> (Draparnaud)	.	x	x	x	.	.	.	.	x
<u>Truncatellina callicratis</u> (Scacchi)	.	x	?x	.	.	.	.	.	.
<u>Truncatellina claustralis</u> (Gredler)	.	x	.	.	.	.	.	.	.
<u>Truncatellina</u> sp.	.	.	.	.	x	.	.	.	.
<u>Vertigo pusilla</u> Müller	.	x	.	.	x	.	.	.	.
<u>Vertigo pygmaea</u> (Draparnaud)	.	x	.	.	.	.	.	x	.
<u>Vertigo moulinsiana</u> (Dupuy)	.	.	.	.	.	.	.	x	.
<u>Orcula doliolum</u> (Bruguière)	x	.	.	.	x	.	.	x	.
<u>Pagodulina pagodula</u> (Des Moulins)	.	.	.	.	x	.	.	.	.
<u>Granopupa granum</u> (Draparnaud)	.	x	x	.	.	.	x	.	.
<u>Abida secale</u> (Draparnaud)	.	x	.	d	d	.	x	.	.
<u>Chondrina avenacea</u> (Bruguière)	.	x	.	.	.	.	.	.	x
<u>Pupilla muscorum</u> (Linne)	d	x	.	.	.	.	.	.	.
<u>Lauria cylindracea</u> (da Costa)	x	x	x	x	x	.	.	.	x
<u>Vallonia costata</u> (Müller)	x	x	.	.	.	.	.	.	.
<u>Acanthinula aculeata</u> (Müller)	.	.	.	.	x	.	.	.	.
<u>Jaminia quadridens</u> (Müller)	d	.	.	.	.	.	x	.	x
<u>Ena obscura</u> (Müller)	x	.	x	.	x	.	.	.	.
<u>Punctum pygmaeum</u> (Draparnaud)	x	.	.	.	x	.	.	.	.
<u>Discus rotundatus</u> (Müller)	x	x	x	x	x	x	x	x	.
<u>Semilimax cf pyrenaicus</u> (Ferussac)	.	.	.	.	x	.	.	x	.
<u>Semilimax</u> sp.	.	.	.	.	.	.	x	.	.
<u>Phenacolimax major</u> (Ferussac)	x	.	.	x	x	x	x	x	x
<u>Vitrea crystallina</u> (Müller)	.	.	x	.	.	.	.	x	.
<u>Vitrea contracta</u> (Westerlund)	x	x	.	.	x	.	.	.	.
<u>Nesovitrea hammonis</u> (Ström)	.	.	.	.	.	.	.	x	.
<u>Aegopinella pura</u> (Alder)	.	.	.	.	x	.	.	x	.
<u>Aegopinella nitidula/nitens</u>	x	.	.	.	x	x	x	x	.
<u>Oxychilus cellarius</u> (Müller)	.	.	.	.	x	.	.	.	.
<u>Oxychilus draparnaudi</u> (Beck)	x	.	x	x	.	.	.	x	.
<u>Euconulus fulvus</u> (Müller)	x	.	.	.	x	.	.	x	.
<u>Ceciloides acicula</u> (Müller)	.	x	.	.	.	.	.	.	.
<u>Cochlodina laminata</u> (Montagu)	.	.	.	.	.	.	x	.	.
<u>Macrogastra rolphii</u> (Turton)	.	.	.	.	.	.	.	x	.
<u>Clausilia parvula</u> Ferussac	.	x	x	.	.	.	.	.	.
<u>Clausilia bidentata</u> (Ström)	x	x	x	x	x	x	x	x	x
<u>Testacella cf haliotideae</u> Draparnaud	d	d	d	.	.	.	.	.	.
<u>Candidula intersecta</u> (Poiret)	.	x	x	.	.	.	.	.	.
<u>Candidula gigaxii</u> (Pfeiffer)	.	x	.	.	.	.	.	.	.
<u>Cernuella neglecta</u> (Draparnaud)	.	.	.	.	.	.	.	.	x
<u>Helicella itala</u> (Linne)	.	x	.	.	.	.	.	.	.
<u>Monacha cartusiana</u> (Müller)	x	x	x	.	.	.	x	.	x
<u>Hygromia limbata</u> (Draparnaud)	x	.	.	x	.	.	.	.	.
<u>Trichia hispida</u> (Linne) agg.	x	x	x	.	x	.	.	x	x
<u>Arianta arbustorum</u> (Linne)	x	.	.	.	.	.	.	.	.
<u>Helicigona lapicida</u> (Linne)	x	x	.	x	x	x	.	.	x
<u>Chilostoma corneum</u> (Draparnaud)	x	.	.	x	x	.	.	.	.
<u>Cepaea nemoralis</u> (Linne)	x	.	.	.	x	.	.	.	.
<u>Cepaea hortensis</u> (Müller)	x	x	.	.	.	.	.	x	.
<u>Helix aspersa</u> Müller	x	.	x	x	.	.	.	.	.
<u>Helix pomatia</u> Linne	.	.	.	.	.	.	.	.	x

* Bulk sampled d Dead shells

THE SITES

1. Les Eyzies (CK47)

This location was characteristic of many of the sites visited. The village is situated at the confluence of the Beaune and the Vézère. Limestone cliffs rise steeply, sometimes sheer, from the river edge to heights of between 50 and 100 metres above sea level. This is the essential physical characteristic of the countryside - the plateau seamed by the broad, flat steep-sided valley of the Dordogne and Vézère. The rock is a yellowish Cretaceous limestone, while the plateau surface is in parts capped by ferruginous sands and gravels. At present the limestone plateau surface bears white oak, hornbeam, juniper scrub, box and evergreen oak while the plateau sands have the chestnut forests mixed with black oaks and an undergrowth of gorse and bracken. The rock surfaces bear ferns, mosses, lichens, evergreen oaks and ivy; the river banks are fringed with alder and willow and, wherever there is water in the valley bottoms, Lombardy poplars grow.

Two habitats were sampled on this occasion, although the distinction between them was not clearly defined.

- a. Some woodland and adjoining waste ground, and
- b. the dry limestone surfaces and slopes of the hill overlooking the valley.

Bulk samples were taken from both habitats.

2. Le Bugue (CK37)

The grassland slopes and waste ground outside the Caverne de Bara-Bahau.

3. Beynac-et-Cazenac (CK56)

Old ivy-covered walls leading to the Chateau.

4. Pont de Cause (CK56)

A shaded bank thickly covered in moss (bulk sampled) on the D50.

5. St. Cybranet (CK56)

Woodland and a grassland bank between Cenac and St. Cybranet.

6. Sarlat (CK57)

A marsh and meadow between Vitrac and Sarlat.

7. Martel (CK87)

Dry grassland and limestone surfaces on the N703 between Souillac and Martel.

NOTES ON CERTAIN SPECIES

Acicula fusca (Montagu). Indistinguishable from typical British A. fusca. There are very few confirmed records of this species from France.

Truncatellina. At least two species of Truncatellina were found. Of these T. claustralis (Gredler) was found in quite large numbers on the grassland slopes at Les Eyzies. This species differs from T. callicratis (Scacchi) in being rather narrower and in possessing a deep-set palatal tooth not visible from the aperture. Previously T. claustralis was only known from eastern France, although its occurrence in alluvial deposits of the Garonne at Bordeaux was recorded by Germain (1930). No name could be put to three Truncatellina shells from the bank at Pont de Cause; they possessed very weak sculpture and were rather narrower than shells from the other sites.

Vertigo moulinsiana (Dupuy). A single shell of this local species was found living in the marsh between Vitrac and Sarlat.

Pagodulina pagodula (Des Moulins). This very local species was originally described from this region, its type locality being the Chateau-de-Lauquais, some 12 Km. from Bergerac. As at Pont de Cause, it is recorded from among moss and stones and said to prefer oak forests in hilly regions where it is locally abundant (Germain 1930).

Pupilla muscorum (Linné). The form found at Les Eyzies was referable to the var bigranata Rossmässler, sometimes given specific rank. No examples of Pupilla triplicata (Studer) were found by us, although this species has been found near the Font de Gaume at Les Eyzies (S.P. Dance, personal communication).

Semilimax cf pyrenaicus (Ferussac). Several live Semilimax were found among sedges and moss bordering a marsh near Sarlat, and a single fresh shell was found in a bulk sample of moss from the bank at Pont de Cause. None of these shells were fully grown but were compared with reference material of Semilimax semilimax and Semilimax pyrenaicus, and were considered to be closer to the latter species, particularly in respect of the apertural characters. As viewed from below the aperture of S. semilimax is cut away to a greater extent than in S. pyrenaicus, indeed Germain states that their main distinction is the relative widths of the apertures; S. pyrenaicus possessing a relatively smaller aperture with transverse measurement less than $\frac{3}{4}$ the diameter of the whole shell. These specimens were examined by Dr. L. Lloyd Evans who pointed out that these immature Dordogne shells straddle this critical ratio, but questioned the validity of this character when applied to juvenile shells. In view of the recorded distribution of S. pyrenaicus he tentatively assigned these shells to S. semilimax. However until live material can be obtained for anatomical confirmation we still consider that these Dordogne shells are nearer S. pyrenaicus. Certainly the habitats are very similar to the known Irish sites of S. pyrenaicus (Fogan 1969). If these shells are indeed S. pyrenaicus then the known French range of this rare species must be extended northwards by some 200 Km.

Phenacolimax major (Ferussac). P. major a local species restricted to old woodland in Britain, was found commonly in all the shaded habitats sampled. Vitrina pellucida (Müller) however, common in Britain, was not found. This absence may be a temporal effect as V. pellucida is said to be active during the winter months dying off in the summer (Boycott 1934).

Oxychilus draparnaudi (Beck). Very common at virtually all sites, including quite wild situations although O. cellarius (Müller), so plentiful in Britain, appeared to be uncommon or completely absent. It would appear that O. draparnaudi replaces O. cellarius in this region and is found in a wider variety of habitats than in Britain, appearing to be less synanthropic.

Chilostoma corneum (Draparnaud) (= squammatinum (Moquin-Tandon)). This species was found in crevices on shaded rock faces, old walls and other rupestral habitats. This species is only known from south-west France and the Pyrenees.

Finally mention should be made of three species, Granopupa granum (Draparnaud), Chondrina avenacea (Eruguière) and Orcula doliolum (Bruguière), that although common over most of France are said to be rare or local in western France. The first two were both found in xerophilic habitats, dry limestone slopes and screes while O. doliolum was found among moss in more shaded conditions.

The authors would like to thank Dr. L. Lloyd Evans for examining the Vitrinidae, and Dr. M. P. Kerney who spent many hours checking all the determinations and at whose suggestion this note was written.

REFERENCES

- Boycott, A.E., 1934. The habitats of land Mollusca in Britain, J. Ecol. 22: 1-38.
Fogan, M., 1969. Vitrina (Semilimax) pyrenaica (Ferussac) in Kerry North, Ir. Nat. J. 16, 175.
Germain, L., 1930. Faune de France 21. Mollusques Terrestres et Fluviatiles. 2 parts. Lechevalier, Paris.

R. C. Preece & M. J. Willing

EDINBURGH 25th. - 26th. MARCH 1976

A symposium is in many cases only as good as the organisation behind it. I am, therefore, pleased to be able to write this short report and, on behalf of all the people who attended the symposium, congratulate David Heppell, Shelagh M. Smith and all the staff of the Royal Scottish Museum for the care and effort they put into the project.

The programme, like a well-oiled clock, ran without a hitch, a fact much appreciated by everybody. The balance of talks was, as might be expected, in favour of the marine interests with hundreds of colour slides being shown of sea-slugs from many parts of the world, both at the symposium and at the halls of residence in the evenings. From a taxonomic point of view the whole project was a great success with many new and undescribed species being discussed, and some taxonomic problems were solved.

There are too few occasions for people to meet and discuss mutual interests, particularly with people outside Britain and it is only on such rare occasions as this that they will make the effort to get together, and justify the cost.

A full report of each of the talks is to be published in the Journal of Molluscan Studies, and therefore I will not attempt to give an account of each of the talks, as I would not be able to do them justice. Those members who did not go to the meeting missed what may be one of the most interesting and important gatherings of people interested in the study of the Mollusca to have been held in Britain for many years.

S. M. Smith and Ad. Norris

EXCURSION TO DUNBAR, TYNINGHAME, POLTON AND ROSLIN, 28th. MARCH 1976

This excursion followed upon the sea-slug and land-slug symposium in the Royal Scottish Museum. Eighteen people got up early and arrived at Dunbar at 8.00 a.m. to catch the tide. Despite the very strong westerly wind which made searching under water difficult and which at times blew away small specimens and polythene bags, most of the nudibranchs previously found at this locality were collected. Aegires punctilucens and Ancula cristata were added to the site records. The sacoglossan Limapontia capitata was found in rock pools where previously it had been overlooked. Attention was paid to the differences between Lamellaria latens and L. perspicua, between Littorina littoralis and L. mariaae and between L. rudis and L. neglecta. The party then moved to Tynninghame and visited the saltmarsh, finding Limapontia depressa and Alderia modesta in abundance.

After lunch in the woods some members left the excursion and the remaining ten people went to Polton to investigate the woods there. Both slugs and shelled molluscs were noted.

The final locality visited was Roslin where few species were found. However a large colony of slugs including two segregates of Arion hortensis was discovered. At 5.00 p.m. the party dispersed after a long and enjoyable day.

List of opisthobranchs found at Dunbar, and Tynninghame.

Dunbar. This locality is very rich in molluscs and while many species were noted in passing no attempt was made to record all species.

Acanthodoris pilosa
Aegires punctilucens
Alderia modesta*
Ancula cristata
Archidoris pseudoargus
Cadlina laevis

Facelina auriculata
Goniodoris nodosa
Jorunna tomentosa
Limacia clavigera
Limapontia capitata
L. depressa*

Coryphella verrucosa
Doto coronata

Onchidoris fusca
O. muricata
Trinchesia foliata

*Salt marsh, Tynninghame, NGR 36(NT)6379
Rocks at Dunbar, NGR 36(NT)6679

List of land slugs found at Polton and Roslin.

<u>Arion intermedius</u> Normand	<u>Limax maximus</u> L.
<u>A. circumscriptus circumscriptus</u> Johnston	<u>Lehmannia marginata</u> (Müller)
<u>A. c. sylvaticus</u> Lohmander	<u>Agriolimax reticulatus</u> (Müller)
<u>A. fasciatus</u> (Nilsson)	<u>A. caruanae</u> Pollonera
<u>A. hortensis</u> Ferussac, form a	<u>A. laevis</u> (Müller)
<u>A. subfuscus</u> (Drap.)	
<u>A. ater</u> (L.) agg.	

REPORT ON THE FIELD MEETING HELD AT REETH, ARKENGARTHDALE, YORKSHIRE

ON SATURDAY AND SUNDAY, 17th. & 18th. JULY 1976

The combined billing of this meeting with the Conchological Society of Great Britain and Ireland, the Yorkshire Conchological Society and the Yorkshire Naturalists' Union produced a total of 16 conchologists and their friends for part or whole of the two day meeting. Two 10 km squares were examined SE44 0--9-- , Lower Arkengarthdale and NZ45 0--0-- , Upper Arkengarthdale, 43 species were recorded in the lower and 43 in the upper part of the dale, a combined total of some 50 species. The most important records were as follows; a few examples of the very local snail, 'in the Yorkshire area', Helicella itala (L.), were found near the scar above Reeth. Clausilia dubia Drap., and Ashfordia granulata (Alder) proved difficult to find but examples were found in Barney Beck, Healaugh near Reeth. The very local slug Deroceras agreste (L.) was found both on the grassland below the Scar and in Barney Beck extending the known distribution of this species in Yorkshire.

Visits to Redmire and Fleet Moss produced three other interesting local species. At Redmire an old ivy-covered wall provided specimens of Vertigo alpestris Alder and V. pusilla Muller, whilst Fleet Moss proved successful in the acquisition of Vitrea subrimata (Reinhardt).

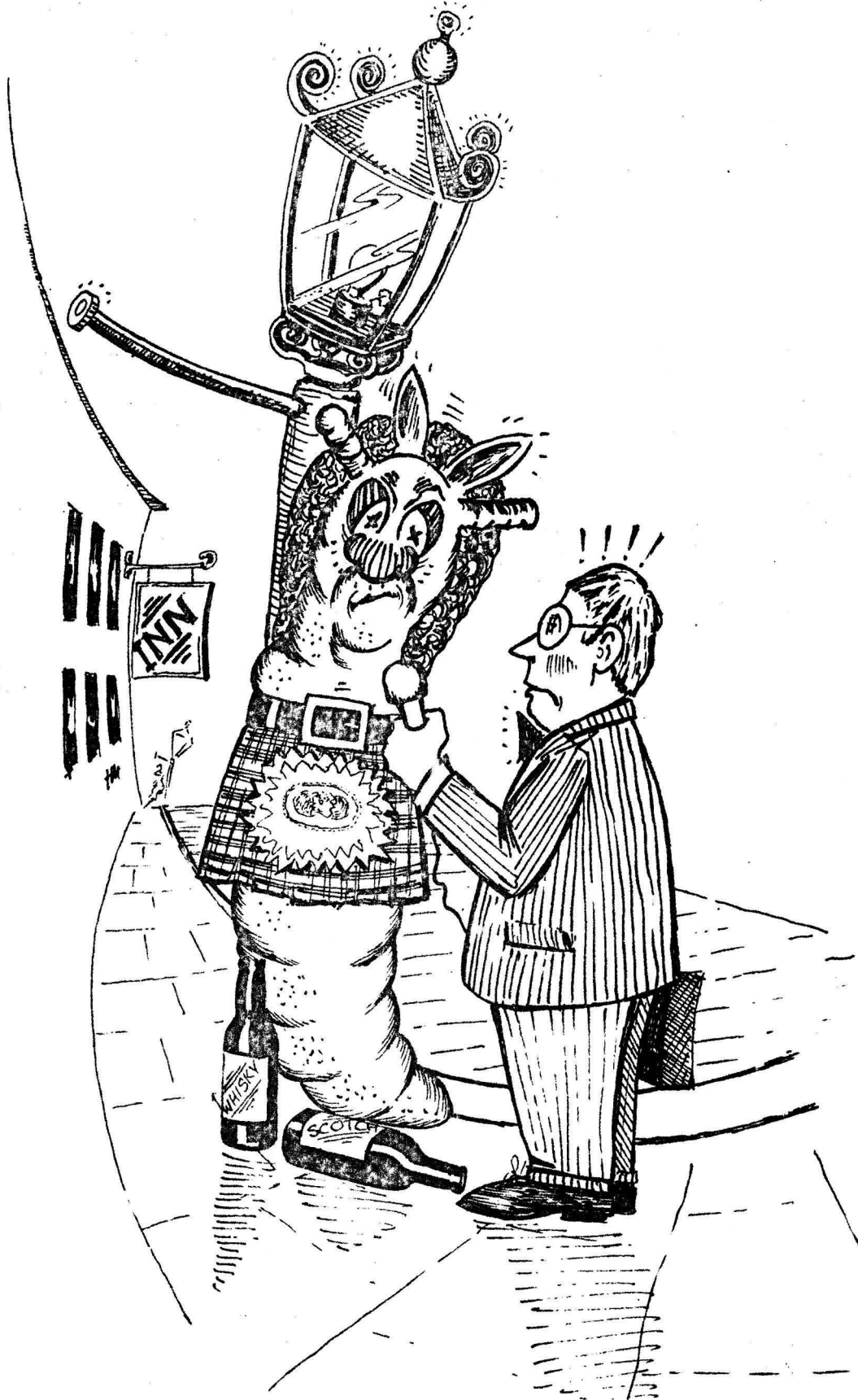
LIST OF SPECIES RECORDED

45/0--0-- 44/0--9-- = A & B

<u>Acicula fusca</u>	A	<u>Vitrina pellucida</u>	A B
<u>Carychium minimum</u>	A B	<u>Vitrea crystallina</u>	A B
<u>C. tridentatum</u>	A B	<u>V. contracta</u>	A B
<u>Succinea putris</u>	B	<u>Nesovitrea hammonis</u>	A B
<u>Oxyloma pfeifferi</u>	A	<u>Aegopinella pura</u>	B
<u>Cochlicopa lubrica</u>	A B	<u>A. nitidula</u>	A B
<u>C. lubricella</u>	A B	<u>Oxychilus cellarius</u>	A B
<u>Pyramidula rupestris</u>	A B	<u>O. alliarius</u>	A B
<u>Columella aspersa</u>	A	<u>Limax maximus</u>	B
<u>Vertigo pygmaea</u>	A B	<u>L. marginatus</u>	A B
<u>Lauria cylindracea</u>	A B	<u>Deroceras laeve</u>	A
<u>Vallonia excentrica</u>	A B	<u>D. agreste</u>	A B
<u>Ena obscura</u>	A B	<u>D. reticulatum</u>	A B
<u>Punctum pygmaeum</u>	A B	<u>Euconulus fulvus</u>	A B
<u>Discus rotundatus</u>	A B	<u>Cochlodina laminata</u>	A B
<u>Arion ater</u>	A B	<u>Clausilia bidentata</u>	A B
<u>A. circumscriptus</u>	A B	<u>C. dubia</u>	B
<u>A. fasciatus</u>	A	<u>Balea perversa</u>	A B
<u>A. hortensis</u>	A B	<u>Helicella itala</u>	A
<u>A. intermedius</u>	A B	<u>Ashfordia granulata</u>	A B
<u>Trichia striolata</u>	A B	<u>Potamopyrgus jenkinsi</u>	B
<u>T. plebeia</u>	A	<u>Lymnaea truncatula</u>	A B
<u>T. hispida</u>	A B	<u>L. peregra</u>	B
<u>Arianta arbustorum</u>	B	<u>Ancylus fluviatilis</u>	A B
<u>Cepaea hortensis</u>	A B	<u>Pisidium personatum</u>	A B

Ad. Norris, Recorder, Yorkshire Conchological Society

Diagnostic features - overall length 193 cm when fully extended but only 142 cm when contracted. The general aspect of the body is rather typical of the genus Goniodoris but with extra protuberances and depressions to the rear of the rhinophores. The centre protuberance is bright red and covered with large tubercles, the two depressions forward of this protuberance are partially glazed and of a blood-shot appearance. The slit-like structure to the rear of these seems to be always open and is said to be able to produce an audible



**(8). DO YOUR CONGENERIC SPECIES SHOW
ZOOGEOGRAPHICAL CHARACTERISTICS
SIMILAR TO YOUR OWN?**

sound. The general colour of this remarkable animal is white with green rhinophores and yellow gills.

Type locality - First seen by Mr. David Heppell soon after emerging from a tavern near the Firth of Forth on Saturday evening the 27th. of March 1976.

A full description is to be forwarded for publication to *Alcoholics Anonymous*.

IN RETROSPECT

(To the Conchological Society)

What now?
What now when the celebrations dim
And settle? Do we look back and count the years,
Or be as the burdened pilgrim,
Searching for life?

When time shifts beach shells, falling
Waves whisk them round and back.
If we take them on their calling
they become of us.

When we look into their form
A past lies before our eyes,
And angles new, a storm
Of seas, pent up, imagined,
Opens respect.

Time has the last laugh.
It swallows up their lives
As it plunges, dives
And strands.

We
Have not overstayed our welcome,
Being wise. Time has treated us
Better than it has shells.

We
Stand at the tip of a pinnacle
Built upward of past dead dedication
Living love, let us not fall.

Peter Topley (Junior Member)

REVIEW

The Murex Book, an illustrated catalogue of Recent Muricidae (Muricinae, Muricopsinae, Ocenebrinae) by Ruth H. Fair. pp. ix-xvi, 17-138, 23 plates. Published by Ruth H. Fair, [REDACTED], Honolulu, Hawaii 96825. Price \$ 8.00.

This well-produced paperback is, as the title indicates, a catalogue of the Muricidae, but it is in fact much more than that, a very useful list of genera and subgenera is given, together with the basic characteristics for separating one genus from another, although it is perhaps regrettable that such well-established genera as Haustellum, Bolinus, Phyllonotus and Siratus are given the status of subgenera.

The species are arranged alphabetically and those which the author considers valid are concisely described, generally-accepted synonyms are listed as such. Perhaps wisely, no attempt has been made to decide on the status of a number of critical species and the user of the catalogue is left to form his or

her opinion regarding them. One may be forgiven, however, for wondering why Murex unidentatus Sowerby, 1834, has been separated from M. trapa Roding, 1798, and M. sobrinus A. Adams, 1863, from M. rectirostris Sowerby, 1841, especially so in the latter case, since the author says of M. sobrinus, "differs from rectirostris in lacking brown bands", and her figure of this species distinctly shows a shell possessing these.

Undoubtedly the most useful feature of this catalogue is the illustrations, these consist of 23 black and white plates and numerous text figures. The figures vary in quality, depending apparently on whether the original photograph was made from a specimen or a previously published figure; on the whole they are very good. Especially helpful are the numerous reproductions in the text of copies of figures from previous works illustrating little-known species, many of which were, in any case, completely inaccessible to the majority of collectors.

A few errors seem to have crept into the explanation to the plates, Haustellum haustellum (L.) is stated wrongly to be from the Mediterranean and Hexaplex kusterianus (Tapparone-Canefri) from West Africa, this is, in fact, a common Red Sea species. The figured specimen of Naquetia barclayi (Reeve) in the B.M.(N.H.) is one of two syntypes, not the holotype as stated. The locality West Africa given for Homalocantha digitata (Sowerby), a Red Sea species, is almost certainly erroneous.

There is no doubt that this very practical and useful work is an absolute 'must' for all who are interested in the Muricidae and we are deeply indebted to the author for giving us something collectors have always been hoping for.

T. Pain

REVIEW

Framgaläde snäckor från Svenska västkusten (Prosobranch shells from the Swedish west coast) by Bengt Hubendick and Anders Wären. Naturhistorisks Museet, Göteborg, 1976. Price, 25 Swedish kronor.

This beautifully illustrated book should become a standard work for those who are interested in the North Atlantic and North Sea fauna. It consists of a series of 7 papers published in the Göteborgs Naturhistoriska Museum Årstryck between 1969 and 1975. Unfortunately for us it is in Swedish.

The book consists of an introduction, a name list which acts as an index and the figures and descriptions. The large figures are superb. There are usually two views of each species, more where the species is particularly variable, for instance Rissoa parva. Juveniles, protoconchs and details of the sculpture are figured where these aid identification. About 148 small, recent and fossil species from southern Sweden are described. One hundred and one of these have been recorded in the British marine area. Hubendick and Wären have covered the Rissoidae extensively. The Eulimidae and some Turrids are usefully included. Brackish water hydrobids are not.

The brief descriptions are followed by geographical distribution, depth range and substrate data. The Swedish text is not too difficult to cope with. The nomenclature follows, in the main, that used by British conchologists although there are some deviations. There are also some name changes between the original paper and the later name list reflecting changes in the accepted usage between 1969 and 1975. Other differences are obviously mistakes. These irregularities are effectively covered by the name list/index which includes generic and specific names and some synonyms. Entry into the list under a synonym results in a reference to the accepted name and thence to the figure and description. There are several mis-identifications some of which have been corrected in the 'additions and corrections' at the end of the work. A more detailed review is to appear in the Journal of Conchology in due course, those wishing to correct their copy should refer to that review.

Considering that very few books of this type are perfect, Hubendick and Wären have made a very creditable effort, the illustrations are, of course,

the *raison d'être* for the book. It is very unfortunate that no further volumes are planned, British conchology is badly in need of some good illustrations of the Pyramidellidae.

The book can be ordered from the Naturhistoriska Museet, Box 11049, 400 30 Göteborg, Sweden, for 25 Swedish kronor. A cheque should accompany the order.

C. J. Pain, C. P. Palmer

REVIEW

The Hamlyn Guide to Shells of the World by A. P. H. Oliver, illustrated by James Nichols; Hamlyn 1975: £2.25.

Another coffee-table book of beautiful shells? Not really, because this is a hard-wearing pocket-size volume which will be used as a working book by grateful collectors rather than merely for contemplation. Over a thousand species are illustrated in full and accurate colour, and a description provided for each as well as many others in addition. For the price, this is remarkable value.

The arrangement is strictly practical and can be put to excellent use by any general collector. There is an introduction, glossary and bibliography after which the shells, grouped according to their families, are dealt with by means of an illustration on the right-hand page and a description on the left. It must be said at once that the drawings are unusually fine and succeed in bringing out the character of the shell (which many artists cannot do) as well as accurately portraying details of its texture and colour. Taken in conjunction with brief but perfectly adequate descriptions they make positive identification a virtual certainty in nearly all the species dealt with. Nomenclature is up-to-date, and if there are any errors of fact the reviewer did not find them, although there is a mix-up in printing between the descriptions of Vermetus cereus and V. fargoi on p. 50. Sufficient shells are included for the usual criticisms of the Author's choice to be muted in this case, and notable omissions are few although they do include Nerita peleronta, Neptunea and Carinaria.

However, taken from another point of view it might be said that, the title being what it is, the omissions are considerable. In effect, ninety seven per cent of the shells dealt with are marine gastropods; marine bivalves are allotted six pages and four out of the five remaining molluscan classes are dealt with on a single page, presumably in an attempt to give a rounded picture. The Aplacophora alone are unmentioned - perhaps as having no shells - and there are no figured representatives from the land or fresh water. As these last few pages are useless for identification, which is possibly the main purpose of the book, it might have been a worthwhile improvement to replace them by further gastropod pages and to make clear in the title that the book dealt entirely in marine gastropods. This would open the way to two additional and equally excellent volumes dealing with the other aspects of the conchological world.

T. E. Crowley

REVIEW

'The Spell of the Shell' by Martha Keeling Hodgson (Andre Deutch, 1976) £3.95.

The reader may correctly conclude from the title that shells are for the author of this book, articles of beauty rather than of scientific significance. She seems to subscribe to the philosophy that a true-born collector does not necessarily need to know much about the animal which once occupied the shell any more than about the craftsman who made a fine piece of antique furniture. It is sufficient for the article to be beautiful, although better still if it is surrounded with associations.

Mrs. Hodgson has collected many of her shells herself, as she relates - others she bargained for in various far-distant parts of the earth, but it must now be that almost every specimen in her collection is valued for the particular memories which surround it. In other words, she is an enthusiastic collector of experiences as well as of shells.

The use of popular names makes one doubtful at times which precise shell is being discussed, but one would not have it otherwise, because on the occasions when the author ventures into the world of scientific nomenclature she almost invariably mis-spells the name - probably a subconscious feeling of contempt for pettifoggery detail. Shells are mainly a pivot round which Mrs. Hodgson relates the various adventures in world travel pursued by her husband and herself. In many ways the result is rather like a larger-scale series of those travel articles which proliferate in the national press once Christmas is safely over, but one is spared the sententiousness common to most of them by the author's well-developed sense of humour. She has a graphic turn of phrase and is happily capable of laughing at herself while rushing the reader relentlessly on from one remote part of the globe to another.

Her attitude to the Society, of which she is a long-standing member, seems to be compounded of affection and awe in equal parts. It seems for her an organisation containing both friends and impossible technicalities of confusing 'latin names' being bandied about; one has heard before this objection to the study of the invertebrates and it has even been made by horticulturalists before going home to tend their Eschscholtzias or plant a few Cupressus lawsoniana with a complete absence of nomenclatorial difficulty. It must be said in defence of the Society and by way of correction, that it has never yet officially gathered in the Victoria and Albert Museum.

The author repeats again the old misconception about the difference between conchology and what she terms 'malochology', and she is certainly at her best when dealing with personalities rather than principles. Her love of shells is undoubted, and her reasons for wanting to collect them - which are deservedly repeated on the book jacket - are put so succinctly as to deserve a cheer from any true conchologist. Mrs. Hodgson reports that guests unfamiliar with tropical shells, savouring her collection for the first time, have so often remarked that such things were enough to make one believe in God, that she has come to expect the remark. What better reason than this could there be for becoming a collector of shells?

T. E. Crowley

HELIX ASPERSA USED AS FOOD

One day about five years ago I saw two men collecting large numbers of Helix aspersa and it was their intention to boil them and sell them in the Sunderland working men's club and public houses. A few days later I mentioned this casually in a letter to Dr. Kerney and in his reply he remarked that he had not been aware that these snails were still used as food and he suggested that I should write an article for the Newsletter on this subject.

This I did and the article appeared in the March 1970 issue of the Newsletter. Little did I know what I had let myself in for!

A few days later I was in the middle of a lesson when the school secretary came to say that a reporter from the Manchester Daily Mail wished to speak to me. Now, Manchester is a long way from Sunderland and, every bit as puzzled as my goggle-eyed class, I went to the phone to find out why he should want to speak to me. He had seen my note about H. aspersa and had a long series of questions. Most of them I could answer and he seemed particularly pleased to be given the name of a club where the snails were on sale. The following morning the Daily Mail had an article headed 'Shipyard Gourmets get a taste for Snails', one of the most interesting statements being that one expert had said that snails are delicious and nutritious. They are full of protein, said the expert, and he was delighted the shipyard men had taken to them.

Shortly after this the Newcastle Journal contacted me with a similar

series of questions and their article was headed 'Northerners like a bit of helix (sic) aspersa. Snails to put it bluntly'. In this article the reporter linked our custom with Britain's entry into the Common Market and concluded with the remark, 'If we go into the EEC and food prices rise as predicted, we can always go and catch a few snails for a snail salad'.

Next came the Newcastle Sunday Sun. Their article was captioned 'Time goes by at a snail's pace' and the first sentence read 'Shipyard workers laid idle by a strike are spending their spare time catching snails'. There followed an attempt to link the strike with the snail consumption but in fact there was no connection.

The last of the newspaper articles was one printed by the local paper, the Sunderland Echo. Surprisingly it was by far the best as it gave an impartial report and the facts were given sensibly and without unnecessary comment.

Even the Times reported the fact and carried a paragraph of three lines. I would have missed it but Dr. Kerney sent me a cutting.

While all this was going on I was sent an invitation by a firm of eschargot importers to be their representative for the area.

Then came Newcastle Radio. Would I give a two minute talk on the subject? I gave a flat refusal. Well, could he come and talk to me some time? Foolishly I agreed. We had a pleasant conversation and after about an hour he suggested that I might make a tape recording of the main facts. He lulled me into a false sense of security by allowing me to think that the recording would go out only on the local Newcastle and Durham stations and as the transistor set I had in those days did not have the VHF band I did not expect to hear it. But on the following Monday morning I switched on the medium wave transmission at 7.15 to hear the news and the other items of the programme. Suddenly I was wide awake and horrified. I heard my name announced and my taped talk went out on a national network. I still cringe at the thought but the BBC were very good about it and they sent me a cheque to compensate me for my shattered nerves.

And finally the BBC Television came in on the act. They wanted me to go to their studio to tell viewers about the subject. There was, they soon realised, no hope of my accepting the invitation but they contacted the club I said might help and evidently everything went well. I missed the broadcast, unfortunately, but friends have told me that it was a winner. The BBC interviewed one of the vendors, who seemed only too pleased to appear on 'tele' and give, in the Sunderland dialect, the culinary secrets of the art of boiling and preparing the snails for sale in those places where there is a demand for them. A day or two later the BBC asked a chef how he would prepare them and he replied he would throw them out.

All this was five years ago but there are still rumblings. A few weeks ago the BBC rang me to see if there were any further developments and occasionally I hear of additional localities where snails are sold.

Perhaps I might add one method of cooking which is not generally known and which may appeal to readers who wish to prepare their own snails. One man, I am told, collects them in his garden and puts them on the top plate of his greenhouse coke heater. When the snails are roasted he extracts them from their shells and eats them immediately.

Luckily I am not scientifically minded and I do not feel that I should eat snails. I am not like those dedicated lepidopterists who feel it is their duty to taste caterpillars. Being an amateur has its compensations.

Ralph Lowe

GENERAL NOTES

A FIELD WEEK ON THE PEMBROKESHIRE COAST IN 1977

Shell Life: an introduction to molluscs of the seashore, land and freshwater -

27 July to 3rd August 1977 - tutor Dr. June Chatfield.

This field course, held at the Orielson Field Centre, Pembroke, is for anyone interested in molluscs and will be designed to help beginners as well as those with some prior knowledge of the group. Field excursions will be made to rocky, sandy and muddy shores and about two days will be given to the study of land and freshwater snails. The Orielson area on the Pembrokeshire coast provides a good range of varied sites.

Further details and bookings to the Warden, Orielson Field Centre, Pembroke, Dyfed.

CHURCHTOWN FARM FIELD STUDIES CENTRE, Lanlivery, Bodmin, Cornwall. Tel. Lostwithiel (020 887) 8148. Warden, Dr. M. J. Cotton. Field Study and linked Education/Adventure holiday course for all types of handicapped children and adults. A snail hunting group could be arranged. Write for leaflet and details.

TAYLOR'S MONOGRAPH. Can anyone help me find a set of the original wrappers of the three final parts of Taylor's Monograph? These are part 22 (1916), part 23 (1917) and part 24 (1921). The wrappers of my own set have been destroyed by a careless binder, and I am very anxious to replace them. A good price would be given. M. P. Kerney, Dept. of Geology, Imperial College, London, SW7 2BP

EXCHANGE WANTED - David Holyoak, [REDACTED], Brighton, [REDACTED], wishes to build up a collection of European land and freshwater molluscs and would like to exchange specimens with good data with any member interested. Please write.

A CEPHALOPOD NEWSLETTER. Dr. John R. Senior, University of Durham, Dept. of Extra-Mural Studies, 32 Old Elvet, Durham, DH1 3JB, is concerned about communications between workers on recent and fossil cephalopods and would like to launch a newsletter - a) to provide a complete world list of all cephalopod workers and their research interests, b) to give bibliographical details of papers as they are published, c) to provide a medium in which general information can be given, requests made and ideas voiced in an informal manner. If interested, please write giving name, title, address, research interests and other interested research workers.

PUBLICATIONS OF INTEREST

Synopses of the British Fauna - New Series, published for the Linnean Society of London by Academic Press, 24-28 Oval Road, London, N.W.1.

No. 2 'British Prosobranchs & other operculate gastropod molluscs' by Alastair Graham, vi + 114pp. Price £1.30.

No. 6 'British Land Snails' Keys and notes for the identification of the species by R. A. D. Cameron & Margaret Redfern, viii + 64pp. Price £1.90.

No. 8 'British Opisthobranch Molluscs' by T. E. Thompson & Gregory H. Brown, vi + 204pp. Price £3.50.

With soft waterproofed covers and spaces in the text for notes - very practical for field and laboratory work.

A review of No. 6 and No. 8 will appear in the Journal of Conchology in due course.

THE SOCIETY'S PUBLICATIONS

Back numbers of the Conchologists' Newsletter may be obtained from J. Collins, The Bookshop, 45 Westow Street, Upper Norwood, London, S.E.19 (telephone 01-771 9719) at 25p each plus post, or from the Hon. Secretary, Mrs. E. B. Rands who can also supply copies of the Marine Concordance, 30p to members and 50p to non-members, and can take orders for back numbers of the Journal of Conchology.

Papers for Students can be obtained from Mr. A. Norris, Natural History Dept., City Museum, Municipal Buildings, Leeds, LS1 3AA

OFFERS INVITED for three books, all first editions and in good condition. All

are illustrated with line drawings. 1) A Treatise on Zoology, Part V, Mollusca by Paul Pelseneer DSC. 355 pages, 1906. 2) Treatise on Molluscan animals by Prof. Fleming, 246 pages, 1837. 3) A Manual of the Mollusca by S. P. Woodward, 158 pages, 1857. If interested, please write to: Mr. G. S. Morrison, [REDACTED], Great Baddow, Chelmsford, Essex.

MRS. ANNE G. WILSON, [REDACTED], Muckleneuk, Pretoria 0002, South Africa, would like to exchange South African shells with a collector in Great Britain - her particular likes are Amphineura, the Patellidae and Olives, but she has little from here and is interested in a wide range of shells.

SHELLS FOR SALE. A fine selection of shells for the collector is available at Eaton's Shell Shop, 16 Manette Street, off Charing Cross Road, London, W1V 5LB (telephone: 01-437 9391).

ADVERTISEMENT: SHELLS ON STAMPS. Extend your interests to collecting these attractive items. Several extremely rare shells have been depicted on stamps. Large stock available from 1935 (Cayman Islands) to all latest issues. Also interested in buying and limited exchange. A. Grainger, [REDACTED], Horsforth, Leeds, [REDACTED].

ANTIQUARIAAT JUNK (Dr. R. Schierenberg & Sons B.V.) searches for complete or incomplete set of the Journal of Conchology. Please offer also other Conchological journals or books. Catalogues available on demand. P.O. Box 5, Lochem/Holland.

OBITUARY. Leona L. Grantier, died August 5, 1975 of lung cancer in Ottawa after an illness of two years

Mrs. B. J. (Leona L.) Grantier resided in Dhanran, Saudi Arabia from 1948 to 1961. She acquired an extensive collection of Marine Mollusca of the Persian Gulf. With the assistance of Rev. H. E. J. Biggs, F.L.S., a joint monograph, "A Preliminary List of the Marine Mollusca of Ras Tanura, Persian Gulf" was printed in the Journal of Conchology, Vol. 24, No. 11, June 1960.

NOTICE FROM MARINE RECORDER TO ALL AREA REPRESENTATIVES

A reminder that the Marine Recorder is now C. P. Palmer, 9 Upton Dene, Grange Road, Sutton, Surrey, SM2 6TA; and that annual reports should be sent in as soon as possible. Opinions and arguments concerning the current controversy on "lat. + long. versus 10km" in marine recording would also be very welcome. If you have strong views please let me know.

[REDACTED],
Atherton,
Manchester, [REDACTED]

Dear Members,

I write once again to remind you that all Annual Subscriptions for 1977 will be due on 1st. January; the rates for all types of Members are shown below. Ordinary Members and Family Members may deduct the sum of 50p (U.S. \$1.50) from the subscription if this is paid before 31st. March. Publications cannot be sent to Members whose current subscriptions are unpaid.

Some Members have still paid only £3.00 for 1976, and should forward the balance without delay. They are reminded that a new banker's order will not operate, if received by the bank after 1st. January, until the following year.

Banker's order forms, and also forms for payment of subscriptions by means of seven year covenants will be sent on request. Will any Member not already paying by covenant please consider this, as it is of great benefit to the Society.

Marjorie Fogan (Hon. Treasurer)

Ordinary Member	£5.00	(U.S. \$15.00)
Family Members	£6.00	(U.S. \$18.00)
Junior Member	£1.00	(U.S. \$ 3.00)

CHRISTMAS 1976

The Newsletter Editor sends Seasonal Greetings and Best Wishes for a Happy New Year to every reader.

THE CONCHOLOGISTS' NEWSLETTER IN 1977

I am grateful to all those contributors who have sent me material of all kinds during our Centenary Year enabling us to produce 4 large issues. It is especially helpful to me to build up a 'stock' of articles, reports, and news items for future issues, but this inevitably and understandably leads to some disappointment when people have taken trouble in preparing material and then do not see it in print for perhaps 9 or 12 months. I do hope everyone will understand and will continue to provide a flow of interesting and varied items in the coming year when, for obvious financial reasons, we must return to our 'normal' issues of about 16 pages. Black and white line drawings are always welcome. As mentioned on previous occasions, no acknowledgments are sent unless a specific enquiry has to be answered (or S.A.E. is forwarded) as it is essential to economise on the Society's heavy postage account.

Thank you all very much,

P. E. Negus, Newsletter Editor

THE LIBRARY OF THE ACADEMY OF SCIENCES of the USSR wishes to make an exchange for the 'Journal of Conchology' for some of their own publications. Anyone interested should write for a list of publications offered, to: Mrs. C.J. Pain, [REDACTED], Millbank, London, [REDACTED]. Beware - all are in Russian!

LAND AND FRESHWATER SHELLS FROM OUTSIDE BRITAIN: is any collector willing to send their surplus material? Can only offer refund of postage and packing, and/or similar British material in exchange. Brian Coles, [REDACTED], The Downs, London, [REDACTED]

BRITISH SHELL COLLECTORS CLUB: OPEN EXHIBITION: 30 APRIL 1977: The Napier Hall, Hyde Place, off Vincent Street.

Entries invited in the following classes:-

- | | |
|---|--|
| 1. One species | 10. Visual beauty of shape |
| 2. One family | 11. Visual beauty of colour |
| 3. Land or freshwater | 12. Shells from one locality |
| 4. *British shells | 13. Self collected |
| 5. Bivalves | 14. Speciality collections (monsters, ex |
| 6. *Educational exhibit (with instructional notes on use) | piscis, etc.) |
| 7. Miniatures (under 1 inch or 25mm) | 15. Shell art/craft |
| can be adults or juveniles of larger species | |
| 8. Fossil molluscs | |
| 9. **Worldwide tropical shells | |

In the classes marked * there will be additional awards specifically for junior collectors.

Special awards will be made for:- Shell of Show; Best overall Exhibit; Exhibit with best scientific content.

An entry fee of 20p per exhibit is to be charged to defray insurance, etc.. Maximum size for exhibit 2' x 4'. Entries stating size and title should be submitted by 26 February 1977 to either:-

G. D. Saunders
[REDACTED],
Gillingham,
Kent.

or

R. M. Dixon
[REDACTED],
Rainham,
Kent.

Produced by THE CONCHOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND

THE FUNCTION OF CEPHALOPOD INK

1) The traditional view.

A careless dissection of a squid, Loligo forbesi, recently resulted in the puncture of the ink-sac. The flood of black ink over the mantle cavity was accompanied by a sharp increase in the general fishy smell and initiated a train of thought leading to an alternative interpretation of the function of cephalopod ink. This hypothesis removes the emphasis from the visual qualities of the black ink and places it on its olfactory properties.

The ink cloud, discharged by a threatened cephalopod, has traditionally been interpreted as functioning in the manner of a smoke-screen, behind which the animal is supposed to make its escape. The analogy with naval fighting ships reflects our own human reliance on visual perception, a process depending upon complex mental interpretations of visual images. Lane (1957, p.41) has already suggested that this may be an over simplification of the matter.

In the animal kingdom the primary significance of visual perception is not usual, and "out of sight" is usually, literally, "out of mind". With the obvious exception of primates, bats, and cetaceans, the majority of predators pursue their prey by following a chemical trail either on the ground, in the air, or in water. This, so long as it remains unbroken, provides a constant stimulus for pursuit. Some fish have a tactile response to vibrations which guide their pursuit of prey, nevertheless, scent still plays a prominent role in hunting and this is particularly true of sharks.

Many accounts exist of threatened cephalopods retreating rapidly and leaving a prominent black cloud between them and their pursuers. But the size of the ink-cloud alone is seldom enough to conceal the cephalopod or to baffle a serious predator since the velocity of pursuit would carry the predator right through the ink-cloud and bring the retreating cephalopod once again into view. Nevertheless, the ink cloud does serve as a check to predators and millions of years of selection have maintained a functioning ink-sac in coleoid cephalopods - confirming its utility.

Cousteau (1953, p.166) suggested that the ink-cloud simulates the outline of the retreating cephalopod and thereby acts as a visual decoy. But this again reflects our own habits of primary visual perception. I suggest that the true function of the ink is not a screen to cover retreat but a chemical decoy to delay, or prevent, pursuit. This hypothesis is supported by the following evidence.

2) The evidence.

MacGinitie (1949, p. 393) records how he once prodded a moray eel in a tank with a long pipette and then sucked up some of the water from alongside its body. Squirting the water into the tank of an octopus resulted in rapid colour changes, temporary protuberances on the mantle, and other signs of alarm; but only when he simulated, with his arm, the undulating motion of an eel did the octopus discharge its ink. A combination of stimulæ to both smell and sight being necessary to induce the full response. Lane (1957, p.41) remarked that "A trace of octopus ink in water is sufficient to excite an eel. If a few drops are introduced into a moray's tank the eel dashes wildly about seeking its ancient prey. The American biologist, Denis L. Fox, tells me that he once offered to a moray eel a mussel (Mytilus californianus) which had been removed from its shell. The eel refused it. Fox then dipped the morsel in some octopus ink and offered it to the eel again. This time it was devoured avidly".

Lane (loc.cit., p.42) continues by quoting Gilbert Klingel who disturbed an octopus while skin-diving off Great Inagua, off the Bahamas, and was enveloped in a cloud of ink. "From beneath the helmet there arose a faint odour quite unlike anything else. Fishy musk is the nearest description I can think of".

Again the MacGinities (Lane 1957, p.42) showed that the concentrated ink discharge from a mud-flat octopus could actually confuse a moray eel so that it was unable to recognise the scent of the octopus even when very close to it; though small concentrations of ink are enough to excite an eel. Lane (p.43) goes on to suggest that the ink, in strong concentrations, actually paralyses the olfactory senses of the moray eel.

These accounts serve to emphasise the strong olfactory properties of cephalopod ink and its function may be demonstrated in the following hypothetical situation.

3) An alternative view.

We may conjecture how the predator of a cephalopod might catch its scent and move in pursuit. Sight of the prey, coupled with the scent, then stimulates rapid pursuit. The cephalopod emits a cloud of ink and jets away leaving the ink-cloud hanging, an apparently tangible object, in the water. When the predator reaches the ink-cloud it receives the strongest possible olfactory indication of the apparent immediate presence of the cephalopod which, by now, is many yards away. Any visual apprehension which the predator may have of the retreating cephalopod would be completely overruled by the powerful olfactory indication of the cephalopod's presence in the ink-cloud. The cephalopod, even if sighted, would by now have changed its colour and pattern and, most probably, have turned whitish-grey in dimantic display.

Since visual perception has not been ruled out as insignificant the black colour of the ink-cloud probably serves as a focus of visual attention, in that it provides something to be seen, while the scent holds the predator as surely as the scent of rotting meat holds flies, ants, and whelks. The black colour thus serves as an ancillary to the primary olfactory function of a decoy.

This interpretation is offered as an alternative to the long-held view that cephalopod ink serves as a visual screen to cover retreat. Such a view, with its emphasis on the optical properties of the black ink-cloud, ignores its chemical ones and may well be wrong.

REFERENCES.

- | | |
|--|---|
| Cousteau, Jacques-Yves, 1953. | The Silent World. London: Hamish Hamilton (1954 edition by Reprint Society Ltd.) |
| Lane, Frank W., 1957. | The Kingdom of the Octopus - The Life-History of the Cephalopoda. Jarrolds: London. |
| Klingel, Gilbert C., 1942. | Inagua. London: Robert Hale. |
| MacGinitie, G.E. & MacGinitie, Nettie, 1949. | Natural History of Marine Animals. New York: McGraw-Hill. |

C. P. Palmer

IN PRAISE OF CONCHOLOGY

by Rev. Henry H. Higgins (1814-1893)

(Extract from Notes by a field naturalist in the Western Tropics, 1877,
Howell, Liverpool. 186 - 187)

"Conchology has a history of its own, pertaining to art, or at all events to aesthetics, rather than to natural science. The older conchologists made no pretensions to be scientific naturalists; the conchologist was a connoisseur of shells; and it was for qualities proper to art that he valued his choice specimens. Finish, gracefulness of outline, texture, beauty of colour, rarity, - these are points equally prized in works of art, and in shells. The conchological passion was at its height, probably, from twenty to fifty years ago; but more recently so much has been said in disparagement of mere shell-fanciers that the very term conchologist has suffered discredit; and now even dealers are shy of it.

I cannot help a feeling of regret that a delight in the beauty of any class of natural objects should receive discouragement. If the pursuit of conchology had been so fortunate as to include a popular littérateur, he might have filled volumes with pleasant anecdotes of social gatherings, and noted sales, of well-filled cabinets and table-talk, all connected with the love of shells. Surely a shell is as fit to be admired as a tea-cup of Dresden ware. Butterflies and shells have been the very "cakes and ale" of natural history; but the biologists of the present day are a matter-of-fact generation, who cannot sympathise with a love for a thing simply because it is pretty. The change of tone has not, I think, been all clear gain; and scientists may be reminded that Geology would have had far less help from Palaeontology had it not been for the patient loving study attracted to conchology by the beauty of shells. Shell-fanciers have been as useful to Sir Charles Lyell, as pigeon-fanciers to Mr. Darwin."

These thoughts on conchology by Rev. Higgins were prompted by a visit he made, 8th. May 1876, to the Museum of the Academy of Science, Philadelphia, on his return from a voyage to the Carribean aboard the steamyacht 'Argo'.

The Rev. Henry H. Higgins was President of the Liverpool Naturalists Field Club and the Microscopical Society of Liverpool, but, it was in his capacity as member and nominee of the Committee of the Free Public Museum Liverpool that he joined the Royal Mersey Steam Yacht 'Argo' chartered by Reginald Chalmondsley Esq., Candover Hall, Salop. Chalmondsley financed this expedition in order to "enrich his already extensive and well stocked aviary", while the invertebrate specimens collected by Higgins and his two assistants were placed "at the disposal of the Museum".

Unfortunately, of the large number of specimens collected (e.g. "Mollusca, Fishes, Crustacea, Echinoderms, Corals, Insects, Annelides, Polyzoa, Hydrozoa, Algae, Mosses, Hepaticae and Fungi... and Sponges") only the sponges, molluscs and mosses remain in any number at Liverpool (now Merseyside County) Museums. These include some important, figured and type specimens which I am in the process of documenting.

Peter Lingwood, Merseyside County Museums

THE JOINT CENTENARY SYMPOSIUM - AN IMPRESSION

A Presidential Chair is not always a good place from which to gauge what those attending a meeting think about it: whether for instance, they enjoyed themselves and found the proceedings useful. This, at least, was my perfectly good reason for not writing these notes on the Northampton Symposium - a reason which the Council rather abruptly dismissed: probably nobody else wanted the job. So I find myself instructed to put on record what occurred, as best I may.

We have for many years been fortunate in that a few of our members are also members of the Northamptonshire Natural History Society, and co-operation between the two organisations is no new thing. The N.N.H.S., which is about five months or so older than the 'Concs', is a fortunate and well-organised body of a constitution as far-sighted as it is unusual. It includes a great many activities which in other cities have their own small clubs or societies; in Northampton they come as sections under a large organisation having its own excellently appointed lecture hall with cloakrooms, kitchen for tea-making, library, a range of small laboratories with darkroom, storage space and equipment. One may join a section of this Society and automatically becomes entitled to the privileges of the whole. There is a lively conchological section and others, in addition to those which might be expected, include archaeology, astronomy, meteorology, microscopy and Saturday walks.

Our instructions were to arrive at the Humfrey Rooms, Northampton, between nine and eleven on Saturday 16th. October last, and our first pleasant surprise was to find an enormous half-empty car park nearby where vehicles might be left all day for a small sum. We were welcomed into the Humfrey Rooms by efficient receptionists and presented with a packet of literature which included programme, menus, full details of both societies, a list of delegates and other interesting matter which we had little time to read because cups of coffee were being offered, there was an absorbing series of exhibits to be inspected and of course, the permanent collections and library. Conchological Society members were duly envious of such

attractive permanent headquarters.

At 11.00 a.m. the meeting was called to order, with a few words of welcome, by Sir Hereward Wake, knowledgeable President of the Northamptonshire Society, who introduced the Chairman for the morning session, Mr. Tom Pain. The first speaker was Mr. Adrian Norris - a citizen of Leeds and well versed in the history of the Conchological Society, who better to tell the story of its founder members, the four men of Leeds who served it so well for so long? Coloured slides showed places, remaining still, that knew them well a century ago. Then came Dr. Adrian Rundle on the Environment of Lower London Tertiary Mollusca, words of encouragement to the Home Counties geologist who wishes to try his luck; and Mr. Gordon Osborn on Foraminifera, with reference to those of the Lower Lias, showing us the miraculous complexity of the single-celled organisms which oil-prospecting has made so popular.

Lunch followed - a cold buffet of most attractive variety, with tea and coffee prepared by the Northampton ladies, and the delegates turned greatly refreshed to the afternoon session under the guidance of Mr. R. A. Martin. First we heard Mr. P. Lingwood on the Shapes of Shell Fragments, specifically discussing the effect of shell morphology on the fracturing of shells and the nature of the holes bored in them by carnivorous gastropods. Then came Dr. C. R. C. Paul on the Ecology of Mollusca in Hayley Wood. A typical woodland area had been selected for study and was found to present more curious problems of distribution than can yet be solved. Dr. June Chatfield gave us an introduction to the internal anatomy of slugs and snails, achieving wonders in the simple explanation of a complex subject, and providing a beautifully mounted exhibit of a dissected Helix to demonstrate her remarks.

Tea followed and it was apparently not only the speakers who had dry throats. The third session, chaired by Mrs. V. Blackburn, gave us Mr. R. A. Martin on Some Early Geological Ideas, detailing in a fascinating way the wild but rather natural explanations of the Earth's structure argued about by the philosophers of pre-Victorian times. Following him we had Dr. M. P. Kerney on the mapping of Britain's non-marine Mollusca, principally explaining the compilation and use of the new Atlas, the production of which the speaker may justly regard with pride.

This brought the time to five o'clock after which a two-hour break was provided, giving opportunity for those visitors staying with Northampton members to go home with them for acquaintanceship and a short rest; those who felt it appropriate changed into long dresses. Our own hosts, Mr. and Mrs. Blackburn, made us welcome in charming fashion, in a captivating house full of telescopes and large, peaceful dogs.

Seven o'clock found us back in the Humfrey Rooms which had been miraculously transformed. Gone were the rows of chairs and in their place was a number of tables each seating a small group. Incredibly, the Northamptonshire Society had decided to provide the dinner without recourse to caterer, or even kitchen; hors d'oeuvres were on each table, and presiding at the carving of magnificent joints of cold beef was Mr. Gordon Osborn, organiser of the whole symposium, member of both Societies, and still working. The details of the day's events had occupied much of his time for many weeks past and brought many an anxious moment, but all had gone to perfection and he thoroughly deserved all the congratulations showered upon him. The Societies themselves were also the receivers of many letters of congratulation, be it recorded, some of which were read out, to those present, one from H.M. the Queen being especially appreciated.

After dessert, cheese and coffee, the symposium was officially terminated with a few soporific words from the President of the Conchological Society, and the sixty or so delegates, the tables having once more been removed, settled to enjoy an underwater film most kindly lent by Jacques Cousteau, showing among many other things, some shots of the Nautilus to provide a molluscan flavour, and a few more of our erstwhile member Dr. Anna Bidder, foremost expert on the genus. There had been a degree of trouble attending on the film because, although lent free, it had been sent across the Atlantic by some unthinking individual in the most expensive possible way, arriving with a carriage charge of nearly £200. With an unsubsidised Society such as ours this kind of expense cannot be met, so by way of helping to lead us out of the trap into which we had fallen, Mrs. Pain had during the intervals, been presiding over a bring-and-buy sale of natural and other objects, and books, donated by members. In the upshot, on the representation of Mr. A. P. H. Oliver the following week, the Shell Company most generously agreed to pick up the bill for us.

It was rather late when we left the Humfrey Rooms, most of us with our hosts for the night, but it can be assumed that in many cases the talk went on for quite a while longer. The proceedings had a rather delightful termination next day at Courteen Hall, residence of Sir Hereward and Lady Wake, where delegates were treated to a thoroughly enjoyable walk round the house and grounds and were able to admire some of the very fine trees for which the Estate is noted.

T. E. Crowley

SACOGLOSSAN NOTES 4

REVIEW: Last year our Society had a successful time collecting sacoglossans. Many new records were reported for Limapontia depressa and Alderia modesta including those by J. Chatfield, C. T. Hayton, E. Platts, I. F. Smith and Dr. Llewellyn-Jones and her son, John. I. F. Smith recorded Limapontia cocksi and Hermaea bifida for Orkney, Scotland. J. B. Sigurdsson discovered Calliopaea oophaga, a species new to the British fauna.

This year we hope to find Stiliger niger, another species which would be a first record for Britain. Look for it on a sheltered shore about one or two feet beyond the edge of a good spring tide, where green algae grow. It is about 6mm long, has a pair of rhinophores and many cerata. Additional localities for C. oophaga would be very welcome and should you be fortunate enough to find the strikingly coloured Hermaea variopicta please inform T. E. Thompson.

PENIAL STYLES.

All sacoglossans are hermaphrodites; eggs and sperm are produced alongside one another in follicles of the ovotestis. The female system is complicated but the male system is simple. Sperm travel from the follicles along the hermaphrodite duct and are stored temporarily in a wide, coiled section, the ampulla. This is continued by a narrow section that leads into the vas deferens. The prostate duct enters near the beginning of the vas deferens which then proceeds on an undulating course and finally enters the penis. The penis is firmly attached on to the inner side of the body wall just posterior to the right eye and is extruded during copulation through the male opening which lies laterally near the base of the right rhinophore.

In many species the vas deferens is continued beyond the tip of the penis by a hollow cuticular style. Styles can be used in one of two ways: either to facilitate the delivery of sperm during copulation, or to inject sperm through the body wall into a vaginal ampulla (bursa copulatrix). Species that practise hypodermic impregnation do not have a vaginal opening.

Calliopaea bellula has a remarkable style (A - fig. 1 on next page) which is the key mark of the genus. It is very long (400-600µm) and whip-like; the first half is of diameter 8µm and the second half tapers down to 2µm. The smaller drawing shows the opening at the end of the style. The vagina is lengthened by a long loop in order to accommodate the style during copulation. Calliopaea oophaga has a style of similar shape and dimensions.

The style of Limapontia depressa (B) is unmistakable - it looks somewhat like a teapot spout with an irregular, elongated opening. The opening is of length 70µm and the diameter of the shaft is 30µm. Two or three spines of length 4-6µm are present on the curve below the opening. (The number of spines can vary; a specimen collected by I. F. Smith from Waulking Saltings, Orkney, had ten spines!) The vagina opens to the exterior and the spines may retain the style in position during copulation. Limapontia capitata has a simple, curved style (C) of length 70µm and diameter 10µm; it is used as a hypodermic needle to inject sperm into the bursa copulatrix which abuts on to the body wall. L. cocksi has a style similar in size, shape, and function to that of L. capitata.

The style of Alderia modesta (D) is distinctive of the species. It is 130µm long and of diameter 10µm. Along the inner side of the curve is a row of some 40 spines of average length 4µm. Apparently A. modesta injects sperm at any point on the dorsal surface of the partner's body. How the sperm reach their ultimate destination - the partner's eggs - is not known. Placida dendritica has a short style (E) of length 40µm, diameter 8µm; that of Stiliger niger is similar, but longer (60µm).

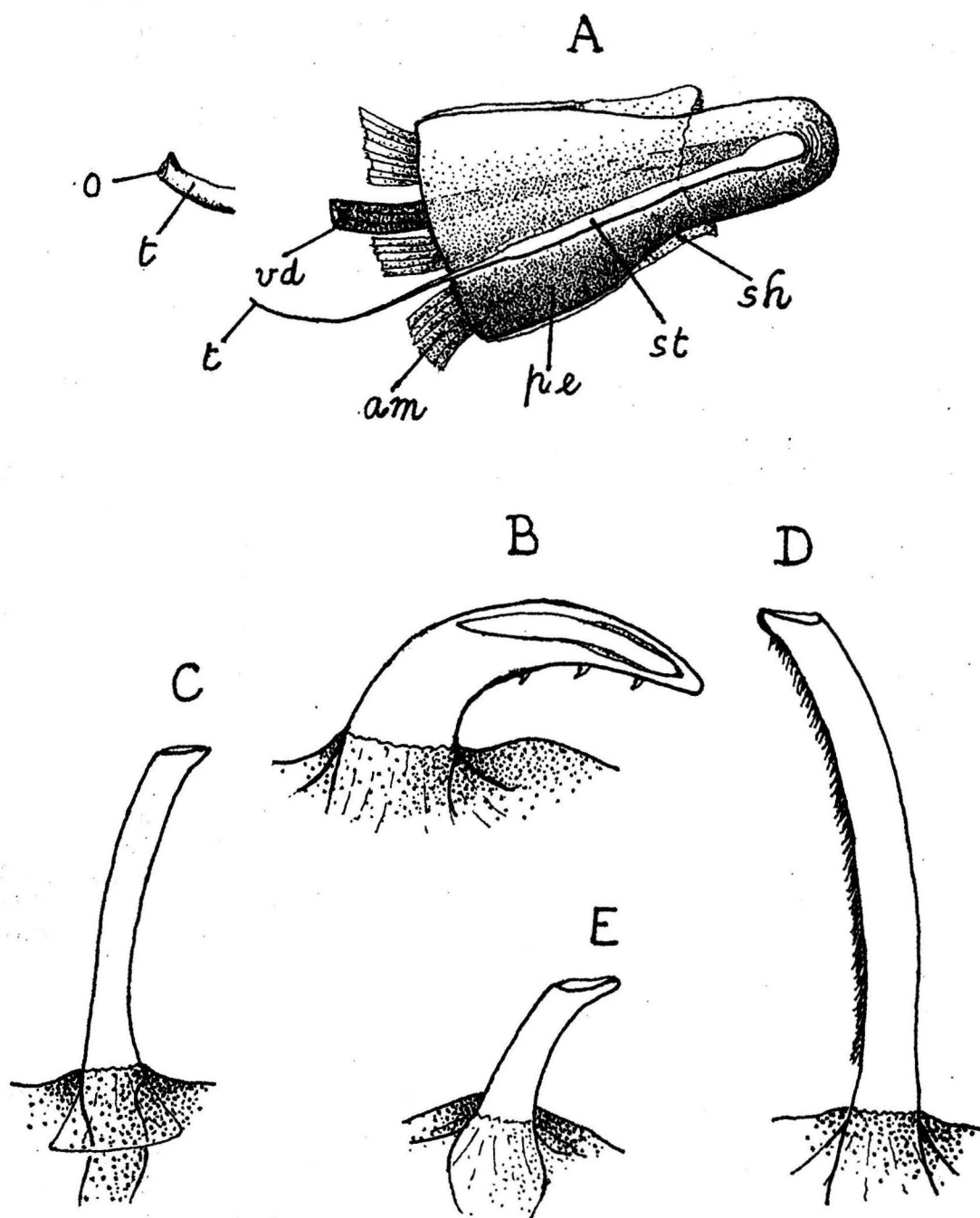


Fig. 1. Penial styles of British Sacoglossa

A, Calliopaea bellula and C. oophaga; B, Limapontia depressa; C, Limapontia capitata and L. cocksi; D, Alderia modesta; E, Placida dendritica. The styles are not drawn to scale, but their dimensions are given in the text. Hermaea bifida, H. variopicta and Elysia viridis do not possess penial styles.
am, attachment muscle; o, opening; pe, penis; sh, penial sheath; st, style; t, tip of style; vd, vas deferens.

Of course, the length of a style varies with the size of the animal. For example a 2mm long Alderia modesta (collected from Strangford Lough, N. Ireland by E. Platts) had a style of length 110µm, and a 12mm animal (collected from Canning Marsh, Nova Scotia, Canada by J. S. Bleakney) had a style 170µm long. For British sacoglossans of average size, except those of the genus Calliopaea, the difference in the length of style for a given species is probably not more than $\pm 10\mu\text{m}$. Penial styles can be an aid to identification. Limapontia depressa is sometimes difficult to distinguish from L. capitata, but if their styles are compared there can be no doubt whatsoever. Small specimens of Hermaea bifida might be mistaken for Placida dendritica, but the former has a penis without a style (i.e. unarmed) while the latter has a penis armed with a short style.

Please do not examine a style by serial sections; bits may be lost, especially

the tip which is sometimes characteristic of the species. A simpler and better method is to remove the top of the penis with style and mount it in Berlese's fluid or 50% glycerin. The dissection is tricky but not difficult, and I am willing to demonstrate this by arrangement for any member who is interested. My address is: 14 York Grove, Peckham, London, S.E.15. If a visit is inconvenient a few simple directions may help. Pin the animal dorsal side uppermost and open along the median line. Dissect from the region of the right eye and find the penis. Remove the penial sheath and locate the style. With forceps grasp the penis and cut it free from the body wall. Place it in a drop of 50% glycerin on a slide. Now remove the base of the penis and arrange the tip so that the style is well displayed. Add a drop of Berlese's fluid (clearing agent) and warm the slide to about 60°C; this increases the viscosity of the fluid and the style will remain in position whilst the coverglass is lowered.

Tom Gascoigne

MOLLUSC RECORDING IN THE MORAY FIRTH (CENSUS AREA S5)

General Introduction - Geography.

Census area S5 can be divided into two distinct regions i) the Moray Firth proper, which is a large inlet of the North Sea, and ii) that area of the North Sea to the east of a line joining Duncansby Head and Rattray Head. The offshore region is a fairly extensive area of deep water, generally more than 100m, with a bottom of fine sands and muds. The Moray Firth proper is an area of rather variable bottom contours ranging from the deep water of the South Deep to the relatively shallow waters of Smith Bank. The substrates of this area show considerable variation from the muds characteristic of deep water to the sands, gravel and rocks which compose the shallow banks.

The coastal area of the Moray Firth also shows considerable variety from the rocky cliffs and bays of the outer regions of the Firth, around Banff and Wick to the sandy bays of the inner Moray Firth, finally giving way to the extensive estuarine areas of the Beaully, Cromarty and Dornoch Firths.

Because of its geographic position, immediately to the south and east of the major sites of inflow of Atlantic water into the North Sea, this area has considerable interest biologically. From other fields of marine research, e.g. plankton studies, it would appear that this is an area where major water mixing takes place characterised by the presence of species such as the copepod Metridia lucens and the pteropods Spiratella retroversa and Clione limacina. With regard to the declining influence of Atlantic water throughout the area it is probable that the mollusc fauna of the area will show a decline in variability, compared with the areas further west, due to the disappearance of the more southerly species.

Apart from its inherent biological interest, this area has added importance because of the amount of coastal development associated with the exploitation of North Sea oil. This development has already affected areas such as the Cromarty Firth and Peterhead and it is essential that species lists for areas with high 'development potential' should be compiled as soon as possible as a base-line for measuring the future effects of such development.

Introduction.

In this report the records of molluscs from the area will be considered in two parts, the first dealing with those records that can be handled within the 10 km. square system widely used for terrestrial recording, i.e. the coastal records, and the second dealing with those offshore records for which no unified recording system has yet been proposed. These offshore records have therefore been collated by statistical rectangles, rectangles one degree of longitude by half a degree of latitude, which have been widely used in the past by fishery biologists. The choice of this system was largely due to the large number of records from the 1920's and 30's which were only available in this form. Wherever possible all records have been accurately positioned and can be easily converted into any alternative system which may be agreed upon.

Coastal Recording.

The list of species recorded from coastal areas of census area S5 is given in Table 1, and the distribution of all records and A records on a 10 km. square basis in Figure 1. From Table 1 it can be seen that some 205 species have been recorded from CA S5 and that some 138 of these have been recorded in some category or other since 1950. Closer examination of this list would indicate that the gap between the two figures is due to recent recording of certain groups being rather poor. These are the small gastropods in general, both prosobranchs and opisthobranchs, and the nudibranchs, which, although apparently well represented on the list, have been recorded from only a small number of squares. It is easy to understand why these groups are so poorly represented as they are a) difficult to collect and b) those that are collected are rather difficult to identify. The latter problem applies particularly to the nudibranchs for which comprehensive identification references are few and far between, and the checking of specimens is rather difficult. The other obvious shortcoming of the list of species is the number of B records for the lamellibranchs, due undoubtedly to their ease of collection on the beach and the distinct lack of collection in the shallow sublittoral areas.

Although the list of species in Table 1 is apparently satisfactory, the distribution of the 10 km. recording shown in Fig. 1 definitely is not, only one square has over 100 records, the majority of which unfortunately date from the 19th. century and in recent records only two squares have over 50 A records. The picture, although unsatisfactory, is a rapidly improving one and many of the large gaps obvious a couple of years ago have been plugged to some extent, if only by the recording of common species. It should, however, be noted that a species list of 50-100 post 1950 records should be aimed at for those squares with fairly diverse habitats. That this is possible was amply demonstrated by square 48/06 where 50 species were recorded in one day's intensive collecting.

Offshore Recording.

Whereas the progress in coastal recording has been steady if unspectacular, the situation with regard to offshore areas has been practically stagnant with most records dating from the 1900-1950 period, with the notable exception of B 15 (fig. 2) where extensive grab surveys were carried out by the Marine Laboratory, Aberdeen (McIntyre 1958). This one well-recorded area gives the species list for the offshore area (Table 2) a much healthier appearance than the situation over the whole area would merit. A total of 179 species has been recorded from offshore areas but only 74 have been recorded since 1950. In addition to the lack of recording effort post 1950 in the offshore area, most of the 1900-1950 records have little or no precise information on position but are solely given on a statistical rectangle basis. Much of these data were published by Stephen (1933) but so far efforts to improve their quality by consulting the original sample information has been unsuccessful. In Fig. 2 the positions of all the offshore records for which accurate data are available have been plotted and this shows a general lack of records for the area as a whole and particularly the more distant parts of the area.

Special Projects.

No special projects have taken place in the recent past, although an intensive effort has been and is still being made to cover as many as possible of the coastal 10 km. squares; in this Mr. Meiklejohn of Thurso has provided valuable information for the north coast of the Moray Firth. In the near future it is hoped that at least common species will be recorded from all the previously unrecorded squares.

In addition to the coastal recording it is hoped to launch a determined effort to obtain records from offshore areas. With this in mind, renewed contacts are being made with the Marine Laboratory, Aberdeen and attempts will be made to arrange collecting trips on some of the areas' fishing vessels. It is to be hoped that a further stimulus, similar to that given to coastal recording by the introduction of 10 km. square recording, will be given to offshore recording by the speedy decision on a unit for offshore recording, so giving the whole recording scheme a unity at present lacking. To this end the Marine Recorder should be encouraged to convene a meeting of area representatives and other interested parties to discuss the various problems of offshore recording.

With regard to the earlier remarks made on the impact of oil developments, it is hoped that recording of these sensitive sites will go on apace and that in the planning of Society field meetings these urgent recording needs, in areas remote

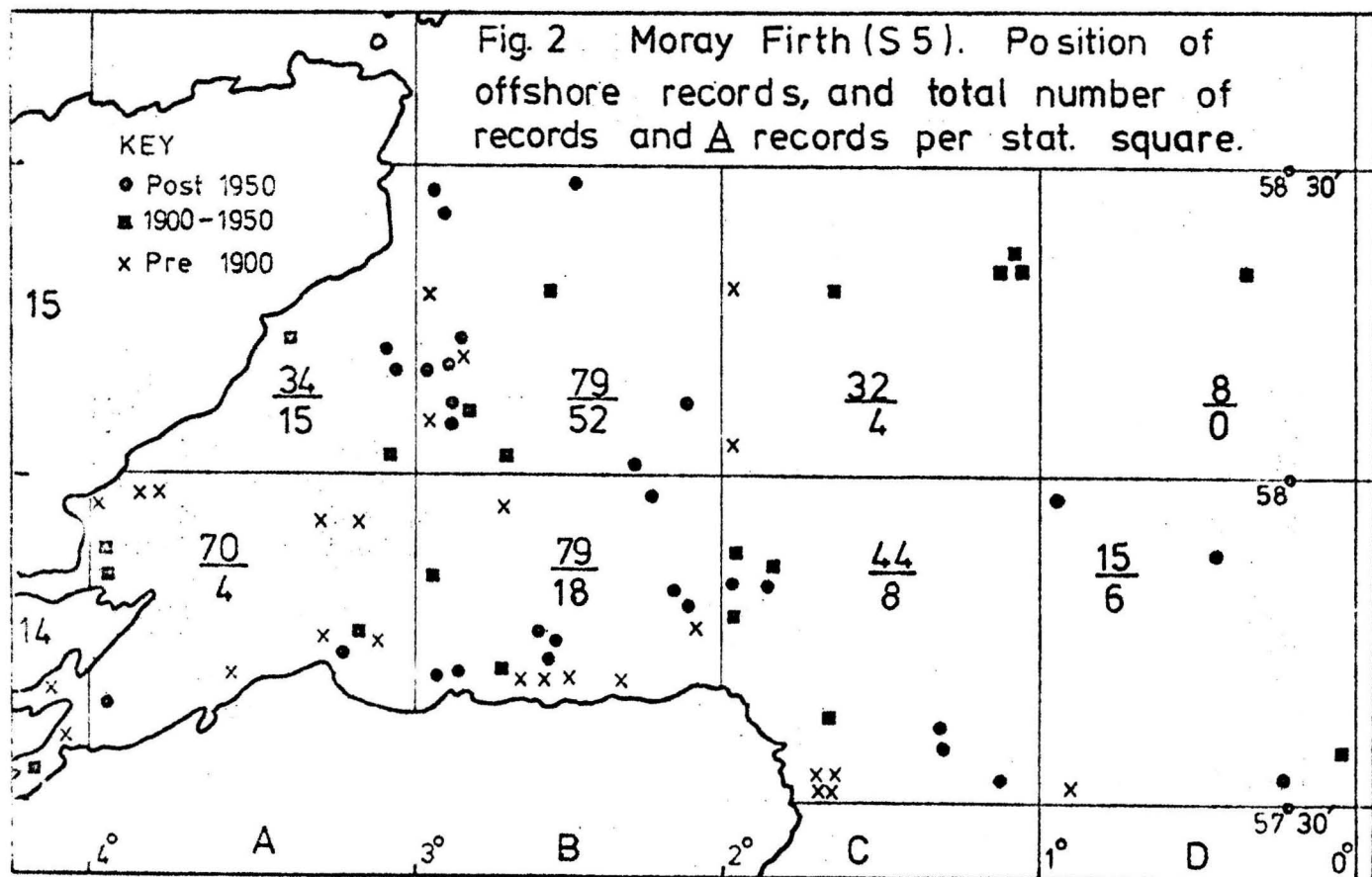
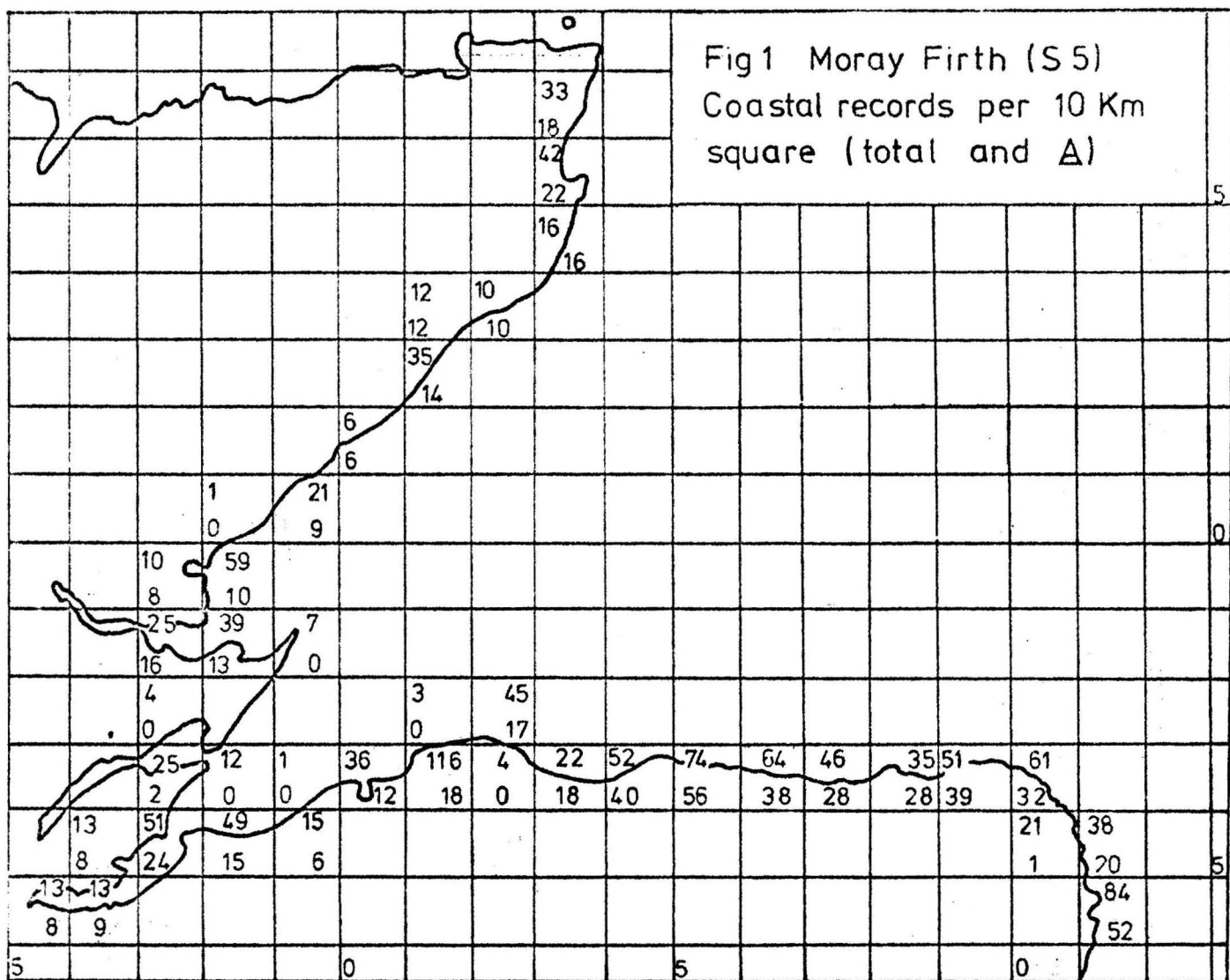


TABLE 1

MASTER LIST FOR COASTAL 10 KM. SQUARES OF
MARINE CENSUS AREA MORAY FIRTH (NO. S5)

HABITAT: Shore, strandline and inshore areas

RECORDER'S NAME: D.W. McKay.

DATE: October, 1975.

LORICATA

- 101 Acanthochiton criA
 401 Ischnochiton albu a
 501 Lepidochitona cinA
 601 Lepidopleurus aseA
 701 Tonicella marmoreA

PROSOBRANCHIA

- 201 Acmaea testudinalA
 202 virgineaA
 302 Alvania beanii ag b
 306 crassa a
 309 puncturaB
 311 zetlandica b
 801 Balcis alba b
 1101 Bittium reticulat b
 1202 Buccinum undat agA
 1301 Caecum glabrum b
 1403 Calliostoma zizypA
 1601 Cantharidus clela b
 1701 Capulus ungaricusB
 2602 Cingula cingillus b
 2606 semicostataA
 2607 semistriata a
 2608 vitrea b
 3002 Colus gracilisC
 3003 howseiC
 3301 Diodora apertura b
 3403 Emarginula reticuB
 3703 Eulima trifasciat b
 4001 Gibbula cinerariaA
 4004 tumida b
 4402 Hydrobia ulvaeA
 4602 Lacuna pallidulaA
 4603 parvaA
 4604 vinctaA
 4702 Lamellaria perspiA
 5002 Littorina littoraA
 5003 littoreaA
 5004 neritoidesA
 5005 saxatilis agga
 5102 Lora trevelliiana b
 5205 Mangelia nebula b
 5301 Margarites groenl b
 5302 helicinusa
 5501 Nassarius incrassaA
 5601 Natica alderiaA
 5602 catenaA
 5604 montagui b
 5701 Neptunea antiquaB
 5801 Nucella lapillusA
 6203 Patella vulgataA
 6301 Patina pellucidaA
 6604 Philbertia linearB
 6701 Potamopyrgus jenka
 7305 Rissoa membran ag b
 7306 parva agga
 7704 Skenea serpuloides b
 7801 Skeneopsis planora
 8201 Trichotropis bore b

- 8401 Triphora perversa b
 8501 Trivia arcticaA
 8502 monachaA
 8603 Trophon truncatus b
 8901 Turritella communB
 9201 Velutina plicatilis b
 9202 velutina a

OPISTHOBRANCHIA

- 101 Acanthodoris pilosaA
 201 Acteon tornat aggaB
 301 Acteonia senestra a
 501 Aegires punctilucA
 601 Aeolidia papillosaA
 801 Akera bullata aggaB
 1101 Ancula cristataA
 1203 Aplysia punctataA
 1401 Archidoris pseudoA
 1801 Cadlina laevisA
 2202 Chrysallida decus b
 2205 indistincta b
 2206 obtusa b
 2207 spiralisaA
 2603 Coryphella pedata a
 2606 verrucosaA
 2904 Cuthona nanaA
 3201 Dendronotu frondo a
 3403 Diaphana minuta a
 3702 Doto coronataA
 3704 fragilis a
 4002 Eubranchius exiguuA
 4005 tricolor a
 4105 Eulimella nitidis b
 4202 Facelina auri aggaA
 4301 Favorinus branchi a
 4602 Goniodoris nodosaA
 5301 Jorunna tomentosaA
 5501 Limacia clavigeraA
 5601 Limapontia capitaA
 5803 Menestho divisa b
 6005 Odostomia eulimoiaA
 6007 nivosa b
 6012 scalarisaA
 6014 turritaA
 6016 unidentataA
 6201 Onchidoris depres a
 6202 fuscaA
 6205 muricataA
 6207 pusilla a
 6305 Philine punctata a
 6701 Polycera dubia a
 6704 notha a
 6705 quadrilineata a
 7102 Retusa obtusaB
 7104 truncatulaB
 8403 Trinchesia foliataA
 8406 viridis a
 8504 Tritonia plebeia a
 8609 Turbonilla rufescB

PULMONATA

- 401 Phytia myosot aggaA

SCAPHOPODA

- 201 Dentalium ent agga b

LAMELLIBRANCHIA

- 101 Abra albaB
 104 prismatica A
 202 Acanthocardia echB
 501 Anomia ehippiumA
 701 Arctica islandicaB
 802 Astarte ellipticaB
 803 montagui a
 804 sulcata agga b
 1001 Barnea candida c
 1301 Cardium edule aggaA
 1401 Chlamys distortaA
 1406 opercularisB
 1411 varia aggaA
 1501 Cochlodesma praetaA
 1601 Corbula gibbaC
 1801 Crenella decussataA
 2001 Cultellus pellucidaA
 2502 Donax vittatusA
 2601 Dosinia exoletaB
 2602 lupinusA
 2701 Ensis arcuatusB
 2702 ensisB
 2705 siliquaA
 3001 Erycina nitidaB
 3101 Gafrarium minimumC
 3303 Gari fervensB
 3304 tellinellaB
 3701 Glycymeris glycymeris b
 3801 Heteranomia squalaA
 3901 Hiatella arcticaA
 3903 striataA
 4201 Kellia suborb aggaA
 4301 Laevicardium crasB
 4401 Lasaea rubraA
 5001 Lucinoma borealisB
 5102 Lutraria lutrariaB
 5301 Macoma balthi aggaA
 5401 Mactra corallinaA
 5704 Modiolus modiolusA
 5801 Monia patelliformA
 5802 squama aggaA
 5901 Montacuta ferrugi b
 6001 Musculus costulataA
 6002 discorsA
 6003 marmoratusC
 6004 niger b
 6101 Mya arenariaA
 6102 truncataB
 6201 Myrtea spinifera b
 6301 Mysella biden aggaB
 6401 Mysia undataC
 6501 Mytilus edulis agga

6702	<u>Nucula</u>	<u>nucleusB</u>	9009	<u>tenuisa</u>	9901	<u>Zirfaea</u>	<u>crispataA</u>
6703		<u>sulcataB</u>	9202	<u>Thracia</u>			
6705		<u>turgida</u>	9203	<u>phaseolina</u>		<u>CEPHALOPODA</u>	
6801	<u>Nuculana</u>	<u>minuta</u>	9205	<u>villosiuscula</u>	102	<u>Alloteuthis</u>	<u>subal</u>
6901	<u>Ostrea</u>	<u>edulis</u>	9304	<u>Thyasira</u>	401	<u>Eledone</u>	<u>cirrhusaA</u>
7201	<u>Pecten</u>	<u>maximusC</u>	9401	<u>Turtonia</u>	601	<u>Loligo</u>	<u>forbesii</u>
8401	<u>Saxicavella</u>	<u>jeffre</u>	9502	<u>Venerupis</u>	801	<u>Ommastrephes</u>	<u>caro</u>
8501	<u>Scrobicularia</u>	<u>plaB</u>	9503	<u>pullastraA</u>	902	<u>Rossia</u>	<u>macrosomaA</u>
8901	<u>Spisula</u>	<u>ellipticaB</u>	9504	<u>rhomboidesC</u>	1001	<u>Sagittatus</u>	<u>sagitt</u>
8902		<u>solidaA</u>	9505	<u>saxatilisB</u>	1102	<u>Sepia</u>	<u>officin</u>
8903		<u>subtruncataA</u>	9601	<u>Venus</u>	1202	<u>Sepietta</u>	<u>oweniana</u>
9003	<u>Tellina</u>	<u>crassa</u>	9602	<u>fasciata</u>	1302	<u>Sepiola</u>	<u>atlantica</u>
9005		<u>fabulaA</u>	9603	<u>ovataB</u>			
9006		<u>pygmaeaA</u>	9604	<u>striatulaA</u>			

from the major concentrations of recorders, be borne in mind.

In considering areas of special interest, it would appear that most coastal areas will yield relatively similar numbers of species so that the ones of special interest will be those for which data are available from earlier periods. In census area S5 one of the few areas for which such detailed data are available is Burghead where Gordon (1854) compiled an extensive list of species in the 1850s.

Upgraded Records.

As might be expected for an area which was extensively recorded during the 19th. century there have been no new species recorded for area S5 in the last year. During this period 22 species records have been upgraded, and of these 17 species, namely Ischnochitona albus, Alvania punctura, Potomopygrus jenkinsi, Phytia myosotis, Aegires punctiluscens, Cuthona nana, Doto coronata, Limapontia capitata, Odostomia eulimoides, Odostomia turrita, Trinchesia foliata, Cardium ovale, Chlamys distorta, Gafrarium minimum, Ostrea edulis, Venus casina, and Zirfaea crispata, are now A records.

Reference List.

- | | |
|-----------------------------------|---|
| Dawson, R. (1870) | A catalogue of the Mollusca of the Counties of Aberdeen, Banff and Moray, and in the neighbouring seas. A paper presented to the Aberdeen Natural History Society. |
| Fulton, T.W. (1893) | Report on the trawling experiments of the 'Garland' and on the Statistics of the East Coast Fisheries relating thereto. 12th. Annual report of the Fishery Board of Scotland, 1893, Part 3, 23-164. |
| " (1894) | Report on the trawling experiments of the 'Garland' and on the Statistics of the East Coast Fisheries relating thereto. 13th. Annual report of the Fishery Board of Scotland, 1894, Part 3, 17-122. |
| " (1897) | Report on the trawling experiments of the 'Garland' and on the Fishery Statistics relating thereto. 16th. Annual Report of the Fishery Board of Scotland, 1897, Part 3, 19-87. |
| Gordon, Rev. G. (1854) | A list of the Mollusca hitherto found in the Province of Moray and in the Moray Firth, Zoologist 4; 4300-4318, 4421-4435, 4452-4462. |
| Macgillivray, W. (1843) | A History of the Molluscos Animals of Aberdeen, Kincardine and Banff. Aberdeen 1843. |
| McIntyre, A.D. (1958) | Ecology of Scottish Inshore Fishing Grounds. 1. The Bottom Fauna of the East Coast Grounds. Mar. Res., 1958, No. 1. |
| Rae, B.B. (1956) | The Food and Feeding Habits of the Lemon Sole. Mar. Res., 1956, No. 3. |
| Rae, B.B. and Lamont, J.M. (1962) | Rare Marine Invertebrates found in the Scottish Area. Scot. Nat. 71, No. 1, 23-28. |

- Ritchie, A. (1937) The Food and Feeding Habits of the Haddock (*Gadus aegilefinus*) in Scottish Waters. Fisheries, Scotland, Sci. Invest. 1937, No. 2.
- Ritchie, A. (1938) Preliminary Observations on the Food of the Plaice (*Pleuronectes platessa*) in Scottish Waters. Rapp. et Proces-Verbaux I.C.E.S. CVII, 1938, 49-56.
- Russell, E.S. (1922) Report on the Cephalopoda collected by the Research Steamer 'Goldseeker' during the years 1903-8. Fisheries, Scotland, Sci. Invest. 1921, No. 3 (Feb. 1922).
- Simpson, J. (1910) Notes on some rare Mollusca from the North Sea and Shetland Faroe Channel. J. Conch., 13, 109.
- Stephen, A.C. (1922) A Preliminary Survey of the Scottish Waters of the North Sea by Petersen Grab. Fisheries, Scotland, Sci. Invest. 1922, No. 3.
- " (1929) Studies on the Scottish Marine Fauna: The Fauna of Sandy and Muddy Areas of the Tidal Zone. Trans. Roy. Soc. Edin. 56, Part 2, No. 14.
- " (1933a) Studies on the Scottish Marine Fauna: The Natural Divisions of the North Sea as shown by the Quantitative Distribution of Molluscs. Trans. Roy. Soc. Edin. 57, Part 3, No. 22, 1932-33.
- " (1933b) Rare Cuttlefish (*Stenoteuthis caroli*) washed ashore at Buckie. Scot. Nat. 1933, 96.
- " (1937a) Notes on Scottish Cephalopods. Scot. Nat. 1937, 131-2.
- " (1937b) Recent Invasion of the Squid (*Todarodes sagittatus*) (Lamb)) on the East Coast of Scotland. Scot. Nat. 1937, 77-80.
- " (1944) The Cephalopods of Scottish and Adjacent Waters. Trans. Roy. Soc. Edin. 61, Part 1, No. 9.
- Stephen, A.C., Rae, B.B. and Wilson, E. (1957) Rare Marine Invertebrates recently found in the Scottish Area. Scot. Nat. 69, No. 3, 178-181.

David W. McKay

(There has been some delay in publishing this Report, partly due to material being lost in the post. Unfortunately some blocks of numbers in Table 2 are out of sequence. We very much regret any inconvenience caused.)

TABLE 2

RECORDS OF MOLLUSCA FROM OFFSHORE AREAS OF CENSUS AREA S5

1. <i>Hanleya hanleyi</i>	(a)	41. <i>Mangelia coarctata</i>	(a)
2. <i>Ischnochiton albus</i>	<u>A</u>	42. " <i>nebula</i>	a
3. <i>Lepidopleurus asellus</i>	<u>A</u>	43. " <i>powisiana</i>	(b)
4. <i>Lepidochitona cinereus</i>	<u>A</u>	44. <i>Margarites groenlandicus</i>	a
5. <i>Tonicella marmorea</i>	(a)	45. <i>Nassarius incrassatus</i>	<u>A</u>
6. " <i>rubra</i>	(a)	46. <i>Natica alderi</i>	<u>A</u>
7. <i>Acmaea virginea</i>	<u>A</u>	47. " <i>catena</i>	<u>A</u>
8. <i>Alvania cimicoides</i>	(a)	48. " <i>fusca</i>	a
9. " <i>punctura</i>	<u>A</u>	49. " <i>montagui</i>	(A)
10. " <i>zetlandica</i>	(a)	50. <i>Neptunea antiqua</i>	<u>A</u>
11. <i>Amauropsis islandica</i>	<u>A</u>	51. <i>Patina pellucida</i>	a
12. <i>Aporrhais pespelicana</i>	<u>B</u>	52. <i>Pelseneeria stylifera</i>	a
13. " <i>serresianus</i>	<u>A</u>	53. <i>Philbertia asperrima</i>	(a)
14. <i>Balcis alba</i>	a	54. " <i>linearis</i>	(a)
15. " <i>devians</i>	(a)	55. " <i>purpurea</i>	(a)
16. <i>Buccinum undatum</i>	<u>A</u>	56. " <i>teres</i>	(a)
17. <i>Caecum glabrum</i>	(a)	57. <i>Puncturella noachina</i>	a
18. <i>Calliostoma occidentale</i>	<u>A</u>	58. <i>Rissoa inconspicua</i>	(a)
19. " <i>zizyphinum</i>	<u>A</u>	59. <i>Rissoella diaphana</i>	(b)
20. <i>Cantharidus clelandi</i>	(a)	60. <i>Skenea nitens</i>	(b)
21. " <i>montagui</i>	(a)	61. " <i>serpuloides</i>	(b)

22.	Capulus ungaricus	a	62.	Trichotropis borealis	(a)
23.	Cingula alderi	(a)	63.	Triphora perversa	b
24.	" semicostata	A	64.	Trivia monacha	a
25.	" vitrea	(b)	65.	Trophon barvicensis	(a)
26.	Clathrus clathratulus	(c)	66.	" truncatus	(a)
27.	" trevelyanus	a	67.	Troschelia berniciensis	A
28.	Colus gracilis	A	68.	Turritella communis	(A)
29.	" howsei	a	69.	Velutina velutina	A
30.	Emarginula reticulata	A	70.	Acteon tornatalis	(A)
31.	Eulima trifasciata	(b)	71.	Aplysia punctata	a
32.	Gibbula tumida	A	72.	Archidoris pseudoargus	a
33.	Lacuna crassior	(b)	73.	Clione limacina	A
34.	Lepeta caeca	(c)	74.	Cylichna cylindracea	A
35.	" fulva	A	75.	Eulimella macandrei	(a)
36.	Liomesus ovum	A	76.	Jorunna tomentosa	a
37.	Lora rufa	a	77.	Menestho divisa	(a)
38.	" trevelliiana	(a)	78.	Odostomia acuta	(a)
39.	" turricula	(A)	79.	" eulimoides	A
40.	Mangelia brachystoma	a	80.	Philine punctata	a
81.	Philine quadrata	A	134.	Lima subauriculata	(b)
82.	" scabra	a	135.	Lucinoma borealis	A
83.	Pneumodermopsis paucidens	A	136.	Lutraria lutraria	(a)
84.	Retusa mammillata	(a)	137.	Lyonsia norwegica	B
85.	" truncatula	(a)	138.	Mactra corallina	A
86.	" umbilicata	(b)	139.	Modiolus modiolus	A
87.	Roxania utriculus	A	140.	" phaseolinus	(a)
88.	Scaphander lignarius	A	141.	Monia patelliformis	A
89.	Spiratella retroversa	A	142.	" squama	A
90.	Tritonia hombergii	a	143.	Montacuta ferruginosa	A
91.	" plebia	a	144.	" substriata	A
92.	Dentalium entalis	A	145.	Musculus marmoratus	(a)
93.	Abra alba	A	146.	" niger	a
94.	" nitida	A	147.	Myrtea spinifera	(A)
95.	" prismatica	A	148.	Mysella bidentata	A
96.	Acanthocardia echinata	B	149.	Mysia undata	B
97.	Anomia ehippium	A	150.	Mytilus edulis	a
98.	Arca pectunculoides	(a)	151.	Nucula nucleus	A
99.	" tetragona	a	152.	" tenuis	A
100.	Arctica islandica	A	153.	" turgida	A
101.	Astarte montagui	A	154.	Nuculana minuta	A
102.	" sulcata	(A)	155.	Pecten maximus	A
103.	" triangularis	(a)	156.	Pinna fragilis	B
104.	Cardium exiguum	(c)	157.	Pseudamussium septemr.	(c)
105.	" minimum	A	158.	Solecurtus scopula	b
106.	" ovale	A	159.	Spisula elliptica	A
107.	" scabrum	a	160.	" solida	A
108.	Chlamys opercularis	A	161.	" subtruncata	A
109.	" similis	A	162.	Tellina balaustina	a
110.	" tigerina	A	163.	" crassa	A
111.	" varia	a	164.	" fabula	A
112.	Cochlodesma praetenue	A	165.	" pygmaea	A
113.	Corbula gibba	(a)	166.	Thracia distorta	c
114.	Crenella decussata	(a)	167.	" phaseolina	A
115.	Cultellus pellucidus	A	168.	" villosiuscula	B
116.	Donax vittatus	A	169.	Thyasira flexuosa	A
117.	Dosinia exoleta	B	170.	Venerupis rhomboides	A
118.	" lupinus	A	171.	Venus casina	A
119.	Ensis arcuatus	A	172.	" fasciata	A
120.	" ensis	A	173.	" ovata	A
121.	" siliqua	A	174.	" striatula	A
122.	Erycina nitida	(a)	175.	Alloteuthis subulata	A
123.	Gafrarium minimum	A	176.	Bathypolypus arcticus	A
124.	Gari depressa	a	177.	Eledone cirrhosa	A
125.	" fervensis	A	178.	Loligo forbesii	A
126.	" tellinella	A	179.	Rossia glaucopsis	A
127.	Glycymeris glycymeris	A	180.	" macrosoma	A
128.	Hiatella arctica	A	181.	Sagittatus sagittatus	A
129.	" striata	a	182.	Sepia officinalis	A
130.	Kellia suborbicularis	a	183.	Sepietta oweniana	A
131.	Laevicardium crassum	A	184.	Sepiola atlantica	A
132.	Limea sarsii	B	185.	" pfefferi	A
133.	Lima loscombi	a	186.	Todaropsis eblanae	A

MARINE CENSUS 1

Acceptance of this post was on the understanding that, owing to other commitments, I would not be able to begin operating effectively until some time in November 1976. I propose to start by using part of the Newsletter as a means of communicating with Area Reps. on general matters rather than write, and post, thirty two letters every time a general statement has to be made. Personal postal communication will, of course, continue but this spot is for general communications. The value of this exercise depends upon the 'feedback' I get, so if you react strongly, or have something to say, please write to me or, better still, write your own article for the Newsletter.

Although I have been in office almost a year there are still AR's I have not either met or even written to. In spite of visits to Scotland, and to the northern part of Ireland, I have neglected AR's in Eire. Please accept my apologies, a visit to Dublin has high priority in my plans.

RA21 White Field Cards.

With some justification it has been pointed out that this field card could have been better devised. A preponderance of southern species means that northern recorders spend much time entering records under "Other Species". It is true that Haliotis tuberculata, confined to the Channel Islands, might have been omitted; and so might Yoldiella lucida which is so rare that it has not yet been recorded in this census.

While existing stocks last let us make the best of these shortcomings. I have brought this to the attention of BRC who have agreed that the annoying lack of space in the right hand margin can be immediately rectified. If we can make a good enough case to justify the expense of altering the cards then I will put it to BRC. Your views will be welcome. However critics should remember that the cards are free and, without the wisdom of hindsight, we might do no better were we beginning a marine census today.

Individual site cards.

This is the basic unit of recording but there is apparently no uniformity by AR's in handling original site cards. AR's are required to transfer information from site cards onto 10 km. Master Cards and then to store the site cards so that they are available for other recording schemes and for research. Some AR's, reasoning correctly, that BRC require no more precise record than that of a 10 km. square, have not kept the individual site cards. Without a clear direction on this matter this was unavoidable. Please, in future, transfer records from individual site cards onto 10 km. Master Cards and then store the site cards. However, duplication of site cards from popular sites is unnecessary - one card is enough.

10 km. Master Cards.

From the point of view of BRC this is the most important card. From these alone the maps can be printed. They should therefore contain all the data available on site cards. In future the Marine Recorder will hold, in addition to Area Master Cards, 10 km. Master Cards. I will begin to ask AR's for copies of these this year.

Area Master Cards.

Plans are in hand to duplicate the forty Area Master Cards so that some statement, of the current level achieved in marine recording can be made. It has not yet been decided how this suggestion, from Mrs. S. Turk, should be carried out. Probably one Master Card, front and back, will be printed on each side of an A4 sheet so that twenty sheets should cover the British census area.

The value of C-records.

Some objections have been raised against C-records - the worn or broken shells. It is said that "Only A's are worth bothering about and C's have no value"; that "It may have been washed in, or dropped by a student, shell-collector, small child, seagull, or gravel merchant". Certainly the transportation of clean sand to popular resorts lends its support to the scepticism, and the odd worn shell may well have originated from another locality. But it may just as likely have come from a

locally living, but uncommon, mollusc not yet found alive. The record of the worn shell, as a C-record, alerts people to the latter possibility. In fact, considering the widespread practice of transporting sand around the coast, even a 'live' record of a sand-burrowing bivalve may be suspect.

We cannot be certain of the origin of anything, except, as a hard fact, that mollusc X was found at locality Y alive, dead, or in a worn condition. Therefore, instead of getting nihilistically sceptical, we may as well do what we have undertaken to do and record the facts on the ground as far as we are able.

Scepticism about the value of C-records seems to be grounded, not on the facts of occurrence or non occurrence, but on the possible interpretation of the factual record. This is indeed well founded. I have been told of fresh-looking valves of Chlamys islandica, at a particular offshore Scottish locality, which have never been dredged alive, and probably haven't lived there for a long time. On the other hand isolated valves of Aequipecten opercularis kept me searching around fishing boats at Hastings until I found it alive among dredged Pecten maximus. Another salutary warning, of a different kind, came from a Scottish recorder who found rolled shells of Littorina littorea with the apices worn off, but with the animal very much alive inside; indicating the need for care, not only in interpretation of the facts, but also in factual recording. All factual records are equally valuable so let us record them as they occur, and since we are wise enough not to argue from 'dead' to 'alive', or from C to A, let us credit others with the same wisdom.

C. P. Palmer

WOLFENBÜTTEL, AUGUST 1976

A brief visit to Wolfenbüttel in North West Germany proved rather disappointing with regard to the collection of Continental land snails, but none the less, several interesting observations were made.

Wolfenbüttel is situated on the River Oker, in a low-lying area near the foot of the Harz Mountains. My rather limited collecting was mainly confined to an agricultural area on the outskirts of the town.

The most conspicuously predominant mollusc in hedgerows and ditches was Cepaea hortensis (Muller). Approximately 80% of all specimens found were of the pale yellow bandless variety '00000'. The remainder were all typical yellow shells possessing (to a fainter or darker extent) all five bands - '12345'. Banded shells occurred lower in herbage than the bandless form, and were seemingly more secretive, not emerging from the undergrowth until the evening dew or heavy rain.

Cepaea nemoralis (L.) was present in the same hedgerows and nettlebeds as C. hortensis, but not as abundantly. C. nemoralis did, however, exhibit greater variety in banding and coloration, the form '00300' being the most prominent on both pink and yellow backgrounds. Also collected were forms '00345' (Pink), '003(45)' (Yellow), and '1:345' (Pink). The occurrence and emergence of C. nemoralis was rather similar to that of banded C. hortensis.

Additionally, Arion ater ater (L.) varying from black to brown, and Helix pomatia (L.), were abundant species in hedgerows. H. pomatia even occurred in sparse hedges along suburban avenues where there were no obvious calcium deposits, although soil samples tested with HCl solution did reveal its presence. Sample shells appear to be a rather richer chestnut colour than the creamy English type.

Wolfenbüttel corresponds quite accurately with the most northerly natural surviving record of H. pomatia in England.

A trip to Hohegeib in the Harz Mountains produced Eucobresia diaphana (Drap.), a member of the Vitrinidae, found in very wet conditions by the side of a small mountain stream. The species is noteworthy because of its long, extending mantle, which reaches the apex of the shell, not unlike the local British Semilimax pyrenaicus (Ferussac). The range of E. diaphana extends widely over central Europe, mainly in mountain areas, to southern Holland and the Ardennes in Belgium.

References:

- Cain, A.J., & Currey, D.J. Area effects in Cepaea on the Larkhill Artillery Ranges, Salisbury Plain. Journal of the Linnaean Soc., Vol. 45, Oct. 1963.
- Kerney, M.P. Atlas of Non-Marine Mollusca of the British Isles, May 1976.

I am grateful to Dr. Kerney for the identification and information regarding the distribution of Eucobresia diaphana (Drap.).

R. Carr

REVIEW

The Shell Collector's Guide: an introduction to the world of shells. S. Peter Dance. David & Charles, 1976. £4.95.

In the numerous conchological books of Mr. Dance one has learned to rely on an accurate and thoughtful presentation of interesting facts and also a fine collection of illustrations. In these respects the present volume maintains the standard. There is much to engross the experienced collector, and if he should get a little restive at times at being told yet again that shelling on a reef requires rope-soled sandals and protection from sunburn, he must be reminded of the title of the book. In other words we have here a helpful guide to those who, having just surrendered to the fascination of the subject, are wondering how to become knowledgeable. This reviewer, in curmudgeonly mood, predictably complains however, that the title should read "The Sea-shell Collector's Guide", since the volume deals with but half the subject and as always, no companion volume is promised.

The collecting of sea shells is first of all treated historically, and there is a first-class and easily-used guide to the classification of sea shells. The techniques of collecting, cleaning, recording and storing are most adequately reviewed, bringing together good points made in countless magazine articles, and some probably not made previously. Biology and the study of the live molluscs find Mr. Dance at his best, and his remarks on the uses of shape and pattern, and their relationship between the various genera, make fascinating reading.

The novice who wonders why similar looking shells are allotted to different families while widely diverse specimens may be lumped together, will find a great deal of help, and the psychological reasons for collectors preferring certain families while others are widely neglected, are analysed in a very effective way. There is a chapter on shell-clubs, describing in detail the very artificial and publicity-conscious shows which are fashionable in the United States of America, but making no mention of any organised conchological activity in this country which, from one who has done so much to promote that activity, is a disappointment.

Another frequent puzzlement of the tyro is how to choose between purchase and exchange of those shells which cannot be self-collected. The merits and methods of both ways of acquiring specimens are discussed.

The illustrations are clear, varied and delightful.

T. E. Crowley

SINISTRAL WHELKS

I started collecting shells about 4 years ago when I visited the Channel Isles. I am mainly interested in British Marine, although I do pick up a variety of others when I have the chance. I joined the Society in November 1975 as a Junior Member. I live in Sea Area 13 (Thames) which is usually good for Buccinum undatum (whelks). Since I started collecting shells I have found four sinistral whelks. The first one was soon after I started collecting shells. It was a very good specimen measuring just over 2 inches. The specimen was found on a sandy beach among a variety of other shells and bits of seaweed. There had been quite a rough tide in the night which was the main reason why I was out looking. The colour of the specimen was a

creamy white with greyish blotches on it. I was very surprised as I had read of these shells but never expected to find one myself. At the time I had not heard of the Conchological Society, so I wrote to the British Museum (Natural History). They wrote back and told me that they did not know of any value attached to the shell. I put it in my collection and did not think much more about it until almost a year later when I was walking along the beach; again there had been a rough tide in the night. This was when I found my second whelk. This one was found in much the same conditions except slightly higher up the beach. This specimen was not such a good one, the top of it was slightly chipped and so was the mouth of the shell. It was slightly smaller than the first specimen, about $1\frac{1}{4}$ inches. The colour was a creamy white all over. When I found this specimen I just thought that I must be very lucky.

About 3 months later I found my third specimen. This one was half buried in the sand at right low tide. The colour, shape and size were nearly the same as my second specimen. Even the chips appeared to be in exactly the same places, on the mouth and the point.

This really aroused me, so again I wrote to the British Museum. This time I received an answer from a Mr. John Cooper asking me if he could see my whelk. I sent him my best specimen and when he returned it he thanked me and said only that he did not realise they were found so often.

I joined the Society in 1975 and in January of 1976 I found my fifth specimen. Again this was after a very rough tide. I found this one amongst a pile of whelks at low tide. This specimen was very poor; I still kept it though. The colour was a dirty grey with a bad part of the point missing. There was a small hole in the largest whorl and also a slight chip in the mouth. This was my smallest specimen measuring about 1 inch.

My reason for writing this article is because I am still anxious to know whether I have just been exceptionally lucky or whether they are found as frequently as I have found them. I am also curious to know whether there is any collector's value attached to these shells.

I also collect the fossils of the Pleistocene Age from the Red Crag at Walton-on-the-Naze. All the Neptunea contraria from this age are sinistral. This is very strange because it means that somewhere between then and now, they have all changed. I have now found a dextral specimen; it is in reasonably good condition having one small hole on the largest whorl and measures nearly $2\frac{1}{2}$ inches. I am curious to know whether this shell has any value and I shall be grateful to hear from anyone interested.

Roy Whetnall

THE NEW LIST OF NAMES OF NON-MARINE MOLLUSCA

For many years conchologists in the British Isles have followed a list of names which differed from those used on the Continent and in the United States. As many molluscan projects are now of an international nature, it was appropriate that nomenclature be brought in line with current usage on the Continent. This was done and published in the April 1976 edition of the Journal of Conchology by Waldén (A nomenclatural list of the land Mollusca of the British Isles. J. Conch. 29, 21-25) and Kerney (A list of the fresh and brackish-water Mollusca of the British Isles. J. Conch. 29, 26-28). Some additional species are published in the Atlas of Non-Marine Mollusca (Kerney 1976).

It is gratifying to see that many familiar names are being retained, but the British conchologist used to using the names in the 1951 census list will see several obvious changes. To help members gain familiarity with the new list, a chart is included which lists all species in which the name has been changed together with a 'translation' in the right-hand column giving the old familiar name in Ellis. Most of the changes which have been made are in the generic name only and reference to Ellis 1951 (Census of the distribution of British non-marine mollusca. J. Conch. 23, 171-244), shows that many of the sub-genera included in the 1951 list have simply been elevated to full generic rank. In the new list, introduced species are marked with an asterisk: some of these were already listed by Ellis, but as a separate list at the end of the Census rather than incorporated with the native

snails. Species not recorded in the 1951 list, but published subsequently are pointed out in the chart below, and this includes more than one species new to science (Columella aspera Waldén, Hydrobia neglecta Muus). The other difference between the old and the new list is in the order in which the families are arranged: members should be alert to this when looking for a particular species.

It is hoped that the 'translation' chart will be helpful to members in trying to correlate names of species in the 1951 and 1976 lists and to acquire some familiarity with new names.

One snail not included in the new check list, but included in the Atlas of Non-marine Mollusca is Cochlicella barbara (L.) (= C. ventricosa (Draparnaud) and C. ventrosa (Férussac)). It is unfortunate that the specific name 'barbara' was used extensively for C. acuta (Müller) by British authors in the 19th. century and early 20th. century.

LAND MOLLUSCA

Name used in Waldén 1976	Name used in the 1951 Census (Ellis)
<u>Acicula fusca</u> (Montagu)	<u>Acme fusca</u> (Montagu)
<u>Ovatella</u> (<u>Myosotella</u>) <u>myosotis</u> (Draparnaud)	<u>Phytia myosotis</u> (Draparnaud)
<u>Oxyloma pfeifferi</u> (Rossmässler)	<u>Succinea pfeifferi</u> Rossmässler
<u>O. sarsi</u> (Esmark)	<u>S. elegans</u> Risso
<u>Cochlicopa lubricella</u> (Porro)	<u>Cochlicopa minima</u> (Siemaschko)
<u>Columella aspera</u> Waldén	New species described in 1966 and not listed in the Census. See Paul 1975. <u>J. Conch.</u> 28, 371-383.
<u>Vertigo geyeri</u> Lindholm	<u>Vertigo genesii</u> Gredler
<u>Leiostyla</u> (<u>Leiostyla</u>) <u>anglica</u> (Wood)	<u>Lauria anglica</u> (Wood)
<u>Lauria sempronii</u> (Charpentier)	Not listed in the Census.
<u>Spermodea lamellata</u> (Jeffreys)	<u>Acanthinula lamellata</u> (Jeffreys)
<u>Helicodiscus</u> (<u>Hebetodiscus</u>) cf <u>singleyanus</u> Pilsbry	First discovered in the British Isles in 1975. Report in preparation (Chatfield)
<u>Arion</u> (<u>Carinarion</u>) <u>circumscriptus</u> Johnston	The <u>Arion circumscriptus</u> listed has now been divided into 3 species. See <u>Conchologists' Newsletter</u> 1 (17), 117-8, June 1966.
<u>A. (C.) silvaticus</u> Lohmander	<u>A. circumscriptus</u>
<u>A. (C.) fasciatus</u> (Nilsson)	<u>A. circumscriptus</u>
<u>Semilimax</u> (<u>Semilimax</u>) <u>pyrenaicus</u> (Férussac)	<u>Vitrina pyrenaica</u> (Férussac)
<u>Phenacolimax</u> (<u>Phenacolimax</u>) <u>major</u> (Férussac)	<u>V. major</u> (Férussac)
<u>Vitrea subrimata</u> (Reinhardt)	Recorded in Britain in 1966 and 1967 and reported as <u>Vitrea diaphana</u> , Kerney and Fogan 1969, <u>J. Conch.</u> 27, 17-24.
<u>Nesovitrea</u> (<u>Perpolita</u>) <u>hammonis</u> (Ström)	<u>Retinella radiatula</u> (Alder)
<u>Aegopinella pura</u> (Alder)	<u>R. pura</u> (Alder)
<u>A. nitidula</u> (Draparnaud)	<u>R. nitidula</u> (Draparnaud)
<u>Boettgerilla pallens</u> Simroth	First reported in Britain in 1974. Colville, Lloyd-Evans and Norris, <u>J. Conch.</u> 28, 203-208.
<u>Limax</u> (<u>Limacus</u>) <u>grossui</u> Lupu	First published for Britain in 1976 (Chatfield 1976, <u>J. Conch.</u> 29, 1-4)
* <u>L. (Lehmannia) valentianus</u> Férussac	<u>Limax poirieri</u> Mabilie
<u>Deroceras</u> (<u>Deroceras</u>) <u>laeve</u> (Müller)	<u>Agriolimax laevis</u> (Müller)
<u>D. (Agriolimax) agreste</u> (L.)	<u>A. agrestis</u> (L.)
<u>D. (A) reticulatum</u> (Müller)	<u>A. reticulatus</u> (Müller)
<u>Euconulus</u> (<u>Euconulus</u>) <u>alderi</u> (Gray)	Not listed in the census
<u>Cochlodina</u> (<u>Cochlodina</u>) <u>laminata</u> (Montagu)	<u>Marpessa laminata</u> (Montagu)
<u>Macrogastra rolphii</u> (Turton)	<u>Clausilia rolphi</u> Turton
* <u>Gulella</u> (<u>Huttonella</u>) <u>io</u> Verdcourt	<u>Gulella devia</u> Connolly
<u>Bradybaena</u> (<u>Bradybaena</u>) <u>fruticum</u> (Müller)	<u>Fruticicola fruticum</u> (Müller)
<u>Candidula intersecta</u> (Poiret)	<u>Helicella caperata</u> (Montagu)
<u>C. gigaxii</u> (L. Pfeiffer)	<u>H. gigaxi</u> (L. Pfeiffer)
<u>Cernuella</u> (<u>Cernuella</u>) <u>virgata</u> (Da Costa)	<u>H. virgata</u> (da Costa)
<u>Trochoidea elegans</u> (Gmelin)	<u>H. elegans</u> (Gmelin)

Name used in Walden 1976

Ashfordia granulata (Alder)
Zenobiella (Zenobiella) subrufescens
(Miller)
Trichia (Trichia) striolata (C. Pfeiffer)
T. (T) plebeia (Draparnaud)

T. (T) hispida (L.)
Ponentina subvirescens (Bellamy)
Cepaea nemoralis (L.)
C. hortensis (Müller)

FRESH AND BRACKISH-WATER MOLLUSCA

Name used in Kerney 1976

Viviparus contectus (Millet)
Hydrobia neglecta Muus

Marstoniopsis scholtzi (A. Schmidt)
Ovatella (Myosotella) myosotis
(Draparnaud)
Myxas glutinosa (Müller)
Anisus (Anisus) leucostoma (Millet)
A. (Disculifer) vortex (L.)
A. (D) vorticulus (Troschel)
Bathymphalus contortus (L.)
Gyraulus laevis (Alder)
G. acronicus (Férussac)
G. albus (Müller)
Armiger crista (L.)
Hippeutis complanatus (L.)
Pseudanodonta complanata (Rossmassler)
Sphaerium solidum (Normand)

Name used in the 1951 Census (Ellis)

Monacha granulata (Alder)
Hygromia subrufescens (Miller)

H. striolata (C. Pfeiffer)
See note 24 in Walden's paper (Walden
1976, J. Conch. 29, 21-25)
H. hispida (L.)
H. subvirescens (Bellamy)
Helix nemoralis L.
H. hortensis Müller

Name used in the 1951 Census (Ellis)

Viviparus fasciatus (Müller)
Not in Ellis as it was only described in
1963. See: Muus 1963. Proc. malac. Soc.
Lond. 35, 131-138.
Bythinella scholtzi (A. Schmidt)
Phytia myosotis (Draparnaud)

Lymnaea glutinosa (Müller)
Planorbis leucostoma Millet
P. vortex (L.)
P. vorticulus Troschel
P. contortus (L.)
P. laevis Alder
P. acronicus Férussac
P. albus Müller
P. crista (L.)
Segmentina complanata (L.)
Anodonta minima Millet
Not in the Census.
Collected in the British Isles in 1973.
See: Redshaw and Norris, 1974. J. Conch.
28, 209-212.

J. E. Chatfield

GENERAL NOTES

The Biological Curator's Group, Geological Curator's Group and Systematics Association.

The Function of Local Natural History Collections.

A conference to be held at the University of Liverpool Halls of Residence 22/23
September 1977.

In this country there is a wealth of botanical, zoological and palaeontological material held by varied provincial institutions. The purpose of this meeting is to assess the relevance of such collections to the solution of scientific and environmental problems and to stimulate co-operation nationally. Speakers will include those involved professionally in organising collections and a wide variety of users.

Further details, programme and registration form are available from:
Mr. E. F. Greenwood, Assistant Director (Academic), Merseyside County Museums,
William Brown Street, Liverpool, L3 8EN.

IS THERE MORE THAN ONE SPECIES OF TRIFORIS* IN BRITAIN AND IRELAND?

Monsieur Philippe Bouchet of Paris writes that, up to the present, he has recognized four different species living on the southern coast of Brittany, and only one in the Channel and northwards, but he now feels almost sure that some of the

others will be found living in Cornwall, Wales and Ireland, where there is a southern element in the fauna. He collects Triforis alive at low tide by brushing the underside of stones encrusted with sponges, on which they feed, then sieves them on a 0.7mm. mesh sieve and sorts them under the microscope. Although identification is usually possible by examining the sculpture of the larval shell, or the adult shell, if this is in very good condition, it is sometimes impossible to give a precise identification without the living animal. It should be possible to classify the animal in the following scheme:-

1. Animal reddish with a few small yellow spots.
2. Animal white with numerous black marks.
3. Animal white with white hyaline tentacles.
4. Animal white with opaque yellow marks on the tentacles.

Species 3 is the most common and should be called T. adversa Montagu. The others are as yet undescribed and Dr. Bouchet would be pleased to receive any specimens at the following address. (Animals should be preserved in 70% industrial spirit).

Muséum National d'Histoire Naturelle, Laboratoire de Biologie des Invertébrés Marins et Malacologie, 55 Rue de Buffon, 75005 Paris.

(*As Triphora in British literature)

Stella M. Turk

INTERNATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE - ANNOUNCEMENT - A.N.(S) 100

Required six months' notice is given of the possible use of plenary powers by the International Commission on Zoological Nomenclature in connection with the following name listed by case number: (see Bull. Zool. Nom. 33, part 2, 30 September 1976).

Z.N.(S.) 83 Pleurocera Rafinesque, 1818 (Gastropoda), proposed designation of type-species for.

Comments should be sent in duplicate, citing case number, to the Secretary, International Commission on Zoological Nomenclature, c/o. British Museum (Natural History), Cromwell Road, London, SW7 5BD, England, if possible within 6 months of the date of publication of this notice. Those received early enough will be published in the Bulletin of Zoological Nomenclature.

6th. October 1976

R. V. Melville (Secretary to the International Commission on Zoological Nomenclature)

NON-MARINE MOLLUSCA OF GLAMORGAN

Members may be interested in back numbers of the Transactions of the Cardiff Naturalists' Society, Volume 59 (1926) which includes a 17-page paper entitled "The Non-marine Mollusca of Glamorgan" by J. Davy Dean. Also in this number is an obituary of William Evans Hoyle (3 pages) who was formerly a President of the Conchological Society and Director of the National Museum of Wales. Copies of volume 59 are still obtainable from the Librarian, National Museum of Wales, Cardiff, at 52p + 12p postage (UK) and packing.

SHELL SHOCK

Rick Luther of Penzance has, with the help of a friend, compiled the first ever English-Chinese book on shells.

Mr. Luther, an employee of Cable and Wireless, who studies shells as a hobby, took nine months to complete the book, "Cowries and Cones of Hong Kong".

Mr. Luther travels the world, and although he owns a home at 8A Godolphin Road, Long Rock, he spends very little time in West Cornwall. The idea of a more simplified book on shells written in English and Chinese was Mr. Luther's. He worked in conjunction with a Mr. Nee Chung, of Hong Kong to compile the book and already it has proved to be a success. Hundreds of copies have been sold in Hong Kong, the Phillipines, Singapore, Taiwan and the U.S.A. As yet no copies have been sold in Britain. Mr. Luther said that he hoped the book would soon be available here and if anyone was interested in having a copy to write to him at his Long Rock address.