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Produced by THE CONCHOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND

A USEFUL METHOD FOR COLLECTING SMALL SPECIES OF MOLLUSCA

Members of the staff of the Leeds City Museum have, over the last few years, had a large amount of success in the locating, collecting and sorting of the smaller species of mollusca, both in the field and in the laboratory, whilst working with Dr. M. P. Kerney on the distribution of the British land and freshwater mollusca. The following account gives details of one of the methods used. It was found that by the use of modern nylon mesh, fitted into the standard design, a set of sieves could be made that were far superior to the old type of sieve which was made from interwoven copper-wire. The main advantages of this new mesh are that the smaller species of mollusca are much more easily seen in the field, due to the colour of the mesh which is white. The sieves are more flexible and therefore do not break the more fragile species as did the old wire sieves, also they are much easier to clean in the field. The size of the sieves depends on the type of job to which they are put, but we found that the most useful size is 9 x 6 ins, large enough to allow a fairly large sample to be sieved, but not so large that it becomes a problem to carry into the field. It was also found that only two sizes of mesh were needed to give quick and useful results when samples are taken from a large number of localities, as for the purpose of mapping the distribution of a species within an area.

The materials required are as follows, and can be purchased for only a few shillings.

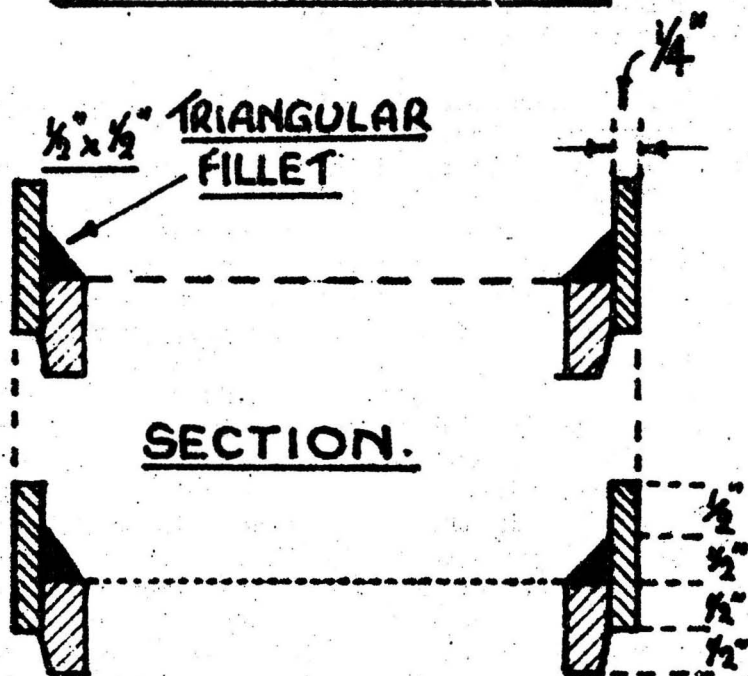
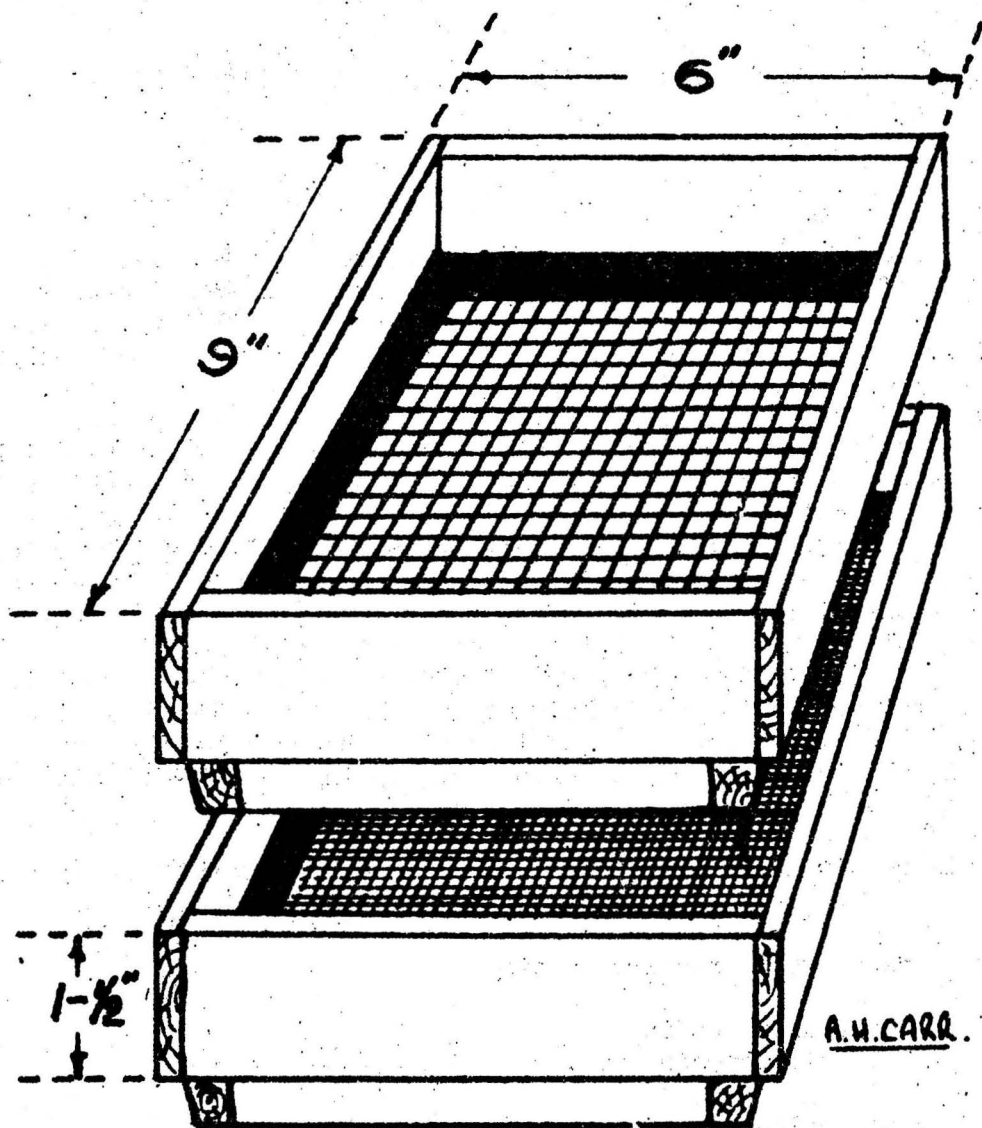
- 6ft $1\frac{1}{2}$ " x $\frac{1}{4}$ " clean wood free from knots.
- 6ft 1" x $\frac{1}{2}$ " " " " " "
- 6ft $\frac{1}{2}$ " x $\frac{1}{2}$ " triangular beading.
- Evo-Stick, or some similar adhesive.
- 1" Panel pins.
- 1 Piece of Nybolt nylon mesh 10 - GG 2000, 9 x 6 ins.
- 1 Piece of Nybolt nylon mesh 30 - GG 670, 9 x 6 ins.

For a successful job it is necessary to cut the joints squarely and accurately to the sizes shown in the sketch. First cut four lengths 9 x $1\frac{1}{2}$ x $\frac{1}{4}$ ins, and four lengths $5\frac{1}{2}$ x $1\frac{1}{2}$ x $\frac{1}{4}$ ins. Glue and pin the joints together, using Evo-Stick, to form the two oblong outer frames. Evo-Stick is the best glue for this particular job as ordinary wood glue will not stand up to the constant soaking the sieves have, and acetate adhesives tend to dissolve the nylon mesh. Next make up the two frames from the 1 x $\frac{1}{2}$ in. wood to fit snugly into the frames already made, and glue and pin them into the underside of the outer frames, precisely $\frac{1}{2}$ in. in from the bottom of the outer frames. If this stage is done haphazardly then you are likely to have trouble with the finished job. The next step is to take the two pieces of nylon mesh and glue one in each of the two frames to the top of the inner frame, which can be seen to have a generous step of $\frac{1}{2}$ in. all around, which gives a good area on which to glue the nylon. Next cut the triangular fillets, shown black in the sketch, and glue and pin them into place. These fillets should be mitred at the corners to make an accurate fit so that there are no corners into which a small shell can get lodged. It will be noticed from the sketch that the protruding edge of the 1 x $\frac{1}{2}$ in. insert is tapered off slightly to give a lead into the lower frame. All that remains is then to paint and/or varnish the wood to protect it from the damp conditions in which it is used, a light coloured paint is best for this purpose so that the sieve can easily be seen in the field should it be placed on the ground and left by mistake.

Nybolt (Swiss nylon bolting cloth) can be obtained from John Staniar and Co., The Manchester Wire Works, Sherborne Street, Manchester M3 1FD.

A. H. Carr, Leeds City Museum

NATURALIST'S TWO-TIER SIEVE.



JOINT FIELD MEETING TO THE NORFOLK COAST WITH THE
GEOLOGICAL SOCIETY OF NORFOLK, SATURDAY 8th. AUGUST 1970

The purpose of the meeting was to examine and collect from a series of sands occurring in the tills of the Norfolk Coast. The first of these was at California Gap (NGR TG/518417) where a series of sands occur between two tills or boulder clays. Near the base, these sands are often rich in shell fragments and members collected a good representative series. The sand beds are probably a northern extension of the Corton Sands. Many of the shells are well known from the earlier Crag series, such as Scaphella lamberti (Sowerby), Turritella incrassata (Sowerby), Astarte omalii Lajonk, etc., but with them are considerable numbers of Macoma balthica (Linne). The 'Cortonian' fauna has been the subject of much controversy over the years and three possible origins have been suggested:

- 1) That the whole fauna lived in the area and that the 'warm water' forms, which had been wiped out by an ice advance, re-occupied the area from elsewhere. In support of this argument certain species were cited which were not known in earlier Crag beds. One of these species has since been found in the Ludham Crag and others seem to have been based on small possibly immature forms, or proto-conchs. Since the original specimens are not available, it seems best to ignore these earlier records and concentrate on accurate collecting.
- 2) That the deposit was formed partly from the destruction of Crag beds of several ages during a temporary regression of the ice front and that all the shells are derived.
- 3) That some forms were derived from earlier Crag and that these are mixed with an indigenous fauna. Certainly the forms characteristic of the earlier Crag are usually very fragmentary and worn.

After driving over a large area of low lying silty ground, bordered by sand dunes, the next area of higher ground was reached. The party descended the cliffs near Mundesley (Little Marl Point, NGR TG/300378) in the hope of locating shelly layers in the Gimingham Sands. Although this was unsuccessful, shell fragments were seen in a typical boulder clay, including Cardium (Cerastoderma) edule L., Artica islandica (L.) and Macoma balthica. A small chalk bluff at the base of the cliff was examined and some members collected Maastrichtian Chalk fossils there.

The last stop was at West Runton Gap (NGR TG/185431) where the party first examined the sands in the large basin to the west of the Gap. The mode of formation of these large sand basins is not fully understood; they may or may not have been formed at the same time as the large spreads of Corton Sands to the south. Near the top of the basin a layer of large flints was seen and from this a number of flat, rounded pieces of ironstone, a piece of heavily mineralised fossil wood, and a fragment of deer antler, were taken. For about two metres below this pebble bed the current bedded sands contain large numbers of worn shells and shell fragments. The majority of the shells are the same species as those found in the clays of the North Sea Drift but in addition Red Crag shells such as Nassarius reticosus (Sowerby) form costatus (Wood) have been found, as well as extremely thin and fragile freshwater shells. On this occasion an example of the Cromerian Valvata goldfussiana (Kennard) was found. The ironstone, deer antler and freshwater shells could well be all from the Cromerian period.

For the remainder of the time available members split up into groups, to browse either on the dark humic clays of the Lower Freshwater Bed or on the Stone Bed of the Weybourne Crag. The former is exposed at the base of the cliffs and is the type site of the Cromerian, and yields a selection of plant material, freshwater shells, fish teeth, etc.. The large flints of the Stone Bed commonly trap worn sea-urchin casts and belemnites from the Chalk, mixed with beds of modern Mytilus edulis and some striking red and orange coloured Nucellas and Littorinas.

25 January 1972 P. Cambridge

FIELD MEETING WEEKEND IN PEMBROKESHIRE, 21st.-24th. MAY 1971

The weather was fine and almost unbearably hot whilst travelling to and from Wales on the Friday and Monday, but Saturday was cold and grey and on Sunday it

poured with rain all day just in the chosen collecting spot. The water-pump at Dale Field Centre had broken down a few days previously so that all the marine tanks had been emptied and their contents returned to the sea, and our visit to the Centre had therefore to be cancelled. Apart from this, the field trip proved most rewarding so far as the mollusca were concerned.

The total muster of participants numbered 16 (a high attendance considering the long travelling distances involved), and attention was given almost exclusively to marine collecting, land mollusca being examined very briefly only once when the tide was too high for marine work. From base camp in the charming cathedral town of St. Davids the party visited the Southern tip of the Milford Haven peninsula on the Saturday, whilst on the Sunday attention was given to the North coast of Pembrokeshire.

The principal locations examined were as follows:-

1. The Gann, Dale. C.A. 21. Grid ref. 12/8106

Estuarine mud-flats in the Milford Haven basin. Live material was plentiful but in poor condition. The author noted greater evidence of pollution than on previous visits and presumed this was due to increasing contamination by oil from the nearby ships and refineries and to the side-effects of measures taken to deal with this problem.

2. St. Bride's Haven. C.A. 21. Grid ref. 12/8011

A small sandy inlet on the western side of the peninsula surrounded by barnacle-encrusted rocks. Naturally rock-dwelling species predominated amongst the finds, but a search of the floor of the creek was prevented by a swiftly-rising tide. Specimens of Littorina saxatilis of brilliant red and orange hues were found clinging to the rocks.

3. Broad Haven. C.A. 21. Grid ref. 12/8513

A wide sandy beach facing West. Despite the nearly high tide some interesting finds were made such as Acteon tornatilis complete with operculum (the only one found during the weekend), a fragile Philine aperta snatched in the nick of time from under a passing foot, and Turritella communis which proved unexpectedly "common"!

4. Newgale Sands. C.A. 21. Grid ref. 12/8422

A wide West-facing sandy bay backed by sand dunes and a massive shingle bank. The tide was full in so some members began examining the fauna of the sand dunes till recalled by a shout from the author who was finding live Natica catena and Turritella communis by the handful in the piled-up shingle. Also plentiful were Ensis siliqua and Pharus legumen which despite their fragility lay unbroken by the score on top of the shingle.

5. Newport Bay. C.A. 22. Grid ref. 22/0540

North-West facing sandy bay with long sand bar reaching South across R. Nyfer estuary. Plentiful supply of shells, both bivalves and gastropods, though the author noticed certain diminutions in numbers and variety of species compared with previous years. In particular there were no Mya and less Lutraria and Aphorhais pespelicani than usual. However conditions may well have been influenced by a less-than-maximum tide and a lack of rough weather prior to the visit. This may also explain why the promised Cyprina islandica was not in fact found live, though the author spotted underwater at the expected location a perfect specimen with valves firmly attached to each other by a still pliable ligament. This was duly rescued from the deep at the cost of wet knees and waterlogged boots!

Visits were made to other locations by various individuals and their principal finds were as follows:-

Whitesand Bay, St. Davids.

Another West-facing sandy bay where Mr. and Mrs. Drake found Arca tetragona.

Cwm-yr-Eglwys.

A rocky cliff-bound cove facing North East near Newport which was visited by a small party. Finds were mainly common rock-dwelling species.

West Angle Bay.

Rock-scattered bay at the South-Western end of Milford Haven. Again only common rock-dwelling species were found.

Freshwater Bay. C.A. 21. Grid ref. 11/8899

Wide West-facing sandy bay on the South-Western tip of Pembrokeshire, and the southernmost location visited. At first sight (on Monday, 24th. May) the vast flat sands seemed to have been swept as clean as a whistle by the swift tides. However Mrs. J. Llewellyn Jones took away some shell sand for examination which subsequently proved abundant in tiny mollusca, whilst a search around a large bed of seaweed-covered low rocks produced the following:-

Gastropods

Emarginula conica
Diodora apertura
Patella vulgata (A)
P. aspersa (A)
P. pellucida
Calliostoma zizyphinum
Gibbula cinerea
G. umbilicalis
Tricolia pullus
Littorina littorea
L. saxatilis (A)
L. neritoides (A)
L. littoralis (A)
Clathrus clathrus
Balcis alba
Trivia arctica
Nucella lapillus
Ocenebra erinacea
Nassarius incassatus

Lamellibranchs

Nucula nucleus
N. turgida
Glycymeris glycymeris
Arca tetragona
A. lactea
Monia patelliformis
Heteranomia squamula
Mytilus edulis
Modiolus barbatus (Juv.)
Musculus discors
Chlamys varia
C. distorta
Lasaea rubra
Cerastoderma edule
Venus fasciata
V. striatula
Venerupis pullastra
Abra alba
Solen marginatus
Spisula elliptica
Sphenia binghami
Hiatella arctica

Whilst all participants enthused over the way in which the shells found had surpassed their expectations, the author felt a trifle disappointed that the tides and weather had not been at their best and wondered whether a longer stay, had that been possible, would have led to the discovery of further species, or whether pollution of the area has increased to such an extent that some species have suffered a permanent reduction in numbers as a result.

The author's grateful thanks are due to Mr. John Llewellyn Jones and to Mrs. J. Llewellyn Jones and Mrs. S. M. Turk for their help with the identification and listing of finds.

J. T. Sawyer, B.A.

LIST OF SPECIES FOUND DURING PEMBROKESHIRE
WEEKEND FIELD MEETING - 21st/24th MAY 1971

<u>Winckworth</u>		<u>Dale</u>	<u>St.</u>	<u>Broad</u>	<u>Newgale</u>	<u>Newport</u>
<u>List</u>			<u>Bride's</u>	<u>Haven</u>		
<u>No.</u>	<u>GASTROPODS</u>	<u>22.5.71</u>	<u>22.5.71</u>	<u>22.5.71</u>	<u>22.5.71</u>	<u>23.5.71</u>
G 2	<u>Emarginula reticulata</u>					B
G 6	<u>Diodora apertura</u>					B
G 7	<u>Patella vulgata</u>	A	A		B	B
G 9	<u>P. aspersa</u>		A			C

Winckworth			Dale	St.	Broad	Newgale	Newport
List			Bride's	Haven			
No.		GASTROPODS	22.5.71	22.5.71	22.5.71	22.5.71	23.5.71
G 10	Patina pellucida					C	C
G 13	Acmaea virginea		B				
G 20	Calliostoma zizyphinum						C
G 23	Gibbula magus		C				
G 25	G. cinerea		A	A			C
G 26	G. umbilicalis		A	A		C	C
G 31	Monodonta lineata		A	A			
G 36	Tricolia pullus				C		
G 37	Lacuna vineta						B
G 40	L. pallidula						B
G 41	Littorina littorea		A	A			B
G 42	L. saxatilis		A	A	B		A
G 43	L. neritoides			A			
G 45	L. littoralis		A	A			B
G 46	Hydrobia ventrosa				C	C	
G 48	H. ulvae						C
G 55	Cingula semicostata				C		C
G 57	C. cingillus				C		
G 58	Alvania crassa						C
G 71	Rissoa parva				B	C	C
G 74	R. membranacea						C
G 87	Turritella communis		A		A	A	B
G 90	Bittium reticulatum		C		C		
G 91	Cerithiopsis tubercularis						C
G 94	C. jeffreysi (?)						C
G 157	Turbonilla elegantissima						C
G 161	T. crenata (New record)						C
G 168	Calyptraea chinensis		A			C	
G 169	Crepidula fornicata		C				
G 170	Aporrhais pespelicani					B (juv)	B
G 176	Natica catena				B	A	
G 177	N. alderi					C	
G 184b	Trivia arctica		C		B	C	C
G 190	Nucella lapillus		A	A			C
G 192	Ocenebra erinacea		C				
G 204	Buccinum undatum		B			C	C
G 207	Nassarius reticulatus		A	C	B		B
G 208	N. incrassatus						B
G 212	Lora turricula						B
G 214	L. rufa						C
	Mangelia sp.						C
G 230	Acteon tornatilis				B		
G 245	Tricla lignaria					B	
G 247	Philine aperta				B	C	

LORICATA

LD 7	Lepidochitona cinereus	A					
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LAMELLIBRANCHS

L 2	Nucula nucleus				C		
L 4	N. turgida	B					B
L 12	Glycymeris glycymeris						C
L 16	Anomia epipphium						B
L 19	A. squamula						B
L 20	Mytilus edulis	A					A
L 28	Musculus discors						B
L 29	M. marmoratus						C
L 35	Ostrea edulis	C					C
L 39	Pecten maximus	C	A				C
L 42	Chlamys varia	C					C
L 43	C. distorta						B
L 44	C. opercularis	B	B				C
L 47	C. tigerina						C

Winckworth			Dale	St.	Broad	Newgale	Newport
List				Bride's	Haven		
No.	LAMELLIBRANCHS		22.5.71	22.5.71	22.5.71	22.5.71	23.5.71
L 60	Thyasira flexuosa						C
L 66	Phacoides borealis					C	
L 70	Lasaea rubra				B	B	
L 84	Cyprina islandica		C				B
L 87	Cardium echinatum						C
L 90	C. ovale		C				C
L 92	C. exiguum		A				C
L 93	Cerastoderma edule		A			C	B
L 94	Laevicardium crassum		C				C
L 95	Dosinia exoleta		C				C
L 98	Callista chione						C
L 99	Venus verrucosa						C
L 100	V. casina						C
L 101	V. ovata						B
L 103	V. striatula		A			A	B
L 105	Venerupis rhomboides		B				C
L 106	V. pullastra		A				B
L 108	V. decussata		A				B
L 111	Mysia undata					C	
L 112	Donax vittatus				B	B	B
L 116	Tellina tenuis				B	C	B
L 117	T. fabula						B
L 120	T. crassa						C
L 123	Macoma balthica		A		C		C
L 124	Scrobicularia plana		A				
L 126	Abra alba		B				B
L 129	Gari fervensis		B			C	B
	Solecúrtus sp.						C
L 135	Pharus legumen				B	B	
L 136	Cultellus pellucidus				C		
L 137	Ensis ensis				B	C	B
L 139	E. siliqua		B		B	B	B
L 140	Solen marginatus		C				B
L 141	Mactra corallina		C		B	B	B
L 142	Spisula elliptica						C
L 143	S. solida						C
L 144	S. subtruncata		C				
L 145	Lutraria lutraria		C				
L 147	Mya truncata		C				
L 148	M. arenaria		B				
L 150	Corbula gibba						C
L 151	Hiatella arctica		A		C	C	
L 157	Barnea candida		B				
L 170	Thracia phaseolina						C

KEY: A = Live specimen

B = Freshly dead gastropod (with operculum) or hinged valves of bivalve

C = Worn shell or single valve only

FOURTH EUROPEAN MALACOLOGICAL CONGRESS, GENEVA 1971

The Fourth European Malacological Congress was held in Geneva at the Natural History Museum from 6 - 12 September 1971 and it was attended by several members of this Society. It proved to be an instructive and enjoyable meeting.

The Congress programme consisted of indoor lecture sessions mostly of short 10 minute papers, evening discussion sessions, field excursions and an introductory reception and a final Congress Dinner. The papers covered a variety of topics including Palaeoecology, Taxonomy, Shell growth, Parasites of molluscs, Physiology and Functional Anatomy, Endocrinology, Ecology, Zoogeography and Polymorphism. Papers and abstracts read at the Congress will be published in due course in a special volume of Malacologia. The evening working sessions concerned (1) a committee meeting of council members of European and American Malacological Societies; (2) a meeting introducing the European invertebrate survey; (3) a

meeting discussing marine recording and (4) General Meeting of the Unitas Malacologia Europaea. The venue of the 1974 Congress was decided to be Milan, Italy.

The field excursions started with a boat trip on Lake Geneva, and here, in absence of very clear views, members of the Congress were able to circulate around the boat and talk. The first practical field work was undertaken on the excursion to the Jura. Four coaches of malacologists left the museum stopping first at Port Choimeul on the shore of the lake at a boating marina where finds included Lymnaea auricularia, L. stagnalis, Planorbis corneus, Bithynia tentaculata and Viviparus ater. Returning to the coach, Pyramidula rupestris and Helicigona lapicida were recorded on a shaded wall.

The second stop at Coinsins (470 m.) was made to show a trench exposing a chalky lake or marsh deposit containing numerous fossils (Valvata and Pisidium). Underlying the calcareous layer was a moraine which included pieces of granite, gneiss and mica-schist which are rocks not found in situ in that area. The marl above the moraine contained the cool water mollusc P. lilljebourgi as a fossil. From Coinsins the party proceeded to visit a tufa and wood near La Cesille (580 m.). This stop included much of interest from the calcareous crumbling tufa deposit forming a small cliff at the head of a stream to the very rich mixed woodland nearby. In the wood some familiar species, e.g. Helicigona lapicida, Cochlicopa lubrica, Retinella nitidula and Marpessa laminata were collected, but in addition there were many species not found in the British Isles. These were Isognomostoma isognomostoma, Monachoides incarnata, Cochlostoma septemspirale and Orcula dolium. Other species uncommon in the British Isles, but found at La Cesille, were Vitrea diaphana (the Vitrea recently added to the British list), Lacinaria biplicata and Helicodonta obvoluta. The Jura excursion was concluded with a visit to Lac de Joux (1,100m.). Many freshwater shells were found on the shore of the lake, but the fauna contained a restricted number of species notably Valvata piscinalis, Sphaerium corneum, Lymnaea stagnalis, Planorbis carinatus and Pisidium, along with damp terrestrial species such as Zonitoides nitidus, Arianta arbustorum and Succinea. As the Jura are composed of limestone (from which the Jurassic was named) a varied molluscan fauna was recorded on this excursion.

The final day of the meeting was a coach excursion to Chamonix and Mont Blanc. The first stop at the Chateau Chillon along the shore of Lake Geneva, yielded 20 species of land molluscs. These included some familiar species to British collectors, e.g. Discus rotundatus and some unfamiliar ones, e.g. Fruticicola fruticum, Clausilia parva, C. cf. plicatula and Chondrulus avanacea.

At Chamonix, in steady rain, 17 species were recorded from roadsides, under boulders and the edge of a mixed coniferous wood behind the town. Chamonix is on acid rock, and together with the wet weather, the list included 7 slugs:- Arion hortensis, A. ater, A. circumscriptus, A. subfuscus, Limax tenellus, L. cinereoniger, Agriolimax reticulatus and Milax rusticus. The snail fauna was characteristic of acid-neutral soil with several of the Zonitidae.

J. E. Chatfield

BELGIUM

The 'Association Belge de Malacologie, de Conchyliologie et de Palaeontologie' of Brussels was founded in 1967 and since that time has regularly kept us informed of their proceedings. The Belgian Society has done useful work and grown steadily under the direction of its President, M. Maurice Lucas and with Mme. Lucas as Hon. Secretary.

With the recent retirement from the Chair of M. Lucas, the Society has been undergoing reorganisation and has adopted a wider sphere of activity and a new constitution. It will henceforth be known as the Societe belge de malacologie. It will aim to assist and educate the amateur and the student, conduct scientific research into the mollusca, evaluate original work, encourage at meetings and through correspondence the interchange of ideas and information, provide literature for the use of its members, organise field meetings, liaise with other societies and institute a mapping scheme for the distribution of the Belgian mollusca, all of which aims we may cordially support.

A monthly bulletin is being issued under the title 'Informations', containing illustrated articles, original research and notes on the proceedings of the Society. The issue for February 1972 provides an excellent review on the European Glycimeridae by M. Lambiotte, an article on the mollusca of the Italian Adriatic islands by R. Jambe, notes on the principles of shell identification by R. Verhaeghe and some good working illustrations of local chitons.

Chairman and Editeur responsable, M. M. Lambiotte, [REDACTED],
1410 Waterloo, Belgium.

T.E.C.

ANODONTA ANATINA (LINNE) IN CAITHNESS (V.C. 109)

As long ago as 1864 there is a record of a large freshwater bivalve being present in Caithness. This record occurs in a paper written by C. W. Peach (The Land and Freshwater Shells of Caithness. J. Conch. 4 (1884): 225-228). In this paper Peach says that Unio margaritifera is to be found rather plentifully in the River of Wick. Since Peach's day this bivalve has had a change of name and is now known as Margaritifera margaritifera (L.), or more commonly, as the freshwater pearl mussel.

No further mention of a large freshwater bivalve can be found until 1927-28, when C. Oldham makes mention of Anodonta anatina (L.) being found in the River of Wick. This record occurs in one of the Conchological Society's Census note books. Oldham does not give much detail, perhaps because at that period his interests in the north of Scotland were confined mainly to Pisidium searches.

We therefore have two records of freshwater bivalves 70 years or more apart, one of M. margaritifera, a soft water species, the other of A. anatina, a hard water species, both coming from the same river.

During April 1971 Dr. M. P. Kerney mentioned that it was improbable, though not impossible, that both species should occur in the one river, and that the occurrence should be investigated if possible. So during the next few months I visited the Wick River (Grid Refs. ND347516, ND320518, ND266547), The Burn of Acharole (ND248546), Watten Loch (ND212577), Scarmclate Loch (ND193589) and Wester Loch (ND235594). In each of these places I found plentiful specimens of a large bivalve. Samples from each site were sent to Dr. Kerney for his determination, and his reply in each case confirmed these bivalves as Anodonta anatina (L.).

The presence of this species agrees with the environment, as it is an area almost totally of Devonian rock, a notable hard water producer. Peach's record of M. margaritifera is obviously erroneous, although the reason may lie in the fact that a very distorted form of A. anatina is present in the Wick River between Milton and Stirkoke which resembles M. margaritifera in outside appearance, having highly eroded umbones, very dark colouring, and a wingless posterior. The habitat of A. anatina in the Wick River shows a decided preference for slow flowing water, with a sandy silty bottom, and the typical A. anatina are found in these areas, while in faster parts of the river the distorted forms are found. All the sites previously mentioned are of this composition, sandy silty, except in the Loch of Scarmclate, where the largest specimens of A. anatina so far found are present, living in a very dark grey/black mud anything up to 2 ft. deep and resting upon a bank of granular peat.

R. G. Meiklejohn

MEETING OF NATIONAL BIOLOGICAL SOCIETIES

A meeting was held for representatives of national biological societies at Juniper Hall, Dorking, Surrey, on Saturday 20th. October 1971. Four members of the Society were present, representing both marine and non-marine interests.

The meeting was primarily concerned with mapping schemes but other items of information and aspects related to the collecting of animals and plants were also introduced and discussed.

1. Rare species list. Societies were asked to prepare list of rare species.
2. Codes of conduct. The S.P.N.R. (Society for the Promotion of Nature Reserves) have prepared a general code. Various societies were considering specialist codes of conduct in an attempt to avoid serious depletions of populations as a result of (often unnecessary) over-collection. Several societies had prepared codes which were ready for distribution to their members. It was suggested that dealers and sub-aqua clubs should be asked to co-operate.
3. Policy on introductions. The meeting was referred to an article in the Conservation Review.
4. Museums and Regional Centres. The effect of the new Bill on local government which would seriously restrict funds of larger provincial city museums in Metropolitan counties was discussed. A letter of concern was drafted to the Museums Association, supporting their request for adequate finance to museums acting as regional centres.
5. List of museum collections. Mr. R. J. Cleavelly of British Museum (Natural History) outlined his project to locate collections of biological material of historical or taxonomic importance with the view to the preparation of an Index extending C. D. Sherbourne's "Where is the.....Collection?" Questionnaires were being circulated.
6. Marine recording. Schemes on Algae, Mollusca and Fish were now in preparation. The littoral zone was interpreted as 2 miles from any land. The 10km. unit was to be used for mapping and field cards were in preparation.
7. Common species card. As it is difficult to obtain complete data on many common species it was decided that a card of about 500 readily identified species from several groups might help future recording.
8. Duplication of data. Mr. Heath reported that the B.R.C. (Biological Record Centre) now houses about 50,000 8" x 5" cards and a larger number of individual record cards. Methods of duplicating data (a) for safety and (b) to supply biologists with data, were discussed. To offset the present disadvantages of photocopying the possibilities of using micro-film were discussed. With this method complete sets of data could be housed at large museums. Suitable safeguards would be necessary against disclosing sites of particularly rare species.
9. European invertebrate survey. Some international co-operation has now resulted in mapping centres set up in different European countries with a view to mapping the invertebrate fauna of Europe. The B.R.C. have produced recording cards and these are obtainable from Mr. Heath. Members of the Society who travel in Europe could help the scheme by recording the molluscs they find.

The meeting proved to be a useful medium of exchange of ideas and progress reports between societies actively involved in mapping schemes. The next meeting was arranged for November 1972.

J. E. Chatfield

COLLECTING SUBSTRATA IS FUN (?)

During the August Bank Holiday 1971, Flt. Lt. Doug Taylor and three members of the Scampton Sub Aqua Club set off from Scampton near Lincoln at 8 p.m. on the Friday evening for Martins Haven in South Pembrokeshire. It was considered that with two drivers taking turns at driving the party would be sufficiently rested and could dive on arrival for it was summer and it should be an uneventful trip. So much for planning! It was a shocking journey but despite the half hour of torrential rain, three hours of heavy rain, one traffic jam, being lost twice and one very minor accident, the 340 miles were completed by 5 o'clock on Saturday morning.

At West Hook Farm the tent was erected, dinghy inflated, regulator and pipes fitted to the storage cylinder, water collected from the well, and a meal prepared. The rain was not really a problem - it was just steady, persistent and wet. However we were lucky, the wind was fairly strong and even though it blew down the

tent a couple of times it did tend to dry us. It was not quite what had been anticipated when the trip was planned for a warm summer weekend but, regardless, we were there to dive underwater, not worry about conditions on the surface. So being keen and enthusiastic divers there was no nonsense about having a few hours sleep, we all wanted six dives each over the weekend and we were ready to go - and this had nothing to do with the fact that by this time we were wet and cold, in keeping with the weekend, the tent had sprung a leak and our sleeping bags were wet before we realised it, and the only way to get warm was to put our wet suits on and dive!

Boat and gear were carried down to the beach and then the outboard engine would not start. It was not the club's engine but a borrowed one, ours had been in for repair two months and it was still unserviceable awaiting spares so we had had to hire this one. Eventually it was dried off, started, and all four of us set off into the bay. The sea was fairly choppy and the off-shore wind made it imperative that we did not venture out beyond the protection of the cliffs. We all dived, substrata was collected as well as a few shells for the Conchological Society, sufficient scallops for supper and then after six man dives, fatigue, deteriorating weather and poor underwater visibility forced us to return to camp. Aqua lungs were recharged, a delicious hot meal of scallops was prepared and the tent patched. Finally a visit was paid to the local inn "The Lobster Pot". Fortune continued to scowl for when one of our members wearily leant back against a large glass room divider it just disintegrated - apparently it had been cracked previously and his weight was more than it could stand.

Saturday night was rather disturbed for the rain continued and the wind reached gale force proportions. However once everyone had managed to contort his sleeping bag so as to avoid most of the drips we all slept well and awoke on Sunday to find the rain had stopped and the sun shone. A fifth club member had been due to join us Ch. Tech. Frank Pembridge of Market Drayton, but he had had an accident whilst driving through the night, his windscreen had shattered and he'd finished his night wearing wet suit jacket and face mask driving around in pouring rain looking for a garage that could supply him with a new windscreen.

After waiting two hours for our missing member, three of us set off once more, myself, Cpl. Jock Murray of Montrose and SAC Tony Gratton of Gainsborough. Our fourth member was feeling unwell and remained in the tent. We all had one dive each and then the engine cut. Tools and dry rag were taken out from their sealed can, the engine ignition system dried off, then slap! - a wave broke over the boat. The current was dragging the anchor on the sandy/muddy bottom 80 feet below and with two men on the oars no progress was made. The second and last sealed can was opened and this time before the engine was dried off a further wave broke over the boat. The sea was becoming rough and the current was pulling us towards St. David's Head.

Then we were out from the protection of the cliffs and the wind - later we were told it was a force 8 gale - drove our inflatable out to sea. Naturally we all wore life jackets and so there was no serious danger to life and furthermore we were still within swimming distance of the shore - provided the life jackets were not inflated, as if they had been the wearer would have blown away in a similar fashion to our inflatable. To swim ashore would have meant abandoning our inflatable and its contents and so I decided to aim at a sandy beach that could be seen in the distance. Three hours later when even Quells had failed to provide immunity from "Mal de Mer" we were within striking range of a small sandy strip, rock studded at the base of a 200 foot cliff. We rowed as hard as we could and eventually rollers drove us up on the beach sinking the boat and throwing us and most of our equipment out.

There was a mad scramble for fifteen minutes collecting gear from the surf and everything was saved including the camera and exposure meter - the first time I'd taken one on an inflatable in six years! All our gear including a large sack of scallops, was now carried through water at about waist deep and thanks to the assistance of a number of holiday-makers was carried up a cliff path to where our vehicle would be able to pick us up. One holiday-maker was kind enough to give us a lift back to our vehicle at Martins Haven. It had been quite a day and made the point that it is not wise to venture off shore in an inflatable unless a second boat is available so as to provide mutual support. Also it is not wise to carry a camera, unless it be an underwater one. We slept well on Sunday night.

When we awoke on Monday morning we were all cold, sore and stiff, a shore dive was contemplated but all enthusiasm had waned, the sea was rough, wind strong, so, without more ado camp was struck and we set off on the 340 miles journey home, swearing never to dive again. However before the journey was completed the next trip was being planned! Lightning cannot strike the same place twice!! - or can it?

Flt. Lt. D. A. J. Taylor, OIC Scampton Sub Aqua Club

GENERAL NOTES

ANTHROPOPHAGOUS MOLLUSCA

"Avery Clavering, a professor of zoology at a California university, heard of the giant snails of Kuwa in a footnote of a book on molluscs. His sabbatical had been coming up in three months when he read the few lines:

It is said by Matusas Islands natives that snails even larger than this exist on the uninhabited island of Kuwa, twenty-five miles distant from the Matusas. The Matusans claim that these snails have a shell diameter of twenty feet and that they are man-eating. Dr. Wm. J. Stead, now living in the Matusas, visited Kuwa in 1949 without finding any snails at all, but the legend persists."

"The snail made a splash as it entered the sea. To drown or to be eaten alive? the professor wondered. He was waist-deep when he stumbled, waist-deep but head under when the snail crashed down upon him, and he realized as the thousands of pairs of teeth began to gnaw at his back that his fate was both to drown and to be chewed to death."

The above are the first and last paragraphs of "The Quest for Blank claveringi," by Patricia Highsmith, from "The Sixth Fontana Book of Great Horror Stories", edited by Mary Danby (Collins, Fontana Books, 1971). The cover picture, which represents the climax of the encounter, shows what appears to be an Achatina. Comparison is invited with The Conchologists' Newsletter, No. 25, p.51 (June 1968).

A. E. Ellis

DR. R. HAMOND has almost finished compiling a very comprehensive work on the marine and brackish water Mollusca of Norfolk, which although not yet formally accepted is likely to be published in the not too distant future. Meanwhile Dr. Hamond is attempting to collate every record from the Area (based on Census Area 12, with the addition of half a degree of longitude along its eastern edge) and he would be extremely glad of any last-minute records and reports. A small number have been added from the Marine Census records as well as those held by Dr. Kerney, and it is hoped that members with any specimens or collecting notes from C.A. 12, will contact Dr. Hamond (c/o. Stella M. Turk, [REDACTED], Reskadinnick, Camborne, Cornwall).

N.B. The coastal extent of C.A. 12 includes Yorkshire from Bridlington Bay; Lincolnshire; Norfolk; Suffolk, to Lowestoft.

Stella M. Turk

Members will be pleased to know that Prof. A. Graham's illustrated key 'British prosobranchs and other operculate molluscs' has now been published: it is No. 2 of the Linnean Society's Synopses of the British Fauna (New Series) and is available from the Academic Press, 24-28 Oval Road, London, N.W.1. for £1.30, plus postage and packing at 10p.

M. DEAS of [REDACTED], Plymstock, Plymouth, Devon, is interested in improving his collection of Cypraea and Conus, and would like to contact anyone with some of the more uncommon of these species to exchange. He has to offer some fine Cypraea including Teulerei, Tibia fuscis, Stellaria solaris, Mitra stainforthii and many others. He would also like to hear from members interested in diving.

C. H. WILLIAMSON, [REDACTED], Polperro, Cornwall, [REDACTED], owner of the 'House of Shells Museum of Shellcraft' at Buckfast, Devon, wishes to gain information on, and to locate objects of outstanding merit in the field of shellcraft.

SHELLS FOR SALE. Browse in baskets full of shells from all parts of the world - at Eaton's Shell Shop, 16 Manette Street, off Charing Cross Road, London, W1V 5LB (01-437 9391).

SUBSCRIPTIONS

Subscriptions were due on 1st. January 1972 and it will be much appreciated if members who have not already paid, will please do so now, promptly, in order to avoid waste of funds on repeated reminders.

Hon. Treasurer

FAMILY MEMBERSHIP

Please note that as from April 1972 Family Membership has been extended to cover any member of a family living at the same address as the main member, instead of only applying to husband and wife. Only one copy of all literature will be sent to Family Members and the Annual Subscription will be £4.00. Those wishing to transfer to this class of Membership should notify the Hon. Treasurer.

THE JOURNAL OF CONCHOLOGY, VOL. 27, Pt. 4

The response to our request in the last Newsletter was very good, but a few more copies are still needed to clear the remainder of the outstanding orders. Will any member willing to part with their copy of Vol. 27, Pt. 4 of the Journal, please send as soon as possible to: Mrs. C. Pain, [REDACTED], Millbank, London, [REDACTED]. The Hon. Treasurer, Mrs. M. Fogan, will willingly pay the amount of £2 per copy to the member concerned.

COLLINS THE PUBLISHERS are having a promotion campaign to encourage people to read more of their natural history books and to assist the Conservation Movement by increasing awareness and understanding of wildlife and the environment. Full details of free posters, competitions, etc., involved in this campaign can be obtained from: Eric Major, Publicity Manager, Collins, Publishers, 14 St. James's Place, London, S.W.1.

PLEASE NOTE THAT THE HON. SECRETARY WILL NOT BE ABLE TO DEAL WITH ANY CORRESPONDENCE RECEIVED DURING AUGUST.

Produced by THE CONCHOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND

DESCRIPTION OF SOME FINDING-SPOTS OF GEOMALACUS MACULOSUS IN S. W. IRELAND

During our botanical study-tour through S. W. Ireland in the months of July and August 1971, we looked out for Geomalacus maculosus, the famous Kerry Slug, repeatedly. For some weeks we had looked for it without success and had partially reconciled ourselves to the idea that we should not catch sight of the animal.

Stelfox (1911) wrote: "The Kerry Slug may be collected in large numbers during damp weather on lichen-covered rocks in some portions of West Cork and South Kerry in dry weather it is impossible to find it in its usual habitats."

On 31 July however, it appeared that we were on the right spot with the right weather. It was rainy and drizzling showers were relieved by sudden sunbursts: bundles of light, which crossed the landscape like spotlights. A weather and light-picture which anybody who has ever been in Ireland will certainly be able to remember. We were at the banks of Lough Derriana (River Inny valley, south-west of Killarney) and we took shelter in our car from a sharp shower. Shortly after, during a sunny intermezzo, our attention was drawn by a beech-wood up the slope. After looking for some time among the dead branches and moss, we found at the bottom of a fallen tree a two centimetre long speckled slug. No doubt it represented the species we had already searched for. When some time later on, the rain again increased in intensity, we suddenly saw it everywhere on the smooth trunks of the beeches, creeping about with Lehmannia marginata. With this latter species it crept as high as five metres up the trees.

Dr. R. Scharff (Stelfox, 1911) discovered the species near Glengariff in the mossy forks of trees, where it had retired during dry weather. Here we saw the same habit. We felt with our hands in the forks of the trees, from which it appeared, that these, more or less, form a basin, in which water remains standing. While searching, it soon appeared that Geomalacus maculosus stayed especially at the edge of the wood, where the trunks of the trees were less strongly overgrown with mosses than in the middle of the wood. Here were more lichens on the bark, as was also the case with rocks. G. maculosus is said to feed with these lichens.

As soon as the sun appeared again from behind the rainy clouds, the slugs disappeared under the moss. Within ten minutes we could no longer find a single one.

Next time we perceived G. maculosus was, it is true, also in a wood, but under somewhat different circumstances, because it crept here over the mossy soil, but especially over the lichen-grown rocks. The wood in question lies on a slope, west of the spot where Gaerhameen river flows into Upper Lake at Killarney. After a night with very much rain, which had made the water-level of the Upper Lake rise for more than half a metre, we discovered the slug in an oak/holly wood. We had fled into the wood in order to take shelter from a sharp shower. At the edge the wood was very open and light and the bottom was studded with rocks. At this spot too the hiding-place and the feeding-ground of G. maculosus were close together. Under the same circumstances we discovered the slug at the other side of the Upper Lake at the edge of an oak/holly wood (Queen's cottage) at Ladies' View. That day too it rained and the wood had changed into a moist, dripping cathedral of old oaks. Early in the morning of the same day we had already found the slug alongside the road from Killarney to Kenmare at Moll's Gap, on a wall built up with boulders amidst the blanket bog.

This wall was overgrown with mosses, lichens, Saxifraga umbrosa, Saxifraga stellaris, Sedum album and some grasses.

Outside the woods at Upper Lake, we have also found G. maculosus on the rocks at the bank of that lake. This find showed more resemblance to the last finding-spot at Lough Nagarriva.

Lough Nagarriva, in the hills above Glengariff, we visited because it is the locus typicus of Pisidium hibernicum and Lymnaea praetenuis. It was not raining that day, but up in the hills (1500 ft.) it was very foggy and this probably offered sufficient air-humidity to make the slug creep about actively on the rocks around the lake. We saw here tens of adult specimens. At the other spots G. maculosus was always accompanied by L. marginata, but here by Arion ater.

Looking back upon the above mentioned finding-spots and the surroundings in which we found the Kerry Slug, this slug neither seems to us a specially woodland species, nor a species which specially lives on rocks. The striking similarity between all the finding-spots was the immediate presence of a moist hiding-place and a sufficiently large feeding-area. These spots were found where an extreme environment with lichens (a hard substrate exposed on the windward-side, as with trees and rocks) is quickly and regularly relieved by a thicker overgrowth, or by rock-chasms, where in dry weather it long remains moist.

As for woods this environment is better represented at the edges than in the middle, because the edges are more under the influence of the wind and therefore present a more favourable place for lichens. In the Atlantic climate especially trees with rough trunks in the middle of the wood are completely covered with mosses and ferns.

Striking is the air-humidity, which is necessary to make G. maculosus active. Whenever we found the slug, it was always raining and mostly had rained already for a considerable time before. This will also explain its occurrence at those places alongside the Atlantic Ocean, where up to 3000 mm. rain a year falls.

Boycott and Oldham (1930) mention for food the lichen Parmelia and the moss Rhacomitrium, plus algae, fragments of which have been detected in the slugs' faeces. They also refer to Geomalacus actually feeding "on the thin organic film which covers them (the rocks), the whitish parts of which are composed of the lichen Pertusaria areolata, the brown areas of the lichen Bacidia umbrina, the latter in one sample being mixed with the alga Stigonema. On these almost bare rocks, and especially on the Pertusaria, the slugs make conspicuous feeding tracks." The authors conclude that G. maculosus probably eats any lichen and mosses which happen to be available.

On the rocks at Lough Nagarriva (Glengariff) G. maculosus especially crept about on Cladonia cervicornis. On the beech trees at Lough Derriana we found the lichens: Nephroma laevigatum, Pannaria rubiginosa and Pertusaria leioplaca.

References

- Boycott, A.E. & Oldham, C., 1930. The food of Geomalacus maculosus. J. Conch. 19:36.
Stelfox, A.W., 1911. List of the land and freshwater molluscs of Ireland. Proc. Roy. Irish Acad. 29(B):65-164.
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Jan Albert Zoer and George Visser

CONSERVATION OF MARINE LIFE

Whether or not one believes that the phenomenal increase of humans spells disaster, it is quite certain that increased population demands rationing of resources of all kinds, and as we explore and exploit more of the underwater world as well as using the sea as a sink for various waste products, we will be forced to make the same choice of uses as we are becoming accustomed to do on land.

A Working Party has been organised by the Natural Environment Research Council (as a result of both Government and public concern) to investigate the scale of changes in marine life of the sub-littoral zone and, if these are serious, to consider whether it is feasible to apply conservation measures. The accompanying questionnaire being circulated by the N.E.R.C., is designed to establish whether or not a need exists at this present time. 'Deleterious effects' resulting from human activities are difficult to prove in the sea, for all too little is known about 'natural' yearly and seasonal fluctuations, breeding movements, predator/prey balance and the differing effects of 'culling' on various species, any of which factors we can observe so much more readily and consistently on land.

Divers are obviously the people who are best able to record changes on the sea bed of any area which they visit over a period of time, although as has been pointed out they avoid places where there is pollution by such media as sewage, china clay or coal waste, if for no other reason, because of the poor visibility. Many of us fancy that the marine environment must inevitably be deteriorating, but facts rather than fancies are essential if any assessment of deleterious effect is to be made, with a view to protecting certain places from direct interference by collecting or other despoliation. Help can be given by submitting even general impressions made with due care and accuracy. Systematic observations on one or more species are even more valuable, for in this way a comparative basis can be established against which future reports can be judged.

The Conchological Society's marine recording scheme, now being expanded to include 10 km. square recording in conjunction with the Biological Records Centre will provide valuable data for present and future appraisals of environmental change. Even although this particular investigation is concerned with conditions off-shore, the work of recorders between tide-marks is just as important for future assessments. Other relevant schemes already in operation are for seaweeds, echinoderms and sea-slaters (isopods), all of which are being intensively recorded in these comparatively small unit squares, with special provision for quantitative notes on the standard marine card; these cards are eventually fed into the computer for map making, and ease in retrieving the accumulated data.

Anyone in possession of evidence of the kind detailed in the questionnaire should write to Dr. B. Forman, The Nature Conservancy, 19 Belgrave Square, London, SW1X 8PY, whilst those wishing to participate in any of the marine recording schemes (other than molluscs) should contact the Biological Records Centre, Nature Conservancy, Monks Wood, Abbots Ripton, Hunts. PE17 2LS: for marine molluscs write to the present Recorder, Stella M. Turk.

S.M.T.

QUESTIONNAIRE

We are aware that general impressions of scarcity or decline in numbers of an organism are very difficult to confirm except by detailed studies conducted over a substantial period of time. It is also extremely difficult to distinguish natural fluctuations from man-induced changes.

It is quite likely that you will only be able to give a general impression but this will be helpful, especially if the information could be given under the following headings:-

1. Species or common name to which data relates.
2. Name and status of observer (i.e. scientist, fisherman, diver, etc.)
3. Area to which observations apply.
4. Period covered by observations.
5. Frequency of observations.
6. Changes observed and time of onset of change.
7. Qualitative/Quantitative nature of data and method of observation, i.e.

- a) changes in counts or frequencies of contacts per unit area over period covered;
 - &/or b) changes in counts or frequencies of contacts per unit line of searching;
 - &/or c) progressive decline in number of species over period covered;
 - &/or d) progressive increase in time taken to collect a standard number of specimens;
 - &/or e) evidence of local souvenir trade increase or decrease due to decline of supply;
 - &/or f) other changes observed.
8. Suggested cause(s) of change.
9. Any other remarks.

NOTES ON THE MOLLUSCA AT LONSDALE ROAD RESERVOIR, LONDON

The disused reservoir at the Lonsdale Road site (TQ218774) is on the Barnes bank of the Thames, just upstream from Hammersmith Bridge; it is one of several which formerly occupied the narrow area between Lonsdale Road and the river. In its original form, completed in 1838, the basin was much smaller and filled with water by gravity flow from the Thames. In 1855 the intake was removed upstream to the Hampton works, about seven miles away, to improve quality and water was pumped through a main to the reservoir. In 1861 and again in 1879-80 further works were undertaken to increase its size to about 17 acres and a breast wall of limestone masonry was added to the rim to prevent erosion of the cement lining by wash.

The reservoir functioned both as a subsidence and storage basin, cleaning raw river water by acting as a sediment trap - the position of inlet and take-off pipes allowing a considerable volume of mud to accumulate. There is no evidence that the reservoir was cleaned out at any time after the major alterations of 1880, and the present thickness of mud (ca. 5 feet at the southern end) would seem to represent that interval of time. However, after 1945 and until withdrawal of the reservoir from service in 1960, water pumped from Hampton was passed through filter beds of sand; the greater part of the deposit probably therefore representing the shorter period of some sixty-five years. On this basis, a rough calculation suggests that an average of more than a thousand tons of saturated muds would have been deposited annually, providing a rather unencouraging situation for macrophyte growth and, with regard to the steeply shelving sides, not entirely satisfactory for Mollusca.

Since 1960 the mud surface has remained covered with a shallow depth of water and in more recent years this has varied in depth at different points from a few inches to about three or four feet, forming a shallow eutrophic lake. Substantial swards of Elodea canadensis are now evident and areas of mud at each end are developing hydrosere successions. More recently, unfortunately, toxic materials dumped in the water killed most organisms, and, when first visited by the writer in 1971, the only live aquatic mollusc found was Lymnaea peregra.

The central mud deposit is encased, as it were, in an outer jacket of coarse molluscan debris, formed largely by colonisation of the sides by Dreissena polymorpha and extending perhaps 2 to 3 feet out into the mud and as far down as the arm can reach. Farther out infrequent valves of Unio spp. and Anodonta occur, associated with much fine and broken shell debris. In addition, a series of muddy "tide-marks" or mud rinds occur above the present water level, on the concrete inner slope. These are accumulations founded on other colonies of Dreissena, which had a chance to become established during temporary halts in the changing water levels. Much of the associated mud would no doubt be deposited by the active filtering process of Dreissena and subsequent accumulation of faecal pellets.

The remainder of the site consists of some five acres of marginal ground, well shaded along the western side by mature black poplars and a line of shrubs.

The banks around the reservoir, particularly near the road, the breast wall and inner slopes, provide well-drained conditions for a substantial population of xerophiles.

Samples of mud, soil, leaf-litter and turves were sorted through sieves and some casual collection on the drier slopes also undertaken during 1971-72. Slugs were not collected, but the following species of other Mollusca were recorded:

<u>Theodoxus fluviatilis</u> (L.)	<u>Helix aspersa</u> (Müller)
<u>Viviparus viviparus</u> (L.)	<u>Hygromia striolata</u> (C. Pfeiffer)
<u>Valvata piscinalis</u> (Müller)	<u>Monacha cantiana</u> (Montagu)
<u>Bithynia tentaculata</u> (L.)	<u>Helicella caperata</u> (Montagu)
<u>Lymnaea truncatula</u> (Müller)	<u>H. gigaxii</u> (L. Pfeiffer)
<u>L. auricularia</u> (L.)	<u>Vitrea crystallina</u> (Müller)
<u>L. peregra</u> (Müller)	<u>Oxychilus draparnaudi</u> (Beck)
<u>Planorbis albus</u> Müller	<u>O. cellarius</u> (Müller)
<u>P. crista</u> (L.)	<u>Retinella nitidula</u> (Draparnaud)
<u>Segmentina complanata</u> (L.)	<u>Unio pictorum</u> (L.)
<u>Ancylus fluviatilis</u> Müller	<u>U. tumidus</u> Philipsson
<u>Cochlicopa lubrica</u> (Müller)	<u>Anodonta anatina</u> (L.)
<u>Vertigo pygmaea</u> (Draparnaud)	<u>Pisidium amnicum</u> (Müller)
<u>Lauria cylindracea</u> (da Costa)	<u>P. casertanum</u> (Poli)
<u>Vallonia costata</u> (Müller)	<u>P. subtruncatum</u> (Malm)
<u>V. excentrica</u> Sterki	<u>P. henslowanum</u> (Sheppard)
<u>Cepaea hortensis</u> (Müller)	<u>P. moitessierianum</u> Paladilhe
	<u>Dreissena polymorpha</u> (Pallas)

Note: all the aquatic species were dead shells, except Lymnaea peregra.

Some of the aquatic shells (L. peregra, P. amnicum) were encrusted with tufa. Theodoxus and Ancylus occur as transported fragments in the top twelve inches of the central mud, though these two apparently never became established in the reservoir. In terms of abundance, leaving aside Dreissena polymorpha, which outnumbers every other species, B. tentaculata and V. piscinalis appear to rank highest, with P. albus and L. peregra next. L. truncatula, L. auricularia, P. crista and S. complanata occur very sparsely in the mud sample (from one to six individuals). The mussels are common but not very numerous.

Of the terrestrial species, a subjective estimate of abundance ranks them as follows: H. striolata, R. nitidula, C. hortensis, C. lubrica, V. costata, V. excentrica, M. cantiana, H. caperata, O. draparnaudi, the rest less common. L. cylindracea, V. pygmaea, O. cellarius and H. gigaxii are represented by single or few specimens in the samples taken.

Thanks are tendered to Dr. M. P. Kerney for his kind assistance.

F. G. Berry (The Nature Conservancy)

VIVIPARUS VIVIPARUS (L.) IN THE FENLAND

The common and widely distributed species of Viviparus in East Anglia is V. contectus (Millet). V. viviparus had not been reported from vice-county 29 (Cambridge) until Dr. L. Lloyd-Evans found it in April 1967 in the R. Lark 2 miles S of Littleport (J. Conch., 26: 345).

In the course of 10-km square mapping of the Fenland Basin we have found V. viviparus to be present in the following contiguous squares: 52/57, 58, 59, 68, 69, and 53/50. It is common in the R. Great Ouse from about 1 mile S of Ely to Denver Sluice (Norfolk), and in the R. Little Ouse and R. Lark up to 1 mile or so from their confluences with the Great Ouse. V. contectus is known to be present in all these squares except 52/59 and 53/50, but we have not noticed the two species living together. The reasons for the different geographical distributions of the two species in Britain is not known; their ecological requirements appear to be very similar.

It is interesting to speculate about the origin of this pocket of V. viviparus distribution in V. contectus country. The area around Cambridge has been well worked in the past, and this recent discovery might point to a

recent introduction. However, the attraction of Wicken Fen may have prevented workers going further north. In support of this we can say that the large mussels Unio pictorum and U. tumidus are abundant in the Norfolk part of the Great Ouse, but had not been reported for vice-county 28. We would favour the idea that V. viviparus has also been overlooked.

Martin and Susan Bishop

LAURIA ANGLICA (WOOD) IN CAITHNESS (V.C. 109)

Lauria anglica has only been found in two Caithness localities so far, the first find being made at the Reissigill Burn, Lybster (ND242352) in July 1971, and the second at Thurso riverside (ND183675) in October 1971. There follows a description of the habitats and some general comments on both finds.

Reissigill Burn, Lybster, produced only one small but typical specimen of Lauria anglica. This specimen was taken at the foot of a rockface about halfway up the steep grassy wall of the gorge through which this burn flows. Further intense searching of the sides and above this rockface failed to produce any more Lauria anglica, but in all probability the specimen found had fallen or been dislodged from somewhere on the rockface, which being damp with patches of moss appeared to be a habitat typical of Lauria anglica.

At Thurso riverside there are two quite large colonies of this species, both lying within 30 metres of one another in a line running from north to south, and divided by a footpath which skirts the west bank of the river. The northern colony can be found on stones at the foot of a moderately steep grassy brae, which has quite a number of trees and shrubs growing out from it. The stones are in very damp conditions, and cover an area of about two square metres. Moss is present on all of the stones, and Lauria anglica appears to feed on this moss to the exclusion of all other plant life present during autumn and early winter. To the south, over the footpath and midway between the riverbank and an obsolete ditch, lies a considerable area of marshy ground, which has a great profusion of common marsh plants growing upon it. Well out towards the middle grows a patch of Iris pseudacorus, better known as the yellow flag. During late autumn when this plant is in decay, and the leaves fall to the ground, Lauria anglica appears on the leaves just short of the withering brown parts on the underside, and apparently commences to feed.

From evidence so far found it would appear that Lauria anglica will be common in Caithness once areas similar to the Thurso riverside have been searched in late autumn or early winter, and that this species is not so rare as was once thought in the north of Scotland.

R. G. Meiklejohn

SIXTH PROGRESS REPORT ON MARINE CENSUS WORK

Confucius wrote that the first step in reforming the state is to give words their exact meaning. This realisation that exactitude is of prime importance in any scheme, underlines the reasons why the Recorder has spent so many long months compiling a Concordance to Winckworth's check list of marine molluscs, correlating his names with some of the vast number of changes in current use at home and abroad. Taxonomic studies should not be under-rated! Two past Marine Recorders - Winckworth and more recently David Heppell - retired from the scene of recording in order to concentrate on a rational stable check list. The present Recorder might be considered to have semi-retired for a kind of sabbatical year to prepare this Concordance and the Field Card, based on Winckworth, in alphabetical sequence within the main groups. The Card bears over 500 species, and the Concordance over 600, all of which have been coded for computer purposes by the Biological Records Centre; those not on the Field Card can be added as appropriate under 'additional species'. As this is being written - the first week in July - the Cards are expected from the printers very soon, whilst the Concordance is in its final stages of pre-publication preparation. The B.R.C.'s Individual Record Card (adapted for marine recording by the B.R.C. and the Marine Biological Association in consultation with the Conchological Society) is already printed, and at present in the press is a comprehensive instruction booklet, relating to

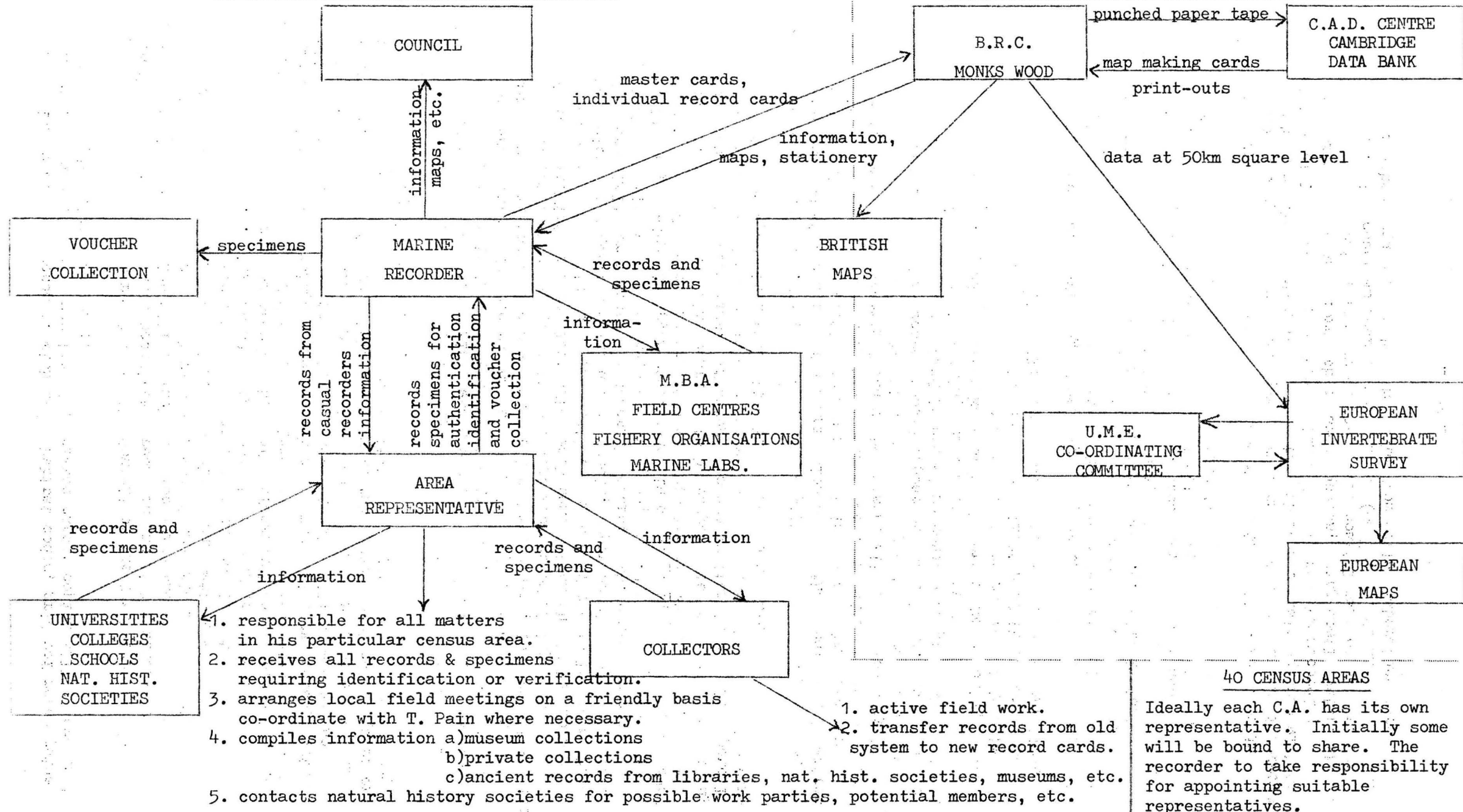
terrestrial and marine schemes, with maps, habitat codes, grid reference guide with conversion tables and examples of completed cards; copies will be available to those helping with the scheme.

In February of the current year, the Council of the Conchological Society dissolved the Marine Census Subcommittee, replacing it with a wider-based Area Representative scheme which will do much to democratize the system. For each and every Area it is planned to have one or more Representatives who will be responsible for the general organisation of all Census matters within their Area and the gathering and co-ordination of records on the 10-kilometre square basis. The work of each A.R. will depend on the present state of recording, how many helpers can be mustered, whether the help of professional marine biologists is available, the existence of recently published lists, the tradition of Conchological Society Field Meetings, Museum and local Natural History Society participation and so on, but the exact method of co-ordination will depend on the initiative of the individual Representative. Just as they are responsible for a whole Area, so they will seek helpers who will take over a particular square or part of a square, sampling the various habitats. The following principles may help in presenting the priorities.

- 1) Preparation of a Master List for the Census Area is the first and most important step, and the Marine Recorder will help with this as necessary. For many Areas this is already done or partly done, and further reliable published sources for records can be given in many instances. A Field Card can be used without, of course, any grid reference data, to mark all species present, priority being given to post-1950 records of living specimens. There is sufficient space left after each name (which should be crossed through to indicate 'species present') to add one of the following symbols to indicate category: A = living, B = shell, empty or with animal remains, C = worn shells or valves, D = doubtful record; 19th. century records should be written in lower case (a, b, c, d), 1900-1950 in upper case (A, B, C, D) and post-1950 in upper case, underlined (A, B, C, D). R can be added to those records which are accepted as authentic for the Area and, as at present, the Recorder will continue to be responsible for acceptance of any additions to the Area list. If categories are written in soft lead pencil they can be erased and replaced by upgraded records, as these are discovered. If no category is marked, it will be assumed unknown.
- 2) Preparation of 10-km. Master Cards. These will carry the 10-km. square reference and will consist of a compilation of all the locality and habitat cards submitted for a particular square. It is these Master Cards from which the final maps are prepared at Monks Wood. As with the Master Cards for the Areas, each species found to be present will be followed by the relevant symbol to denote its 'highest' category and most recent occurrence (note that no doubtful records should appear on these 10-km. square Master Cards). Only when a Master Card is deemed reasonably complete should it be forwarded (in duplicate if willing scribes can be found) so that one can be sent to the B.R.C. and the other kept by the Recorder for checking against the proof copies of maps: a third copy should of course be retained by the Area Representative. As a basis for the compilation of these Cards, the contents of the Area files will be made available to the Representatives.
- 3) New Area records, re-finding of rare species, critical species and unusual habitat or behaviour data are some of the reasons for completing Individual Record Cards; these are very simple to use and carry a great deal of easily retrievable data. The Recorder (or in turn, the A.R.) will indicate when they should be used, although 'if in doubt, fill one out' is a good guide, since all these Individual Record Cards, once they have been duplicated at the B.R.C. will be returned to the Society's files where, kept in an orderly fashion, they will form part of the Society's permanent records.
- 4) Obviously most of the records will come from between tide-marks, or in shallow water, so the coastal squares will have the major number of records. Attention should be drawn to the fact that whereas certain squares with the minimum of land have been combined with adjacent ones for recording terrestrial fauna and flora, these same squares, being mostly water, should be recorded separately for our purposes; the coastal part of Scilly, for instance, will count as four separate units (00/80, 81, 90 and 91). Records from off-shore squares may be obtainable from marine laboratory surveys,

CONCHOLOGICAL SOCIETY

BIOLOGICAL RECORDS CENTRE



40 CENSUS AREAS

Ideally each C.A. has its own representative. Initially some will be bound to share. The recorder to take responsibility for appointing suitable representatives.

1. responsible for all matters in his particular census area.
2. receives all records & specimens requiring identification or verification.
3. arranges local field meetings on a friendly basis co-ordinate with T. Pain where necessary.
4. compiles information
 - a) museum collections
 - b) private collections
 - c) ancient records from libraries, nat. hist. societies, museums, etc.
5. contacts natural history societies for possible work parties, potential members, etc.

1. active field work.
2. transfer records from old system to new record cards.

divers, fishermen, and such special investigation as sea-bed research for oil, or material gathered for the International Geophysical Year.

- 5) In very few instances do the Area boundaries chance to finish on a 10-km. square line. All divided squares could be worked by neighbouring Area Representatives in a neighbourly manner, any duplication being resolved on a Single Master Card held by the person in whose 'territory' the larger part of the square lies. Failing this, some mutually acceptable compromise will no doubt be reached. In fixing the coastal junction point of two Areas, the latitude or longitude line of definition should be followed, e.g. Areas 15/16 divided at 'St. Alban's Head' is actually two miles east of St. Alban's Head at 2° 00' W., grid ref. 40/000770.
- 6) Owing to the remoteness and personal circumstances of the present Marine Recorder, it is impossible for her to attend recording conferences, but contact will be maintained by personal correspondence and the Newsletter. As a high proportion of Representatives are likely to attend the monthly meetings of the Society, they will doubtless be able to help one another to solve minor problems.

The following people have so far kindly accepted responsibility for particular Areas. The Recorder would be very glad to hear of others willing to help by becoming A.R., or helping appointed Representatives by recording in the field, or extracting literature records. A very large number of post-1950 records on the Society's special forms, carrying invaluable data, need transferring to the Field Cards, under the appropriate 10-km. squares, and whenever possible this would be ideally undertaken by an A.R. or someone immediately under their supervision. The accompanying flow sheet, prepared by our Secretary, Beryl Rands, with extra notes added by the B.R.C., will clarify the working of the scheme.

3, Orkney: A. Skene. 5, Moray Firth: D. W. McKay. 6, Aberdeen: D. W. McKay (caretaker). 7, Firth of Forth: Dr. Shelagh M. Smith. 11, Yorkshire: A. Norris. 12, Wash: J. E. Llewellyn Jones. 13, Thames: Dr. Joan Llewellyn Jones. 14, East Channel: Mrs. Celia Pain. 15, Wight: L. D. Harfield. 16, Portland: D. R. Seaward. 17, Channel Isles: R. N. Brehaut. 18, Plymouth (formerly West Channel): S. M. T. (caretaker). 19, Scilly Isles: S. M. T.. 20, North Cornwall: S. M. T. (caretaker). 22, Cardigan Bay: Mrs. Jean L. Charlish and Mrs. A. Margaret Brockbank. 24, Liverpool Bay: Mrs. N. F. McMillan. 26, Isle of Man: Dr. Larch Garrad. 29, Clyde and Argyll: Miss B. Rae. 30, Minch: Dr. Shelagh Smith (caretaker).

The Marine Biological Association are undertaking a pilot scheme for recording echinoderms, on similar lines to the marine mollusc Census, and to keep the schemes as uniform as possible they have adopted the Areas used by the Conchological Society with some slight modifications which we, in turn, have agreed to adopt so as to facilitate exchange of records between the M.B.A. and the Conch. Soc., and to prevent confusion at the B.R.C. The changes include additional Areas (which we will not be using, at least at present), extension of a few of our present Areas (nor, at present, will we 'fish' in these extensions) and some small changes to contour boundaries and names which we will be following. The new marine map will be reproduced in the B.R.C. instruction booklet, and an exact statement of the modifications to British Marine Area, 1961, will appear in the sheet of special instructions relating to marine molluscs.

This opportunity must be taken to record a particularly helpful relationship with Dr. Eve C. Southward, Dr. A. J. Southward and Mr. N. A. Holme of the M.B.A. in discussions relating to marine fauna recording. Above all we are indebted to Mr. J. Heath of the B.R.C. for his forbearance in the preparation of the Field Card which involved him in difficult negotiations at home and abroad, and in a great deal of re-coding and re-setting of the selected names.

Stella M. Turk

PUBLICATIONS RECEIVED

Poirieria, Vol. 6, part 2, Nov. 1971.

The Conchology Section of the Auckland Institute and Museum, New Zealand,

continue very regularly and courteously to send us a copy of their publication, which always contains a good deal of general interest. The number reviewed commences with a well-illustrated article on the occurrence of Frogshells (Bursidae) in New Zealand, unrecognised until 1965, when divers using new techniques, began to discover specimens of two species in rocky areas mostly round the Poor Knights Islands, but in other places in addition.

J. Marston, commenting on collecting at Mahia peninsula, deals with local marine species in contrast to an article on the Northland snails by Martin Walker which high-lights the difficulty in finding many of the known subspecies of Paryphanta; this appears to indicate that these magnificent but over-specialised snails are tending to succumb to their modern enemies. The author remarks that two subspecies are already probably beyond saving, and others are in a poor way.

In a short but extremely practical illustrated article on the Recent Arcidae of New Zealand, N. W. Gardner choses a family which has been very little written about in recent years (or indeed, before then), and the information is welcome; Harold Whiting's Shell Trip to New Caledonia reads like a stirring tale of the sea and although fine cowries were collected, the greatest thrill was a near-disaster on board ship in a full gale with shifting cargo and water in the fuel oil! E. N. Gardner lists and describes the winkles of New Zealand in a way which makes the article most useful for reference purposes; N. W. Gardner describes the results of marine collecting at Cape Maria van Diemen and Harold Whiting reviews deep water records from the Bay of Plenty. Book reviews and notices complete the issue.

Editors, N. & N. Gardner, [REDACTED], Birkenhead, Auckland 10, New Zealand.

T.E.C.

GENERAL NOTES

PUBLICATIONS NOTICE

A small number of copies of the following two books have been purchased by the Society for resale to members on a first-come first-served basis. Requests should be sent to Mr. T. E. Crowley, [REDACTED], Church Street, Bampton, Oxford [REDACTED].

1. 'The Cowries of Seychelles' by D. Slimming and A. Jarrett. Complete listing of the local Cypraeidae, excellently described and illustrated in colour. 43p post paid.
2. 'Seashells of Australia' by Walter Deas. Brief description followed by pages of coloured plates of the local shells, many of them involving the live animals in their natural surroundings most attractively photographed. £1.60 post paid.

A TEN-KILOMETRE SQUARE SURVEY OF GENETIC VARIATION IN MOLLUSCS

Many molluscs are known to show genetic variation in shell characters. Cepaea nemoralis and C. hortensis are the most variable British species. Molluscs have many advantages which make them almost uniquely suitable for the investigation of genes in populations, and because of these the ecological genetics of Cepaea has been widely studied. Many Conchological Society members will be aware of the work by Cain and Sheppard which showed that some woodland C. nemoralis populations differ from grassland populations by having a higher proportion of the more cryptic pink shells without bands, and that this difference is due to selective predation by thrushes. This has become a classical example of natural selection in action.

More recently, other patterns of genetic variation in Cepaea populations have been discovered. On chalk uplands in the south of England and elsewhere, large areas possess a high frequency of one variant, while in adjacent and apparently similar areas another form is equally common. The mechanisms under-

lying these patterns of genetic variation or "area effects" (which are not related to selective predation) are obscure. As rather similar patterns of geographical variation in gene frequency are found in populations of many other animals (including man), area effects have been the subject of a great deal of research. There are two main types of theory which attempt to explain their origin and maintenance. Some workers feel that natural selection by an environmental variable (probably microclimate) has a major effect on the distribution of variants, while others suggest that environmental selection is not generally important, and that other mechanisms must be involved.

One way of testing the importance of environmental selection would be to search for large-scale trends in gene frequency throughout a species' range which might be correlated with gross climatic differences. In collaboration with Dr. M. H. Williamson of the University of York I am trying to obtain all published and unpublished information on the frequency of shell colour and banding variants in natural populations of C. nemoralis and C. hortensis in an attempt to carry out such a survey. We already have data on about 500,000 C. nemoralis from most of Britain and Europe, and some associations of gene frequency with climate are becoming obvious. There are, however, large gaps in our information. We are attempting to fill some of these by making special collections, but more data is still needed. In Britain, our survey is based on the ten kilometre squares of the National Grid, which is, of course, the basis of the Conchological Society's survey of the British molluscs.

It would be very helpful to our research if conchologists collecting for the Conchological Society's survey would also note the frequency of colour and banding variants in Cepaea. It is very important that the snails should be collected at random - in other words, that there should be no selection by the collector of particular varieties - and that the scoring of the variants should conform to standard practice. I would be glad to provide information on methods of scoring, or to score and return any material sent to me. Samples should, if possible, be collected from a small sampling area, (less than about thirty yards in diameter) although this is not essential. It would also be valuable if samples could be accompanied by a full grid reference and a note on habitat type. Even a single snail from a particular locality would be useful, although larger samples would be particularly welcome.

Dr. D. T. Parkin of Nottingham University Genetics Department is carrying out a similar survey of Arianta arbustorum. He would be very grateful for any samples of this species. As scoring is more difficult than in Cepaea, Dr. Parkin would prefer to see the shells themselves rather than having scores sent to him.

Investigation of within-species variation will, we hope, be complementary to the Conchological Society's own research on the distribution of the species themselves. Any help which members of the Society could give would, of course, be very gratefully acknowledged.

Dr. J. S. Jones,
Department of Biology, Royal Free Hospital School of Medicine,
University of London, 8 Hunter Street, London, W.C.1.

CLAMS - A CULINARY NOTE

When I went to my fishmonger to buy scallops recently, he offered me clams. I was annoyed at being too late for the scallops but decided to try the clams which appeared to be Mercenaria mercenaria (L.). I was somewhat relieved when I was given a cardboard sheet with opening and cleaning instructions on one side and four recipes on the other. I tried the clams Mornay and was very pleased with the result. The only trouble was I hadn't bought enough clams! I think 6 to 8 per person is about right.

I quote the recipes for clams Mornay and clams Bienville:

CLAMS MORNAY

2 dozen clams, $\frac{1}{4}$ pint white wine, 3oz. grated cheese, butter, seasoning, Mornay sauce.

Remove clams from shells, drain and fry for two minutes in butter. Add wine and

poach slowly for 8 to 10 minutes with seasoning. Drain well and reduce liquor to $\frac{1}{4}$. Have ready sufficient Mornay sauce. Add the reduced cooking liquor to the sauce and correct seasoning. Place a little in the bottom of the shells and lay the well drained clams on it. Coat with more sauce, sprinkle with grated cheese, and brown lightly in the oven or under the grill. Garnish with sprigs of parsley and serve.

Mornay Sauce: 1 oz. butter, 1 oz. flour, seasoning, $\frac{1}{4}$ pint milk, 3 to 6 oz. grated cheese.

Heat the butter gently, remove from heat and cook gently for a few minutes without browning. Again remove from heat and gradually blend in the cold milk. Bring to the boil and cook, stirring until smooth. When the sauce has thickened stir in the grated cheese. A little mustard may be added.

CLAMS BIENVILLE

Broil 4 dozen clams in the half shell for a few minutes, cover each clam with Bienville sauce, and bake in a hot oven for a few minutes until the top is brown and crisp.

Bienville Sauce: 2 slices bacon, $\frac{1}{3}$ cup sliced mushrooms, 2 cloves garlic - chopped, 3 tablespoons butter, 1 quart hot milk, $\frac{2}{3}$ cup clam juice, $\frac{1}{3}$ cup sherry wine, $\frac{1}{3}$ cup lemon juice, $\frac{2}{3}$ cup flour, $\frac{1}{4}$ cup chopped parsley, $\frac{1}{3}$ lb. boiled shrimps - sliced, $\frac{1}{4}$ cup chopped shallots, dash egg colour.

Cut bacon into small pieces, fry until brown. Add mushrooms, garlic and shallots and cook for about 3 minutes. Add butter to pan, stir until melted and blend in flour. Cook slowly for 5 minutes then add hot milk and stir until thick and smooth. Add egg colouring, shrimps, clam juice, lemon juice, sherry wine and chopped parsley. Cook over low heat for 15 minutes.

My thanks are due to The Seasalter and Ham Oyster Fishery Company Limited of Whitstable, Kent who produced the clams and the recipe sheet and gave me permission to quote from the latter. Supplies of clams and leaflets may be obtained from their London warehouse in Pudding Lane, Monument Street, London, E.C.3.

Eleanor Fogan

THE MEDICINAL SLUG

"A few innocent charms and superstitious practices were all that remained of magic. Warts were still charmed away by binding a large black slug upon the wart for a night and a day. Then the sufferer would go by night to the nearest crossroads and, by flinging the slug over the left shoulder, hope to get rid of the wart."

Flora Thompson, Candleford Green (1943), reprinted in Lark Rise to Candleford, with an introduction by H. J. Massingham (Oxford University Press, 1945).

See C. W. Pettitt, "The Medicinal Snail", The Conchologists' Newsletter, No. 34 (September 1970).

from A. E. Ellis

OIL ON SHELLS

Shells collected from the beach are often coated with oil. Underneath the oil they may be in good enough condition to add to a collection, or identification may be difficult until they are cleaned. No doubt other people have their favourite methods, but of solvents readily obtainable in Britain, and least smelly and messy to use, I find SWARFEKA works best (obtained at ironmongers). If the shell is not too fragile, first scrape off as much oil as possible, then soak the shell in Swarfega for half an hour, and brush off in warm water. Several applications may be necessary.

Shelagh Smith

EXPERIMENTAL INTRODUCTIONS OF THE ROMAN SNAIL, HELIX POMATIA

I am studying the population ecology and conservation of Helix pomatia, and want to test the idea that there are sites which the species could occupy but for poor dispersive powers. For this purpose I have made experimental introductions into three chalk pits in Cambridgeshire.

The sites are at Heydon G.R. TL 432409, Ickleton TL 493426 and Stapleford TL 487529. A further report on the fate of these introductions will be made in due course. I would also be grateful for any information on previous introductions known personally by readers.

E. Pollard
Monks Wood Experimental Station (The Nature Conservancy)
Abbots Ripton, Huntingdon, PE17 2LS

THE JOURNAL OF CONCHOLOGY

We still urgently require a few more copies of Vol. 27, pt. 4 of the 'Journal' to complete the last outstanding orders. If anyone is willing to sell a copy back to the Society, please send to Mrs. C. Pain, [REDACTED], Millbank, London, [REDACTED]. The Treasurer, Mrs. M. Fogan, will gladly pay the sum of £2 per copy.

W. J. PAUL, [REDACTED], PAPAOWHAI, PAREMATA, NEW ZEALAND, is making a serious study of the 'Cardium' group of genera and is anxious to obtain specimens of various European species for comparison. Numerous species of New Zealand shells offered in exchange.

SHELLS FOR SALE

Browse in baskets full of shells from all parts of the world - at Eaton's Shell Shop, 16 Manette Street, off Charing Cross Road, London, W1V 5LB (01-437 9391).

MR. A. R. ALLCORN, [REDACTED], GARLINGE, NR. MARGATE, KENT, would be interested in collectors overseas and in Great Britain to correspond on Marine Mollusca and to exchange specimens. New collectors welcomed as well as those more advanced in this subject. Reference to my 40 years of collecting - awards have been won.

CONCHOLOGICAL SOCIETY COLLECTING WEEKEND IN MAJORCA, 1973

A field weekend is being arranged in the Mediterranean island of Majorca probably from January 5 - 8, 1973. The group would leave London on Friday and return the following Monday.

On a party booking the cost will be approximately £20 inclusive of flight, accommodation, airport taxes and coach travel on the island.

There will be opportunities for collecting both land and marine Mollusca.

Members who are interested are asked to write to Mr. B. W. Barrett immediately at: Environmental Science, College of Education, Locksway Road, Milton, Portsmouth, PO4 8JF (before the end of September). A deposit of £6 will be necessary as soon as a firm decision is reached which will include insurance against cancellation. The travel and accommodation are arranged through Clarksons.

Produced by THE CONCHOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND

ACHATINA FULICA BOWDICH - A MUCH TRAVELLED AFRICAN SNAIL

A very great deal has been written about the wanderings of the giant African snail Achatina (Lissachatina) fulica Bowdich, to give its full name, since it left its original home in East Africa. Examination of the literature shows all too plainly that man has been, and probably still is, the only effective disseminator of this snail which has become a major agricultural pest.

The island of Madagascar was apparently the first step in the giant snail's travels and it is by no means certain if it should be regarded as indigenous (autochthonous) to that island or not. At any rate Le Gentil (1779 Voyage dans les Mers de l'Inde etc. 2, 412) who visited Madagascar in 1761 found Achatina in several localities as the following account of the land shells he collected shows (translated from the French) "I found on the peninsula of Fort Dauphin some very beautiful snails shaped like Buccinum. They have a thin lip, are $3\frac{1}{2}$ " to 4" long and only about half that wide in the upper portions, consisting of 8 greyish-white whorls crossed by large fire-coloured bands. They live in thorny thickets of a kind very common at Fort Dauphin. These snails have 4 horns, when they retire into their house, they close the entrance with a rather dense tissue or kind of operculum made of a sticky fluid which they sometimes exude. This operculum is easily destroyed as it crumbles between the fingers. I found several of them alive closed up in this fashion. Breaking their operculum awoke them and they wandered about the room in which they were put for nearly a fortnight, after which they closed up again. After 4 months in this condition, they were still alive".

It is apparently established that A. fulica did not occur in Mauritius much before the year 1800 and the earliest account of its occurrence there is that by Bosc (1803 Nouveau Dict. Hist. Nat. 1, 134), translated from the French, "I have heard from an inhabitant of Mauritius that the wife of a governor of the island, ailing of the chest, had on doctor's orders fetched from Madagascar many of these snails (Achatina, referred in error to A. achatina by Bosc) since there were none in this colony. She died shortly after and the snails spread over the island, increasing to the extent of becoming a calamity. They have been hunted several times but they are even now very common".

From Mauritius A. fulica reached Réunion a few years later as Férussac (1821) saw specimens from there. In 1840 Dufo recorded it from the Seychelles and by 1880 it was in the Comoro Is. W. H. Benson carried specimens from Mauritius to India in April 1847 when he released some in gardens in Calcutta.

The spread of the giant snail in Southern Asia was however very slow. It was first reported from Ceylon in 1910 by E. E. Green who relates that living specimens had been released about 1900 by one Oliver Collett. By 1910 the snail had become very abundant. In 1922 it was observed in several localities in the Malay Peninsula, particularly in Singapore. It was introduced into Borneo about 1928, and in southern China near Amoy in 1931, and from there to Hong Kong about 1941. It had reached Siam by 1937-38 and had already been in the Dutch East Indies since at least 1921. It was brought from Singapore to Formosa in January 1932 and its further introduction and rearing were forbidden there in 1936. The snail was brought to Japan in 1925 and carried from thence to most of the Micronesian islands, where it is now extremely abundant. In Japan proper it did not become established, due to the unfavourable climatic conditions; it is however fairly common in Okinawa, in the Foo Choo Is. and this may possibly be its northernmost limit of dispersal (nearly 27°N.). It was carried from Formosa to the Philippines during the Japanese occupation (1943-1945). The earliest known occurrence in Hawaii was in 1936. In spite of drastic steps taken to control it the giant snail spread rapidly in Oahu, where it is now a serious

agricultural pest. The present Achatina colonies in Honolulu appear to be the progeny of two snails introduced from Formosa in 1936. Anonymous reports in "The Sphere" (1946) and the "Pacific Islands Monthly" (1948) mention its occurrence in New Guinea and the Bismark Archipelago.

The foregoing account of the spread of A. fulica from its original home in continental Africa and Madagascar to the islands of the Indian Ocean, India, the Orient, the East Indies and the Pacific Islands, is due entirely to transport by man, usually deliberate, occasionally accidental.

There are many references in literature to the wilful introduction of Achatina into uninfested areas, in fact the spread of A. fulica is little more than a series of one intentional introduction after another. Putch (1939) states for instance that "several peasants from the island (Singapore) who had never seen these snails came to Cherang Ruku and took some specimens for the purpose of breeding them, saying they looked very beautiful". Oriental people apparently introduce these snails for duck feed. Live specimens have at times been sent from Siam to Berlin, Kenya to London and from Kenya to the Congo. In another case specimens were sent from Singapore to Java in a container labelled "flower seeds", (van Leeuwen, 1932). Mead (1961) records a request from an Italian gentleman who asked how he might successfully introduce the giant snail into Italy "where food is very dear and scarce". It is hardly to be wondered at that this pest has spread and probably is still spreading!

Although these large snails certainly occur in very considerable numbers in many of the areas which they have successfully colonised, the American Press could not resist a little exaggeration, one paper claimed that "countless millions.....are gobbling up all the crops on the Hawaiian Islands" and "billions upon billions have already eaten every blade of grass and all the jungle growth on scores of Pacific Islands". One western U.S. paper in its magazine section published an account of a supposed infestation of Ceylon where "the pests appeared in vast numbers one summer morning and by nightfall several thousand acres of farmland were literally crawling with the creatures which ate everything in sight, including the thatched roofs of the farmhouses". The writer then abandoned all credibility and followed up with the statement that the "next day not a live snail could be found on the island" and that "it is guessed that the snails impelled by some strange urge, committed mass suicide in the sea (!!!)".

In spite of all this excessive exaggeration there is little doubt that A. fulica remains a major agricultural pest wherever it has become established and a variety of methods of control are being tried, both chemical and biological. The former include poisons of various sorts, but no molluscicide that is really satisfactory seems yet to have been produced. The latter relies on the introduction of various parasites and predators among which carnivorous snails such as the straptaxids of East Africa have been introduced into infected areas but again with little success, as these are small snails and attack on correspondingly small Achatina.

So far eradication measures of all types have been uniformly unsuccessful throughout the areas of the world invaded by A. fulica. Even the most intensive control programmes have in the long run only impeded the spread of the snail. It should be borne in mind that there is only one case where a major land snail pest has been eradicated by man and this was Theba pisana in La Jolla, California, and this took some 27 years to accomplish and cost around \$500,000! We have certainly not heard the last of A. fulica and its travels by any means!

T. Pain

INVESTIGATING THE FAUNA OF DEVON

Before provisional maps of the 10 km square distribution of molluscs in the British Isles are prepared for publication in 1974, it would be most helpful if the areas for which no records are available could be sampled. Recently we have visited a number of blank squares in England and have aimed to record each to a level of 20+ species before moving on. This necessarily means that the coverage is incomplete, and it is not up to the suggested level of 50-60% of estimated total species (M. P. Kerney, Conchologists' Newsletter No. 40, 243-245, 1972). The purpose of this note is to demonstrate that interesting and useful results

can be obtained even from low-level recording, in the hope that others will be encouraged to fill the gaps before the end of 1973.

The results described here were obtained in Devon on 10-11 June 1972 in the following fourteen 10 km squares of the British National Grid - 20/38, 48, 49; 21/30, 31, 40, 51, 60, 61, 71, 72, 81, 82; and 31/02. This area lies between Launceston, Cornwall in the west and Wiveliscombe, Somerset in the east. It includes parts of the basins of the Rivers Tamar, Torridge, Taw, Exe, and Tone. The area lies almost completely on the Carboniferous Culm formation which consists mainly of shales with bands of sandstone and grit, although there may be calcareous bands in places. The Devonian rocks of Exmoor lie to the north, and the granite intrusion of Dartmoor lies to the south. The land rises to 1000 ft, but mostly is at a level of around 500 ft. The mean July Maximum temperature is about 19°C and the January minimum 2°C, the rainfall being around 850-900 mm per annum.

The Culm formation produces non-calcareous soils, and the climax vegetation is sessile oakwood. Many fine woods still exist particularly in the valleys, and they often have a rich ground flora. Most of the remaining land is pasture, and there are occasional marshy patches. The hedges and road banks are moist and are often adorned with ferns in profusion. The areas around dilapidated farm buildings form ideal habitats for synanthropic molluscs. The rivers are generally swift and rocky, and there are very few ponds.

The following is a list of the molluscs which we recorded, arranged in order of the number of squares out of the fourteen in which each species was found. In each square we tried to choose a wood and a stream crossing, and also stopped at other places we passed if they looked interesting. Obviously we missed certain habitats in some squares because of our resolution to move on after approximately twenty species were recorded. There are doubtless some species which we tend to overlook, and there may thus be some subjective bias in the results.

Species likely to be present in every square:-

- 13 Cochlicopa lubrica (Müller) seg.
Retinella nitidula (Draparnaud)
Discus rotundatus (Müller)
- 12 Carychium tridentatum (Risso)
Clausilia bidentata (Ström)
Arion subfuscus (Draparnaud)
Oxychilus alliarius (Miller)
Agriolimax reticulatus (Müller) level 5+
- 11 Helix aspersa Müller
Cepaea nemoralis (Linnaeus)
- 10 Cepaea hortensis (Müller)
Hygromia hispida (Linnaeus)
Arion intermedius Normand
Arion hortensis Férussac
Euconulus fulvus (Müller)
- 9 Ancylus fluviatilis Müller
Acanthinula aculeata (Müller)

- 8 Lauria cylindracea (da Costa)
Hygromia striolata (C. Pfeiffer)
Vitrea crystallina (Müller) seg.
Oxychilus cellarius (Müller)
Pisidium personatum Malm level 20+

- 7 Potamopyrgus jenkinsi (Smith)
Succinea putris (Linnaeus)

- 6 Carychium minimum Müller seg.
Hygromia subrufescens (Miller)
Monacha granulata (Alder)
Arion circumscriptus Johnston seg.
Arion ater (Linnaeus) agg.
Limax maximus Linnaeus
Agriolimax caruanae Pollonera

Species probably present in every square, but possibly restricted or subject to collection failure:-

- 5 Pisidium subtruncatum Malm
- 4 Lymnaea peregra (Müller)
Vertigo pygmaea (Draparnaud)
Arianta arbustorum (Linnaeus)
Punctum pygmaeum (Draparnaud)
Retinella radiatula (Alder)
R. pura (Alder)
Zonitoides excavatus (Alder)
Vitrina pellucida (Müller)
Pisidium casertanum (Poli) level 40+

- 3 Lymnaea truncatula (Müller)
Cochlicopa lubricella (Stabile)
Columella edentula (Draparnaud) agg.
Vitrea contracta (Westerlund)
Pisidium nitidum Jenyns

Species probably not present in every square:-

- 2 Azeca goodalli (Férussac)
Agriolimax laevis (Müller)
- 1 Valvata piscinalis (Müller)
Planorbis leucostoma Millet
P. crista (Linnaeus)
P. contortus (Linnaeus)
Succinea pfeifferi Rossmässler
Vertigo substriata (Jeffreys)

Ena obscura (Müller)
Marpessa laminata (Montagu)
Helicella caperata (Montagu)
Arion silvaticus Lohmander
A. lusitanicus Mabilie
Oxychilus draparnaldi (Beck)
O. helveticus (Blum)
Zonitoides nitidus (Müller)
Milax budapestensis (Hazay)
Sphaerium corneum (Linnaeus)
Pisidium milium Held.

level 60+

(The numbers refer to the frequency of the species in the 10 km squares. The total number of species recorded in the area was 65.)

The faunal list implies that each of these squares could easily be recorded to the level of 40+, however a very intensive search would be necessary to record a square to the level of 60+. It seems safe to extend this generalisation to the whole of the Culm area of Devon and North Cornwall. There are up to twenty other species which could occur in the area.

We thank Dr. M. P. Kerney and Mr. A. E. Ellis for some of the identifications.

Martin and Susan Bishop

MASS MORTALITY OF DONAX VITTATUS (DA COSTA) AT SANDEND BAY, BANFFSHIRE

Sandend Bay is a deeply indented sandy bay on the southern shore of the Moray Firth. It has a rather barren littoral zone with practically no bivalve fauna, but apparently has an extensive sublittoral bivalve fauna with populations of Donax vittatus, Mactra corallina and Ensis sp. which can be seen in small numbers washed up on the beach after winter gales. Dead shells of Donax vittatus make up the major part of the shell drift to be found on the beach.

On 28 and 29 July 1972 large numbers of live Donax vittatus were observed stranded on the beach around H.W.M. and during the next few days the lateral drift on the beach concentrated these shells at the western end of the beach until by 4 August an area of the beach 30 yards long and 5 yards wide was almost totally covered with dead or dying Donax, an estimated mortality of several million individuals. It was thought that observations on the stranded Donax and on the conditions etc. prevailing at the time could provide a clue to the stranding of such large numbers of animals of a species.

All the stranded individuals appeared to be adults, the length range of 155 individuals which were measured was 24 to 29 mm. with a mean length of 24.8 mm., Tebble (1966) gives maximum length of Donax vittatus as 38 mm. The newly-stranded individuals appeared to be quite healthy and when immersed in sea water or placed on wet sand would perform vigorous digging movements. The stranded Donax each had a growth of brown filamentous algae 6 to 8 cms long attached to the posterior part of the shell (Fig. 1a - p. 285) and this seemed to prevent the Donax burying themselves in the sand, as the animals seemed unable to raise their shells to a vertical position to complete the digging sequence. If however this growth of algae was removed the animals successfully buried themselves in the sand. After the Donax had been on the beach for several tides the algal growths on the shells had become intertwined and large mats of Donax and algae (containing large numbers of individuals) were to be found on the beach around H.W.M.

At the time of the stranding of the Donax, 27 and 28 July, a series of very low tides was accompanied by a period of N to NE wind and a consequent heavy northerly ground swell. The hypothesis was that the increased turbulence due to these factors had caused the removal of the Donax, a normally shallow burrower (Fig. 1b) and their stranding high up on the beach and the following observations

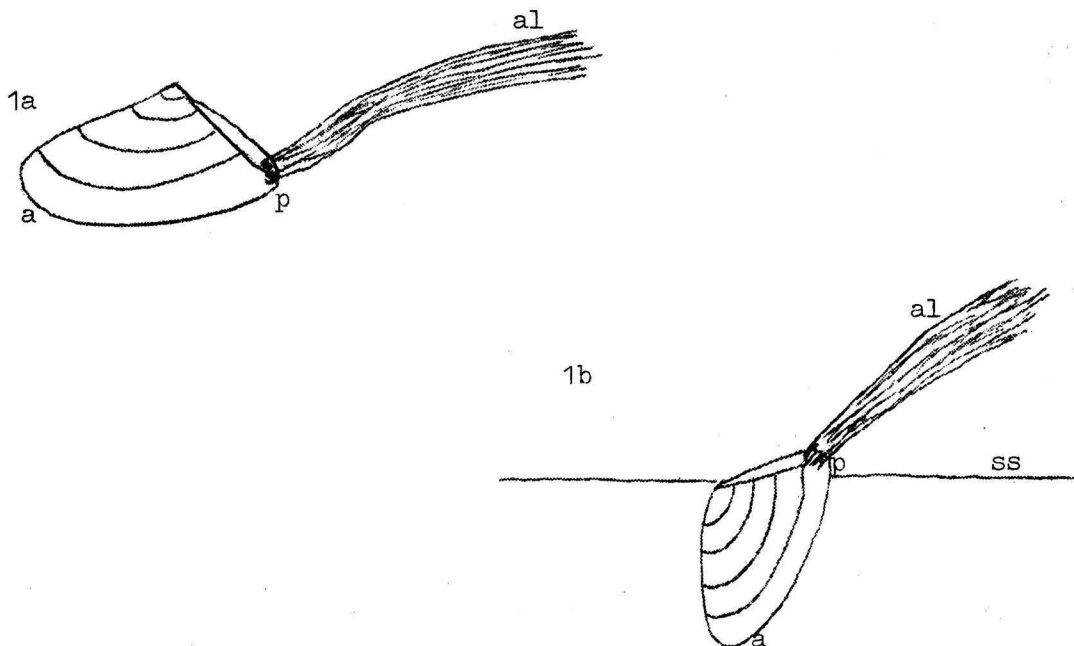


Fig. 1 a) Donax vittatus on beach showing position of attachment of the algae

b) Donax vittatus in position when alive and established in the substrate

a - anterior p - posterior al - algae

ss - surface of sand

were made to test it.

1. Live Donax with the algal growth were put into the sea at various depths in the surf zone on the incoming tide, and were observed to be swept up the beach by the wash of the surf.

2. Live Donax with the algal growth removed were put in the sea in a similar way to those above and it was observed that their movement with the surf was very small and that the animals quickly established themselves in the sand.

It must however be pointed out that these experiments were rather crude and were carried out on animals which had to some extent been weakened by their exposure to the air at H.W.M. No experiments were carried out on the ebb tide.

It therefore seems reasonable to speculate that the mass mortality of these Donax vittatus was caused by the increased drag of the algal growths on their shells in the unusual physical conditions which occurred in the latter part of July and early August 1972. This conclusion is somewhat reinforced by the fact that no small Donax on which algae would not have had time to settle and grow, and only two specimens of Mactra corallina, another shallow burrowing bivalve found in the bay, were observed on the beach at this time.

REFERENCE

Tebble, N. British Bivalve Seashells - London, British Museum (Natural History), 1966.

David W. McKay, Marine Laboratory, Aberdeen

OVER THE WEEDS

The here to there of a snail
is not so far;
let him who is insolent
in travel consider a star,

and knowing the speed of light
over the years,
consider what appears
to be swift in his life;
and respect the great journeys,
which trail
the here to there of a snail.

Keith Thomas

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REPORT OF THE MEETING OF THE MALACOLOGICAL SOCIETY, MANCHESTER UNIVERSITY,

SATURDAY 13th. MAY 1972

Those members of the Conchological Society who were able to attend the meeting of the Malacological Society in the Department of Zoology, University of Manchester, despite the problems of transport caused by the rail strike, can I am certain only join with me in praising the organisers. The lectures proved to be both interesting and instructive and gave those present a number of problems and observations to ponder over during the coming months.

Chaired by Prof. E. Trueman, the lectures were efficiently and concisely read before the members by a number of very competent speakers, and the list of lectures given below can do little to give those who were unable to attend any idea of the amount of detail given.

"The mechanism of locomotion of terrestrial slugs" by Dr. H. D. Jones

"Long term recording of activity in Helix aspersa", Dr. S. E. R. Bailey

"Heart action and the blood circulatory mechanism of Anodonta anatina (L.)", Dr. A. R. Brand

"Evolution in the molluscan faunas of Pacific Islands", J. F. Peake

"The origin of the Madeiran land snail fauna", Dr. L. M. Cook & C. Pettitt

Demonstrations on some of the techniques used by the lecturers were given in the laboratories, giving a practical insight into some of the problems they had faced in their research, and the methods used to overcome these problems.

A. Norris, Leeds City Museums

FIELD MEETING - TO MILLERSDALE IN DERBYSHIRE: SUNDAY MAY 14th. 1972

The visit to Millersdale by members of the Conchological and Malacological Societies was affected in numbers by the rail strike, but those who were able to attend made good use of the fine weather. Although no rare or unexpected species of molluscs were found, a number of interesting observations were made. The occurrence of Helicigona lapicida (L.) in large numbers under logs in the wood below the Youth Hostel was one of the most interesting observations, as this type of habitat is not normal in the North-East of England. Cecilioides acicula (Muller) turned up in numbers in the same locality as recorded by L. E. Adams in his book 'The Collector's Manual of British Land & Freshwater Shells', page 113, but the locating of numbers of live specimens entailed the careful sifting of fairly large amounts of the soft friable top soil.

46 species of land and freshwater Mollusca were recorded as listed below:

Potamopyrgus jenkinsi (E.A.Smith)
Carychium minimum Muller
C. tridentatum (Risso)
Lymnaea palustris (Muller)
L. peregra (Muller)
Ancylus fluviatilis Muller
Succinea pfeifferi Rossmassler

Hygromia striolata (C. Pfeiffer)
H. hispida (L.)
Punctum pygmaeum (Drap.)
Discus rotundatus (Muller)
Arion intermedius Normand
A. hortensis Férussac
A. subfuscus (Drap.)

Azeca goodalli (Muller)
Cochlicopa lubrica (Muller)
C. lubricella (Porro)
Pyramidula rupestris (Drap.)
Columella edentula (Drap.)
Lauria cylindracea (da Costa)
Acanthinula aculeata (Muller)
Vallonia costata (Muller)
Ena obscura (Muller)
Marpessa laminata (Mont.)
Clausilia bidentata (Strom)
Cecilioides acicula (Muller)
Helicigona lapicida (L.)
Arianta arbustorum (L.)
Helix hortensis (Muller)
H. nemoralis (L.)

Arion ater agg.
Euconulus fulvus (Muller)
Vitrea crystallina (Muller)
V. contracta (Westerlund)
Oxychilus cellarius (Muller)
O. alliarius (Miller)
Retinella radiatula (Alder)
R. pura (Alder)
R. nitidula (Drap.)
Vitrina pellucida (Muller)
Milax budapestensis (Hazay)
Limax maximus L.
Agriolimax reticulatus Muller
Pisidium casertanum (Poli)
P. personatum Malm
P. subtruncatum Malm

A. Norris, Leeds City Museums

PUBLICATIONS RECEIVED

'Phillipine Shell News' published by the Association of Phillipine Shell Collectors, Vol. VII, No. 1 (New Series), March 1972.

An editorial note explains that this publication is being issued after a break of nine years and appeals for support. The magazine is for the present a printed and illustrated issue of six pages containing several short articles and a number of advertisements. One article claims the Phillipine island of Samar as the best place in the World for Cowries, backing this statement with an impressive list of sixty six species and going into some details of collecting sites.

Another note concerns a trip with a local collector of considerable skill and yet another details the life story of a popular shell dealer and his wife in Quezon City. Of more general interest is a good account of recent experiments with venom taken from poison cones.

Illustrations feature a variety of cowries and cones. The magazine will be issued quarterly from 21 Galaxy Street, Makati, Rizal D.708, Phillipines.

T.E.C.

'A Catalog of Dealers' Prices for Marine Shells' by Tom Rice, 3rd. Edition, May 1972. Obtainable from 'Of Sea and Shore', P.O. Box 33, Port Gamble, Washington, U.S.A. 98364, at \$3.00.

This is a re-issue of a list first published in 1965 and improved and enlarged twice since. Nearly 2,000 additional species are now included for the first time and the catalogue is probably the most comprehensive compilation of its kind now available. The names used are those from the dealers' lists and are therefore not necessarily accurate, but are generally understood by collectors, particularly in America. Prices vary, as might be expected, with the size and condition of the shells offered, but they must to a certain extent be arbitrary even then, since for some species the range of prices is very considerable. It may be that the market inclines towards that in the world of numismatics, where the price of a coin is apt to increase geometrically with its condition, and you will pay ten times 'fine' price for a coin which is 'extra fine'. This catalogue shows a normal throw for average species of two or three times, but ten times is not uncommon, which looks as though dealers sometimes price quite arbitrarily.

The publication makes interesting browsing even for those with no immediate desire to buy or sell. It contains about seven thousand species or subspecies and there can be few shells available from dealers which are not now listed.

T.E.C.

Snailly Verse by (Miss) Pat Halliday, 1972 (Marsland Press: Dr. D. MacEwan, Wellington House, Peterhead, Aberdeenshire), pp. 48, paper cover, with sketches by the author. No price stated.

This is so far as I know the first book of molluscan verse to be published since Sarah Hoare's Poems on Conchology and Botany, 1831 (see Conchologists' Newsletter, No. 23, p. 24, Dec. 1967). A review is out of place, but a few hors d'oeuvre may be quoted:

In ghostly Saxon graveyards,
When moon is full and bright,
See movement 'mongst the tombstones,
All in the dead of night--
See ghostly hordes a-creeping
In sea of eerie white!

It is Caecilioides,
The undertaker's friend,
His shell so white and spectral
Pursues the ghostly trend.
Watch out if you're a Saxon--
He'll get you in the end!

From a ballad on Laciniaria biplicata's moving day:

But here's news his heart to quicken,
List to Dr. Verdcourt's words:
"Where the nettles ever thicken,
Sanctuary for more than birds--,"

"There shall snails be more than welcome,
Living with the ducks and quails,
Voices raise to sing this paeon--
'ETON WELCOMES HOMELESS SNAILS'."

Little Carychium, wee Herald,
I wonder why you are so-called?

And so does A. E. Ellis.

MILAX SOWERBYI (FERUSSAC) IN CAITHNESS V.C. 109

The known distribution of Milax sowerbyi in the British Isles up until June 1971 extended as far north as Aberdeen on the east coast of Scotland. Since June 1971 M. sowerbyi has been found in two Caithness localities, both more than 100 miles north of Aberdeen. There follows a description of the localities, along with some notes on population and variety.

Locality I. Grid Ref. ND (39)099698

Directly below Scrabster House is the A882 roadbridge, passing over a dried-up stream bed. About 40 metres up this to the right are some trees, under which are many stones partially overgrown with dense grass. It was under these that a half-grown specimen of M. sowerbyi was first found in Caithness. This specimen was authenticated by Mr. A. E. Ellis in June 1971, and since that time two fully grown specimens have been found in the same spot. Both were released immediately after examination, and the stones returned to their original positions.

Locality II Grid Ref. ND (39)095663

At the east end of the Janetstown Quarries, about 150 metres from a farmstead, is a rubbish tip. A fully grown specimen of M. sowerbyi was obtained here in August 1971. This specimen was authenticated by Dr. M. P. Kerney. Four other specimens, all adult, have since been found in and around this tip.

Adult specimens of M. sowerbyi found at Scrabster and Janetstown are of the variety bicolor Cockerell (see Quick, Slugs, Synopses of the British Fauna, No. 8, p. 18) and so far no other varieties of this species have been encountered.

At Scrabster M. sowerbyi is accompanied by M. gagates, while close by other stones have Arion ater (agg.), Arion circumscriptus circumscriptus and Arion fasciatus (seg.) underneath them.

Janetstown is different in that Hygromia hispida and Milax budapestensis occur in close company with M. sowerbyi. In both localities, when one encounters M. sowerbyi it is strange that under any one stone or any one place only single specimens are found.

M. sowerbyi appears to be recently introduced by man to Caithness, and there is no reason why this species should not become firmly established within the next few years.

R. G. Meiklejohn

GENERAL NOTES

ANNUAL SUBSCRIPTIONS

Will all Members please note that the Annual Subscription for 1973 will be due on 1st. January 1973. (Member's Subscription, £3.00; Junior Member's Subscription, 50p; Family Subscription, £4.00). Banker's Order Forms are available if required. Cheques, etc., should be made payable to the Conchological Society, and sent to me. Overseas Members are reminded that the amount of the Subscription is payable in £ Sterling; foreign cheques are accepted, but allowance must be made for conversion charges (e.g. allow U.S. \$3 to £1).

A number of Members already pay their Subscriptions by means of Seven Year Covenants. Any Member who is not doing this may like to consider the possibility, as it entails no additional expense to the Member, and is of great benefit to the Society. A Form of Covenant and explanatory letter will be sent on request.

40 Members and 10 Junior Members have not as yet paid their Annual Subscriptions for 1972. They are asked to forward these without delay, as failure to do so will entail removal from the 1973 mailing lists. A further 7 Members' Subscriptions are under-paid, and it would be greatly appreciated if they would arrange for payment of the deficit without further reminder.

MARJORIE FOGAN (Hon. Treasurer)
[REDACTED], Atherton,
Manchester, [REDACTED]

NOTICE

The Editor of the Journal of Conchology will be away from home December 1972 and January 1973. Will authors PLEASE SEND THEIR PAPERS to the Hon. Secretary (Mrs. E. B. Rands, [REDACTED], Luton, Bedfordshire, [REDACTED]) who will arrange to have them read?

Failure to do this will result in considerable delay.

"SNAIL-PACE WIN

Farm-worker Mr. Ray Goodwin, of Cowley, Gloucestershire, has won first prize in a national wildlife recording competition - for recording a snail munching lettuce".

(Ex Liverpool Echo of Wednesday April 12th. 1972)

BLUE-PRINT FOR PEACE - Extract from a letter dated 18 February 1950:

"We had a very enjoyable meeting of the Conchological Society at the Natural History Museum this afternoon, a very friendly gathering. A common interest forges a close bond between people of diverse character. If some of the more intransigent politicians of the world could be persuaded to embrace conchology, their nature might be mellowed, to the benefit of distraught humanity."

(Proceedings in Journal of Conchology, Vol. 23, p. 126)

SUCH NUMBERS OF SNAILS - "So little is known of the numbers of snails in any area that perhaps the following observation may be of interest"*. -

"I have embarked on a Snail Campaign. The official opening was on Wednesday afternoon, when I collected 1400 from the globe artichokes, 1100 from one plant. The figure now stands at 3004. Two years ago Miss Rawson at Brecon House got 16000, and last year only 5000, so it seems to have some effect. If I continue at the present rate I should have no difficulty in beating her record." Extract from a letter from Mrs. Margaret Long (sister of A.E.E.), [REDACTED], Sherborne, Dorset, 7 May 1950. Within a few years snails became very scarce in that large garden.

(*Mrs. N. F. McMillan, J. Conch., Vol. 24, p. 24, 1954)

"Yesterday I went to the Natural History Museum to a meeting of the Conchological Society. Besides myself, there were present Hopwood (the President) and Kathleen White, who was to read a paper." This must have been declared a non-meeting through lack of a quorum, as there is no record in the official Proceedings of any meeting between the Annual Meeting, 2 November 1946, and the 679th. meeting, 4 January 1947, at which Dr. White gave a demonstration on the anatomy of a new marine bivalve. Accordingly it cannot be claimed as 'an all time low'.

A. E. Ellis

UNITAS MALACOLOGICA EUROPAEA

RESOLUTION

U.M.E., representing malacologists and conchologists in Europe, is much concerned by the rapidly increasing destruction of the natural environment.

It therefore supports all measures being taken to avoid and reduce pollution.

U.M.E. urges all who are concerned throughout the world to accept responsibility for ensuring the future existence of mollusca and their habitats.

We, the members of U.M.E., realise that this will necessitate a curtailment of collecting activities, but we are sure that, as responsible naturalists, all conchologists and malacologists will wish to support appropriate conservation measures.

U.M.E. therefore urges that for all purposes whatsoever only about the minimum number of specimens should be collected.

Observations as well as photography of living specimens in their natural habitats may be a much more rewarding activity than mere collecting. This applies equally to the work of the amateur and the professional.

Such an approach to field studies would result in the acquisition of much of the information which is so urgently needed to ensure the success of the efforts being made to conserve these animals. The European national malacological Societies fully associate with this resolution and will publish it in their periodicals.

Dr. Oliver E. Paget - Secretary

BRITISH MARINE MOLLUSC SURVEY

Included with the June Newsletter this year was a questionnaire dealing mainly with the identification of British marine molluscs. Nearly a quarter of the 400 forms distributed have been returned completed. From these we have been able to enumerate some of the problems of British marine mollusc collectors.

Mr. Llewellyn-Jones and Mrs. Pain would like to thank those who returned their forms, and in many cases added comments of their own on this subject. It is very encouraging to know that so many people are interested in British marine molluscs and are able to help others on difficult points.

A question frequently asked was 'Why wasn't there a space for my name and address on the questionnaire?' It was our intention not to ask for names or addresses in the hope that members wouldn't feel that we were trying to get information that might be considered personal. As it turned out, almost all members who replied included this information.

A summary of your answers is given below:

Approximate number of questionnaires sent out.....	400
Number returned and analysed.....	86
Q1. Members collecting only British shells.....	27
Members collecting British and foreign shells.....	36

Members collecting only foreign shells.....	23
Members who collect all groups.....	48
Members who specialise in one or more groups.....	15

Numbers of members specialising in named mollusc groups.

Gastropods	4	Bivalves	7
Rissoidae	3	Pectinidae	3
Odostomidae	1	Veneridae	1
Trochidae	1	Cephalopods	1
Littorinidae	2	Fossil molluscs	1
Patellidae	2	Scottish	2
Eulimidae	1	S.W. England	1
<u>Nucella lapillus</u> L.	1		

Q2. Members with no difficulties.....	5
Members with difficulties.....	53
Members who didn't answer question.....	5

Molluscan groups for which members have found difficulty in identification, and the numbers of members who found them so. (For groups marked *, these will be given priority consideration in the production of Keys.)

*Small gastropods	24	Bivalves	18
*Rissoidae	17	*Nuculoidea	8
*Pyramidellidae	15	*Solenidae	4
*Eulimidae	5	Astartidae	5
Mangelidae	3	Tellinidae	4
Patellidae	5	Cardiidae	4
*Odostomidae	3	Pectinidae	2
Turridae	2	Lucinoidea	3
Naticidae	1	Leptonidae	1
Buccinidae	1	Pholadacea	1
Littorinidae	1	Maetracidae	1
Trochidae (Gibbula)	1	Opisthobranchia	3
Bittium	1	Nudibranchia	1
Pteropoda	1		

Q3. Number of reference lists requested	43
Reference lists not requested or question not answered	20
Number of requests for keys	53
Not requested or question not answered	10
Numbers of members who said that they would like to help in one way or another	49
Numbers of those not prepared to help	14

From your answers it is evident that there is a need for two types of information. First and most necessary, is a list of good textbooks and references from which to identify shells. It is unfortunate that there are so few good books in English on the market at the moment. A preliminary list is given below:

- Tebble, N. British Bivalve Seashells: a handbook for identification. British Museum (Natural History), 1966.
- Graham, A. British Prosobranch and other operculate gastropod molluscs. (Shortened to 'British Prosobranchs' on the cover). Published for the Linnean Society of London by the Academic Press, London, 1971.
- Ziegelmeier, E. Die Muschelen (Bivalvia) der deutschen Meeresgebiete. Biologische Anstalt Helgoland, Hamburg, 1962.
- Ziegelmeier, E. Die schnecken (Gastropoda, Prosobranchia) der deutschen Meeresgebiete und brackigen Kiostengewasser. Biologische Anstalt Helgoland, Hamburg, 1969.

For those who already have problems in certain groups the following papers may be of some help. We hope to publish more references in future issues of the

Newsletter.

- SOLENIDAE - Holme, N.A., 1951. The identification of British species of the genus *Ensis* (Schumacher). Journal of the Marine Biological Association, Vol. 29, pp. 639-647.
- CARDIIDAE - Turk, S.M., 1964. The British species of *Cardium*. Conchologists' Newsletter, No. 10, pp. 58-62.
- SPISULA - Urk, R.M. van, 1964. The British species of *Spisula*. Journal of Conchology, Vol. 25, 7, pp. 268-275.
- CHITONS - Matthews, G. The identifications of British Chitons. Papers for Students, No. 9, Conchological Society, 15th. May 1967.
- LITTORINIDS - Newell, G.E., 1958. Periwinkles. New Scientist, 7th. August 1958, Vol. 4, No. 90, pp. 564-566.
- PATELLIDAE - Fretter, G. & Graham, A. British Prosobranch Molluscs. Ray Society, 1962, pp. 507-508.

The second type of information required is specialised identification keys. There appears to be a dearth of suitable keys to British molluscan families. In time, we hope to be able to remedy this by including keys to the problem families in the Conchologists' Newsletter. The compilation of keys needs expert knowledge of the groups concerned and a great deal of time to make them workable; this is, therefore, a long-term project. Those families or groups asterisked in the list of problem groups in question 2 in the questionnaire results will be considered first.

Members who have offered their help in one capacity or another will be contacted as soon as possible. Those whose requests for specific information we can fulfil will have it when it is available.

This questionnaire has, in a sense, broken the ice on the British marine mollusc 'pond'. You have given your time to telling us about your interests and problems; now it is necessary to get you talking between yourselves, and participating in the Society's activities. Come on field meetings and get to know your fellow enthusiasts. If that is not possible then come to indoor meetings, bring your recently acquired pride-and-joy and your shell problems, and ask about them. Once difficult groups begin to be discussed the problems will start to resolve themselves. Failing all this talk, a spot of letter writing will not come amiss. Mrs. S. M. Turk, the Marine Recorder, is always happy to check identifications, the new Area Recorders (of which there is a list in the September Newsletter) are willing, and may be able, to help, if not, they will know to whom to pass your problem. The new Marine Census Area Recording Scheme, should stimulate the formation of area groups and activities. These will be easier to get to than the official field meetings which are sometimes far afield.

The Society needs the help of all members interested in British marine molluscs in running the current Marine Census mapping scheme, in conjunction with the Biological Records Centre at Monkswood. In this scheme it is envisaged that the Area Recorders will be recorders only, the members having the joys, trials and tribulations of collecting and identifying the molluscs living around the British coasts.

J.E.L.J. & C.P.

FURTHER NOTES ON MONACHA CARTUSIANA (MULLER) IN EAST SUFFOLK

In September 1968 Stratton found one live example of this species in a chalk pit in East Suffolk (Stratton 1969). There were also 2 dead shells. As I was with him at the time I knew the exact locality and thought a visit might be profitable when passing near the place in July 1970. I failed to find any examples, live or dead, and all other species found, including Monacha cantiana (Montagu), were represented by dead shells only.

The summer had been very dry and was not a suitable time to check what, if

anything, had happened to the colony.

More recently, Dr. & Mrs. Bishop have reported dead shells at Orford in April this year (Bishop M. & Bishop S., 1972).

Whilst collecting Diptera on the lower slopes of the mound on which Orford Castle is built I came across a small colony of this mollusc. It was nearly October, the mornings were foggy and left the vegetation quite wet at the lower levels; the day was not cold. When taking a number of *Helicella virgata* (Da Costa) from the upper parts of the fading vegetation I found I had four examples of live *Monacha cartusiana* amongst them. The colony must be very small, but I had no time to investigate further. These shells measured 10.31 mm. average major diameter and may be a colony small in size as well as in numbers and as the surroundings of the spot are entirely covered with grass it may be an isolated colony.

Dr. Bishop informs me that this is the same spot from which he took his dead examples in April.

References.

- Bishop, M. & Bishop, S. 1972 "A New Locality for the Snail *Monacha cartusiana* (Müller). Trans. Suffolk Nat. Soc. 16:47-48.
Stratton, L.W. 1969 "Monacha cartusiana (Müller) in Suffolk", The Conchologists' Newsletter, 30: 110-111.

H. E. J. Biggs

SHELLS FOR SALE: Browse in baskets full of shells from all parts of the world - at Eaton's Shell Shop, 16 Manette Street, off Charing Cross Road, London, W1V 5LB (01-437 9391).

- FOR SALE: Fischer, P., 1887. Manuel de Conchyliologie et de Paleontologie Conchyliologique. Good condition. £30 o.n.o.
Kew, H.W., 1893. The dispersal of shells. Good condition. £2 o.n.o.
Rimmer, R., 1880. The land and freshwater shells of the British Isles. Moderate condition. £1 o.n.o.
Turton, W., 1840. A manual of the land and freshwater shells of the British Isles. Moderate condition. £4 o.n.o.
Post paid: Michael Morphy, [REDACTED], Fixby, Huddersfield, Yorkshire.

I AM VERY ANXIOUS TO OBTAIN live specimens of *Testacella* sp. If any reader can suggest a locality which I could visit, or send any specimens they collect to me, I would be very pleased to hear from them. Miss D. M. Crampton, University of Reading, Dept. of Zoology, Whiteknights, Reading, RG 6 2AJ

CHRISTMAS 1972

The compiler sends Christmas Greetings and Good Wishes to all readers.

Many thanks to the people who sent in contributions for the Newsletter during the year and to those who have kindly assisted with information, advice on nomenclature and other points.

It is hoped that the supply of interesting and varied items, both long and short, will be maintained during the coming year.

Piero Piani, [REDACTED], 40137 Bologna, Italy -

- 1) Wishes to buy past numbers of the 'Journal of Conchology'
- 2) Wishes to buy books on British Marine Conchology
- 3) Wishes to exchange Italian Marine Shells for British Marine
- 4) Wishes to correspond with anyone interested in 'Rissoas'.

Frank M. Hilton, [REDACTED], Mitcham 5062, S. Australia -

Wishes to exchange Australian specimens for British Marine and Non-Marine. He is willing to send books available in Australia as well as specimens.

FIELD MEETING AT HIGHGATE CEMETERY - 2 SEPTEMBER 1972

On Saturday, September 2nd. at 2.30 p.m., a small party assembled at the

entrance to the older, upper part of Highgate Cemetery, London.

After a very dry spell, the prospect was unpromising, but investigation gradually revealed a flourishing molluscan fauna, including such relatively unexpected species as Vallonia pulchella and Limax marginatus. Apart from the well-kept paths, the place is largely undisturbed now, and it offers a rich variety of imported rocks, ivy-clad trees, and a piped water supply with enough leakage to provide some permanently damp patches. Some of the trees and catacomb doorways were adorned with splendid slug trails.

Most interestingly, the cemetery harbours the "Buncrana slug", which was well seen at this time of year, just at the beginning of its season. (Two well-grown slugs taken on this occasion produced eggs a month later.) In colour it nearly matched the Arion subfuscus, with a yellow sole suggesting A. hortensis, but it was readily distinguished by its much coarser, sharply ridged tubercles. Less frequent, and less mature, were the ordinary grey-black forms of A. hortensis, of which the more general form "A" did not show up until rather late in the afternoon. A note on these slugs follows this report.

Five members remained happily exploring the cemetery, until just before the bell rang for closing time at 5 p.m. Three of them then went on to take a look at Highgate Wood and Queen's Wood. These are fine woods, but rather tidily kept, and in the very dry conditions they showed no sign of molluscan life. The contrast served to emphasize the excellent amenities of the decaying cemetery as a molluscan sanctuary.

Mollusca found in Highgate old cemetery

<u>Cochlicopa lubrica</u> (Müller)	<u>Arion subfuscus</u> (Draparnaud)
<u>Vallonia costata</u> (Müller)	<u>Vitrea crystallina</u> (Müller)
<u>V. pulchella</u> (Müller)	<u>Oxychilus draparnaldi</u> (Beck)
<u>Helix aspersa</u> Müller	<u>O. alliarius</u> (Müller)
<u>Hygromia striolata</u> (C. Pfeiffer)	<u>Retinella radiatula</u> (Alder)
<u>H. hispida</u> (L.)	<u>R. nitidula</u> (Draparnaud)
<u>Monacha cantiana</u> (Montagu)	<u>Milax budapestensis</u> (Hazay)
<u>Discus rotundatus</u> (Müller)	<u>Limax maximus</u> L.
<u>Arion circumscriptus</u> Johnston seg.	<u>L. marginatus</u> Müller
<u>A. hortensis</u> Férussac agg. A, R, and B (see note below)	<u>Agriolimax reticulatus</u> (Müller)

Note on Arion hortensis Ferussac

Two rather similar, but anatomically and biologically distinct, forms, recorded as "A" and "R", may have some claim to this name, which is likely to have been used also to cover the uncommon form "B". The three will have to be described as a group of separate species. They live together in widely separated localities without any interbreeding, although their seasons overlap and mating is frequent within each species. The spermatophores, which are distinctive, may be collected far more easily than those of other species of Arion, and each has only been found within its own species. More observations would be useful, particularly if any readers could assess the relative frequencies of "A" and "R" in their gardens at intervals throughout the year. The following details may be useful.

SPECIES A British distribution not restricted. Adults, at least in the south, more conspicuous in winter and spring, as "A" gradually replaces "R" as the dominant species. Usual colouring grey to blue-black, plus yellow, browner in old age. Apparently no red colour. The transparent bases of the tentacles a cold or greenish grey.

SPECIES R Common in south of Britain generally. First noticed at Riddlesdown, Surrey, in 1967. Adults more conspicuous in autumn and winter, before "A" is fully in season. A blue-black colour, resembling "A", may be accompanied, preceded, or even replaced by red. Juveniles often have pink tentacles, and a tinge of red can usually be discerned in the transparent bases of adult tentacles, even the blackest. Mantle bands usually somewhat higher and closer than in "A".

SPECIES B Common in large areas of Inishowen, in the north of Ireland, where it was first recorded at Buncrana in 1968. Found since in isolated colonies in Cornwall and South Wales, as well as Highgate Cemetery. Breeding beginning rather

earlier than "R's" main season, and more restricted to autumn and winter. Usual colouring yellow to brown, including a red colour which shows in the tentacles. Bands variable, usually stippled. Easily recognised by coarse, sharply ridged tubercles.

Stella M. Davies

REGISTER OF BRITISH NATURAL HISTORY AUCTIONS

I am compiling for publication in 1973, a Register of British Natural History Auctions from the earliest times. As many of these auctions included Conchological material, I am wondering if those who may have collections of 18th. or 19th. cent. catalogues of British auction sales containing natural history items of any sort (except books), would be so good as to communicate with me so that I may make the Register as complete as possible.

I do not need to be notified of 20th. cent. sales, as probably I have a record of most, if not all, of these. During the 18th. and 19th. centuries, however, many natural history auctions took place of which I have been unable as yet to trace any surviving catalogues, and there were without doubt numerous other natural history auctions during this period that are completely unknown to me.

J. M. Chalmers-Hunt, [REDACTED], West Wickham, Kent, [REDACTED] 16.xi.1972

LEGACY

The late Mr. C. P. Castell, in his will, left a legacy to The Society of £500 free of duty, for which The Society is very grateful.

DONATION

As a registered Charity Organisation we have received a donation of £10 from Mrs. J. Leach, a member from Wolverhampton. The Society is most grateful for this gift in these days of ever rising costs.

ANNUAL GENERAL MEETING

24th. FEBRUARY 1973

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 SATURDAY 6th. JANUARY 1973.

No. 44

March 1973

Compiled by: P. E. Negus,
[redacted],
Chelsea Bridge Road,
London, [redacted]

Produced by THE CONCHOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND

SLUG OR SNAIL?

In September (1972) I was asked to settle an argument. An English schoolboy had found a Limax flavus in the garden, and was calling it a slug, but a lass from Lanark thought it must be a snail, because, to her, a slug was "wee and white". I explained that I was quite happy to call the creature a slug, and a snail too: in England it would generally be called a yellow slug, but in Scotland it was likely to be called a snail.

I first met this Scottish usage a few years ago. A retired lady doctor, in conversation after dinner in a Scottish hotel, was astonished to hear that I was looking at slugs, because she thought there would only be snails in the district. She remembered having had a black snail to dissect in an examination in her youth at Edinburgh, and she had never heard anyone call it a slug. Unfortunately, she could not describe just what she would call a slug. I was surprised that she was as ignorant of the English use of the term as I had been of her Scottish use.

Last summer, at Cowdenbeath, a policeman assured me that the big black chaps were always called snails, and the little white fellows who ate his tomatoes were slugs. His wife, who had been in England more, was uncertain about the distinction.

Stella M. Davies

10-KILOMETRE SQUARE MAPPING SCHEME FOR NON-MARINE MOLLUSCA

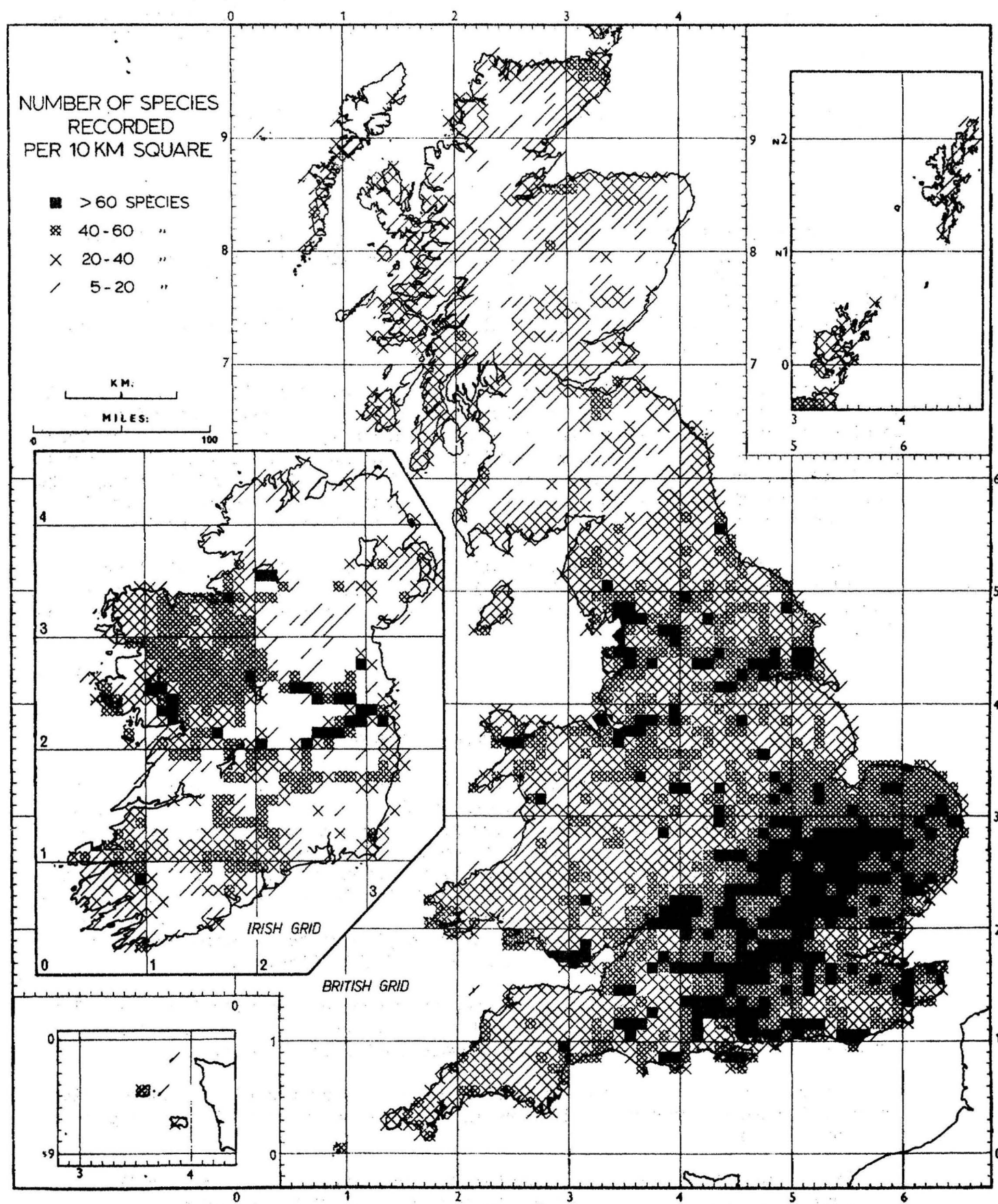
1972 has been an excellent year for the mapping scheme. Some 14,000 new records have been incorporated and appear in the new progress map (overleaf). My best thanks to everyone concerned. Very few squares in England and Wales now remain totally unrecorded. In August a small party of members visited Ireland and systematically covered a large block of unworked country in the north-west (Irish Nat. Journ., in press). The worst deficiencies remain in Scotland, and I should be grateful if members could focus their attention on that country in 1973. As before, I am always glad to forward copies of the master-cards for particular blocks of squares to avoid needless duplication.

The Biological Records Centre has recently produced an illustrated booklet explaining how mapping schemes work, and giving instructions in the use of recording cards. I should be glad to forward copies on request.

Progress continues on the extraction of old Census records and other data in order to increase coverage. This work is now reasonably complete for England, Wales and Ireland.

It is hoped to start map production for our mollusc atlas towards the end of this year. Please do your very best in 1973 to help fill some of the gaps evident overleaf!

M. P. Kerney,
Hon. Recorder for non-marine Mollusca,
Dept. of Geology,
Imperial College,
London, SW7 2BP



Map showing the number of species of land and freshwater Mollusca recorded to January 1973 for each 10-kilometre square of the British and Irish National Grids (post-1950 records only)

SHELLING ON A SCOTTISH ISLAND

LISTS OF PROSOBRANCHIA & LAMELLIBRANCHIA found on Inch Kenneth, Gribun, Mull, Argyll, Scotland.

Specimens collected in July 1972.

THE ISLAND

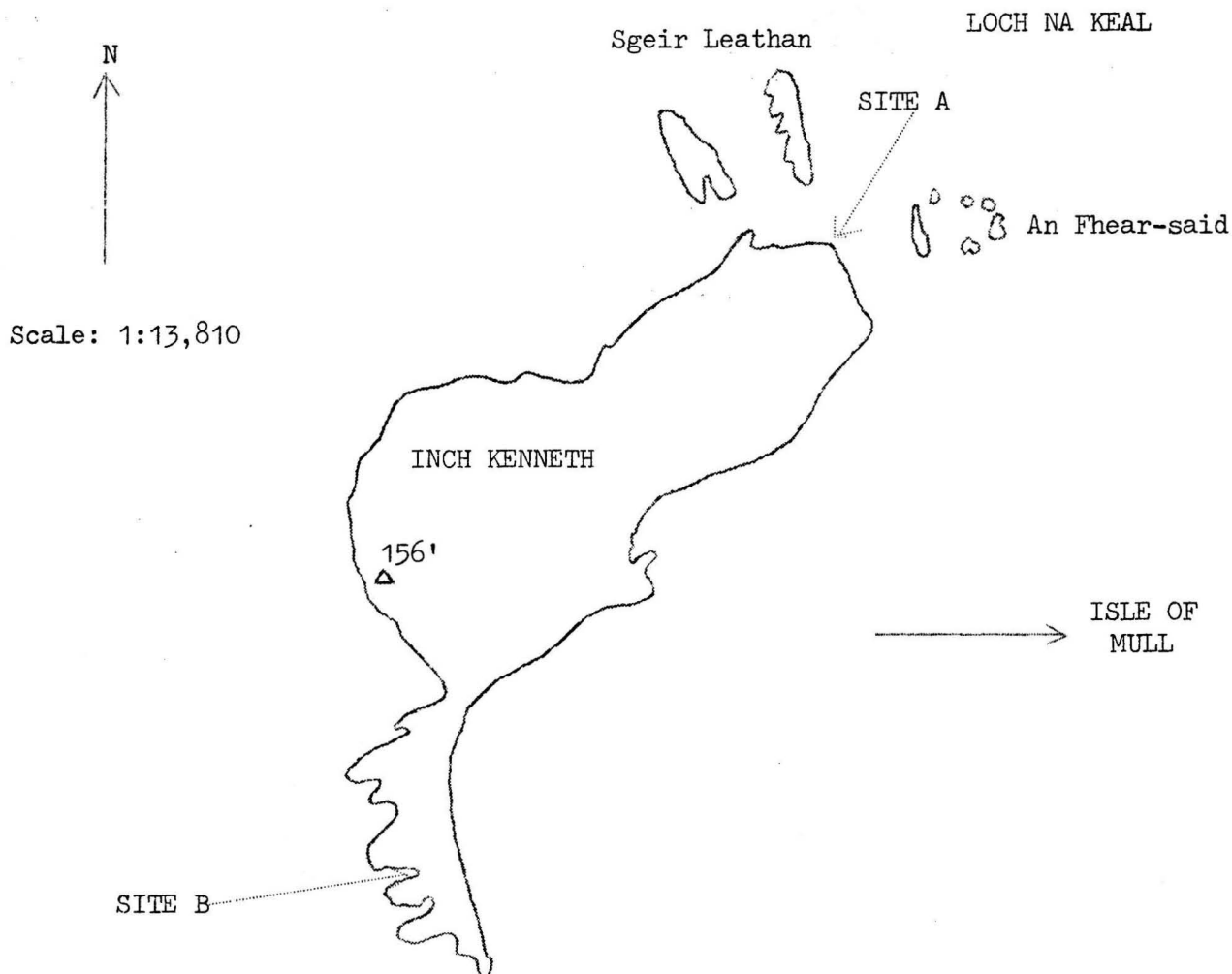
1) INTRODUCTION

I was lucky enough to spend a fortnight with friends on Inch Kenneth, a small island just off the coast of Mull, Argyll.

Until recently owned by Nancy Mitford, the island is a "paradise". I can best describe the hospitality I was given by quoting what Dr. Johnson wrote in his diary after holidaying on the island in 1773 with Boswell. It was "a pretty little island....all good land. We were entertained not by a gross herdsman nor an amphibious fisherman but by a gentleman and two ladies of high birth, polished manners and elegant conversation, who in habitation....furnished with unexpected neatness.....practiced all the kindness of hospitality and refinement of courtesy."

2) POSITION AND RELIEF

Inch Kenneth is approximately a mile off the coast of Mull and lies at the South entrance to Loch Na Keal. It is one mile long by half-a-mile wide and is "a fertile island with a level surface, rising only to about 160 feet." The position of the highest point is: Lat.: $56^{\circ}26'30''$, Long.: $6^{\circ}9'50''$, so that the island falls within the Marine Census Area 29 (CLYDE & ARGYLL). A sketch of the island showing its general shape and the two contrasted collecting areas follows.



A sketch map of the island showing its general shape
and the two collecting areas

COLLECTING METHODS

1) DATES

Collecting was done on five days:

- i) 15th.
High Water approx. 9.53 a.m.; neap tides
Collecting time approx. 4.00 p.m. i.e. near low water
Weather: fine, sunny. Temp. 21°C indoors shade. Rainfall during last 24 hrs., nil.
- ii) 17th.
High Water approx. 11.05 a.m.; near neap tides
Collecting near low water
Weather: as for i).
- iii) 24th.
High Water approx. 5.50 a.m.; near spring tides
Collecting time approx. noon. i.e. near low water
Weather: cool, misty. Temp. lower. Some rain during last 24 hrs.
- iv) & v) 26th. & 27th.
Collecting near low water
Weather: as for i) & ii).

Probably because we did not experience any dramatic change in the weather, in particular no violent storm (the conchologist's delight) to wash dead shells up onto the shore, there was little variation in the species found at any one locality from one collecting day to another. For identification and listing, therefore, the several days specimens were combined.

2) AREA

Because I did not have much equipment, collecting was limited mostly to the beach, in particular the Middle Shore. Some collecting was done in the clear, shallow water, waist-deep at maximum. In view of this, few specimens, especially the sand-living lamellibranchs, were taken live; so that most specimens are of 'B' or 'C' status. Deep-water-living species, particularly were only represented by 'C' type, empty shells often with only one valve (if a lamellibranch) and often badly worn. Hiatella arctica and Gari fervensis are but two examples.

Since live specimens were not generally taken, but washed-up shells affected by longshore drift and other shoreline currents, the exact location of the specimens was not recorded neither were their micro-habitats. Although some collecting was done near a time of Spring tides, it was nowhere near the equinoctial season of greatest range. The uncovered shore was not therefore as extensive as I should have liked.

FAMILIES REPRESENTED

Inch Kenneth shells give quite a good cross-section of the commoner British Marine molluscs. Most of the larger families are represented. The clean-sand-living lamellibranchs were particularly abundant; the families Veneridae and Tellinidae especially.

The rock-boring piddocks (Pholadidae) however were not represented at all. These usually bore in wood, clay, peat or limestone. That there are no wooden structures on the shore, little driftwood and the three rock types are not present on the island, help to explain their absence. I was impressed by the size of some of the specimens collected. Modiolus modiolus in particular reached a large size; although most often the larger valves picked up on the shore were single and much damaged. Good specimens of large individuals can, I think, only be obtained by dredging or by making friends with local fishermen.

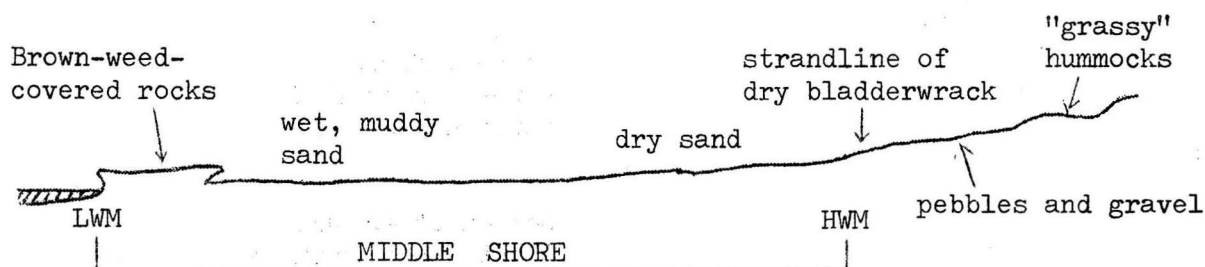
COLLECTING AREAS AND SPECIES LISTS

SITE A

This was at the North end of the island between Segir Leathan and An Fhearsaid. It was essentially a gently-shelving, quartz-sand beach showing both dilatancy (generally in the upper part) and thixotrophy (lower regions).

Approximate cross-section of the Shore.

Low tide



Collecting was done mostly on the exposed, wet sand or just into the water. The best-represented species were the sand-living lamellibranchs.

SPECIES

PROSOBRANCHIA

Archaeogastropoda:

7	<u>Patella vulgata</u>	Common limpet	C
10	<u>Patina pellucida</u>	Blue-rayed limpet	A
12	<u>Patelloida tessulata</u>		A
13	<u>Patelloida virginea</u>	White tortoiseshell limpet	C
20	<u>Calliostoma zizyphinum</u>	Common or painted top shell	C
23	<u>Gibbula magnus</u>		A
25	<u>Gibbula cineraria</u>	Grey top shell	C
26	<u>Gibbula umbilicalis</u>	Flat or purple top shell	C

Mesogastropoda:

41	<u>Littorina littorea</u>	Common or edible periwinkle	C
42	<u>Littorina saxatilis</u>	Rough periwinkle	A
45	<u>Littorina littoralis</u>	Flat periwinkle (some "estuarine variety")	C
57	<u>Cingula cingulus</u>		A
87	<u>Turritella communis</u>	Tower shell	C
90	<u>Bittium reticulatum</u>	Needle shell	C
190	<u>Nucella lapillus</u>	Common dog whelk	A
204	<u>Buccinum undatum</u>	Common whelk	C
207	<u>Nassarius reticulatus</u>	Netted dog whelk	C
208	<u>Nassarius incrassatus</u>	Thick-lipped dog whelk	C

LAMELLIBRANCHIA

20	<u>Mytilus edulis</u>	Common mussel	A
22	<u>Modiolus modiolus</u>	Horse-mussel	B
35	<u>Ostrea edulis</u> (juvenile bored by <i>Natica</i> sp.)	Common, European or native oyster	A
39	<u>Pecten maximus</u>	Great scallop, Escallop or St. James' shell	C
42	<u>Chlamys varia</u>	Variegated scallop	C
44	<u>Chlamys opercularis</u>	Queen scallop	C
66	<u>Lucinoma borealis</u>	Northern lucina	A
84	<u>Cyprina islandica</u>	Iceland-cyprina	C
93a	<u>Cerastoderma edule</u>	Common or edible cockle	A
93b	<u>Cerastoderma lamarki</u>		C
95	<u>Dosinia exoleta</u>	Rayed artemis	B
100	<u>Venus casina</u>		A
102	<u>Venus fasciata</u>	Banded venus	C
103	<u>Venus striatula</u>	Striped venus	A
104	<u>Venerupis aurea</u>		C
106	<u>Venerupis pullustra</u>	Pullet carpet shell	A
108	<u>Venerupis decussata</u>		B

115	<u>Tellina squalida</u>		C
116	<u>Tellina tenuis</u>	Thin tellin	C
118	<u>Tellina crassa</u>	Blunt tellin	C
120	<u>Tellina donacina</u>		C
123	<u>Macoma baltica</u>	Baltic tellin	B
124	<u>Scrobicularia plana</u>	Peppery furrow shell	C
129	<u>Gari fervensis</u>	Faroe sunset shell	C
130	<u>Gari depressa</u>	Large sunset shell	B
138	<u>Ensis arcutus</u>		B
144	<u>Spisula subtruncata</u>		C
145	<u>Lutraria lutraria</u>	Common otter shell	B
147	<u>Mya truncata</u>	Blunt gaper (some very atypical)	B
148	<u>Mya arenaria</u>	Sand gaper or soft-shelled clam	C
151	<u>Hiatella arctica</u>		B

SITE B

This was on the West side of the island. It consisted of a steeply-sloping but narrow beach at the head of a geo-like formation created by marine erosion along the line of an igneous intrusion. The beach material was shell-sand interrupted by generally bare rocks (weed-covered on the lower shore). The collecting area was limited to the Upper Shore and the higher part of the Middle Shore.

The shell life consisted almost entirely of small prosobranchia: a marked contrast to site A. Lamellibranchs, with one exception, were represented by a few small, broken shell-fragments. The exception is Hiatella arctica; presumably washed up from holdfasts in the Lower shore region or below.

SPECIES

PROSOBRANCHIA

7	<u>Patella vulgata</u>	Common limpet	A
10	<u>Patina pellucida</u>	Blue-rayed limpet	C
13	<u>Patelloida virginea</u>	White tortoiseshell limpet	C
20	<u>Calliostoma zizyphinum</u>	Common or painted top shell	C
25	<u>Gibbula cineraria</u>	Grey top shell	C
26	<u>Gibbula umbilicalis</u>	Flat or purple top shell	A
41	<u>Littorina littorea</u>	Common or edible periwinkle	C
42	<u>Littorina saxatilis</u>	Rough periwinkle	A
45	<u>Littorina littoralis</u>	Flat periwinkle	C
87	<u>Turritella communis</u>	Tower shell	C
90	<u>Bittium reticulatum</u>	Needle shell	C
184a	<u>Trivia monacha</u>	European cowrie	C
190	<u>Nucella lapillus</u>	Common dog whelk	A
207	<u>Nassarius reticulatus</u>	Netted dog whelk	C
208	<u>Nassarius incrassatus</u>	Thick-lipped dog whelk	C

LAMELLIBRANCHIA

16	<u>Anomia ephippium</u>	Common saddle oyster	C
20	<u>Mytilus edulis</u>	Common mussel	C
42	<u>Chlamys varia</u>	Variegated scallop	C
43	<u>Chlamys distorta</u>	Hunchback scallop	C
106	<u>Venerupis pullustra</u>	Pullet carpet shell	C
	<u>Ensis sp.</u>		
151	<u>Hiatella arctica</u>		B

Finally, I should like to thank Mr. and Mrs. T. Pain for the help they gave me in preparing these lists, and obviously to thank my hosts on Inch Kenneth who put up with the shells and their attendant smells in their kitchen!

Jane Burgess,
Junior Member

WHO IS BRITANNIA? WHAT IS SHE?

Having recently compiled two indices to conchological periodicals, one is prompted, by no means for the first time, to a consideration of the precise meaning of 'Britain' as used by authors of faunistic or zoogeographical studies.

The Roman writers Catullus and the Elder Pliny, and also Camden (1586), included in their Britannia the entire British Isles (Albion & Hibernia), whereas in Cicero, Caesar, Mela and Tacitus the name signified what is now known as Great Britain. The Oxford English Dictionary defines 'Britain' as: "The proper name of the whole island containing England, Wales, and Scotland, with their dependencies; more fully called Great Britain," a name which became current with the proclamation of James the Sixth and First as King of Great Britain in 1604. It is not clear what is intended by 'dependencies,' but Ireland is certainly not included: what of the Channel Islands and the Isle of Man?

Thus instructed by so irrefragable an authority, one must accept the synonymy of 'Britain' with 'Great Britain.' If it is intended to include 'John Bull's other island,' then the term 'British Isles' should be employed, with purely geographical significance and no political implication. Authors of papers with titles such as "Columella in Britain," and "Snails and man in Britain" might claim some classical, and Elizabethan, vindication for their implicit inclusion of Ireland as part of Britain, though most Irishmen would most emphatically dissent. On the other hand, "Vitrea diaphana (Studer) in Britain," "Distribution of Dreissena polymorpha (Pallas) in Britain," "Three lamellibranchs apparently new to Britain," and "Distribution of Helicodonta obvoluta (Müll.) in Britain" get by, as the species concerned are absent from Ireland - even though the authors probably meant 'British Isles' when they wrote 'Britain.' Mrs. Shelagh Smith is exceptional in distinguishing between British and Irish waters. Our fraternity is entitled The Conchological Society of Great Britain and Ireland, not 'of Britain'.

For at least 2000 years the spelling 'Britannia' has been generally accepted as standard for the Latin name, though Brittania does have the sanction of a few early authors, e.g. the third century (A.D.) geographer Solinus and Martianus Capella, a Carthaginian poet of the late fifth century, as well as of Baeda, 'the Venerable Bede'. Another ancient spelling was Brittannia, and the Greek was Brettania, so in the spelling of her name Britannia in her girlhood, like the rest of her sex, was variable as the shade by the light quivering aspen made. In view of this inconsistency, it seems fussily pedantic, if not an unwarrantable liberty, to emend Truncatellina brittanica Pilsbry - particularly as Vallonia excentrica Sterki has been permitted to survive unscathed.

As to the multitudinous variants of 'Britain', Britannia's fickle waywardness is by contrast inflexible constancy: Breoton, Breoten, Bryten, Breten, Bretayne, Breteyn(e), Brutayne, Brytayne(e), Britan(ye), Britayn(e), Briteigne, Bretane, Brit(t)aine, Brit(t)any, Britanny, Britanie, besides a few Scottish versions. The island race has always been characterised by sturdy independence and robust individuality, not least in the spelling of the name of its sea-girt home. Rule Brit(t)an(n)ia!

A. E. (H)Elias, (H)Elyas, (H)Elis, (H)Ellis,
Heliseus, Heelis, Elles, El(l)ice, Ellis(s).

(Compiler's note: following the entry into the 'Common Market' in January, this article appears to be particularly appropriate!)

A METHOD FOR PREPARING OPERCULATE MOLLUSCS FOR A COLLECTION

The method was developed and perfected by trial and error during the course of field work on the Pacific Coast of North America. It is suitable for marine, brackish or freshwater operculates and works well even for large (up to 70 mm) individuals. The technique was designed for the preparation of dry specimens.

Normal methods involving removal of the animal, either mechanically or by rotting, have the disadvantage that the radula is usually discarded. In addition, the opercula may easily become separated from the shells and lost, or interchanged with those of other individuals. Our method has the advantage that the

operculum and radula are readily available for study, but are firmly attached to the shell by the dried animal. If the procedure is correctly followed any lingering odour is virtually eliminated. The method is fast in terms of time spent on operations, and is particularly suited for use on collecting trips to remote areas where time and equipment are limited.

It may be added that dropping shells straight into alcohol is unsatisfactory since this often causes the animal to retract so far that it is no longer visible and the operculum is not accessible. Gastropods having a tightly fitting and impermeable operculum may decompose since the alcohol cannot reach the tissues.

The procedure is as follows:

- 1) Place the molluscs in a small saucepan and add water of the salinity in which they live. Wait until most animals are moving about.
- 2) Heat the saucepan over the smallest possible flame from ambient temperature to 50°C. A small camping stove of the butane type is inexpensive and ideally suited for use in the field. As the temperature rises the molluscs will be anaesthetised and they will die with the opercula open.
- 3) Bring to the boil rapidly and remove from the source of heat. The material is thus sterilised. This is advisable as some putrifying bacteria seem to be able to survive in surprisingly strong alcohol. Do not continue boiling as the opercula may become detached. This step may be omitted if it is considered that damage to the shells will result.
- 4) Allow the shells to cool slowly, drain using a sieve and wash if necessary. Place the shells in absolute alcohol or undiluted isopropyl alcohol (available from many chemist shops, and not subject to excise restrictions). If absolute alcohol is not available the concentration should be no less than 70%, however we firmly recommend isopropyl alcohol.
- 5) After at least a week in alcohol the specimens may be drained and washed briefly in running water. Allow at least two weeks for drying. Individuals of species with a delicate periostracum or operculum should be transferred to glycerol-alcohol-water 5:65:30 and not washed before drying out. Glycerol (=glycerine) is left as a thin coating on the specimen after drying. It is hygroscopic, that is, it takes up moisture from the air, preventing proteinaceous structures from cracking. In this respect it is better than mineral oil which merely cuts down the rate of evaporation from the surface layers. Glycerol is easily removed at any time by washing with water. These considerations are particularly important when specimens are stored in a place with low relative humidity.

(Land operculates can be treated by drowning in tepid boiled water, or tepid water from a hot tap. Cold tap water is not suitable as it contains oxygen dissolved under pressure. The freshly drowned animals are placed straight into alcohol.)

Specimens prepared by this procedure are practically odourless. A large number of specimens can be processed with minimum effort, and they are valuable for a museum collection as all the hard parts are adequately preserved. When the operculum is required for examination it can be soaked off in water. The front part of the rehydrated animal can be warmed with dilute sodium hydroxide solution to obtain the radula.

Two cautionary notes are necessary:

- 1) The method is designed for producing dry specimens, and all anatomical detail is lost. It is essential to preserve some material in fluid.
- 2) Bulk processing is relatively easy by this method. No live animal should ever be taken without a specific scientific purpose. The collecting and habitat data should be given more attention than the specimen.

Martin and Susan Bishop

VERTIGO PUSILLA IN SUFFOLK

During field work in Suffolk in June 1972 a single living specimen of the land snail Vertigo pusilla was collected from a dry grassy roadside bank near the trackway to the "House in the Clouds" and windmill at Thorpeness, 3 miles north of Aldeburgh, East Suffolk (Nat. grid ref. 62/240598). This species is one of the three sinistral species of Vertigo in the British Isles and is characteristic of ivy on old walls and dry banks. The identification was confirmed by Dr. M. P. Kerney. This discovery was fortuitous as the area has been fairly well worked for non-marine Mollusca and collecting was done in only a few minutes whilst waiting for a party of students to assemble at the mini-bus!

V. pusilla is not a very common snail and there is only one previous record of its occurrence in East Suffolk (vice-county 25) by L. E. Adams in 1890 (J. Conch. 6, 278). Adams recorded the snail from a hedgebank near Woodbridge, about 15 miles from Thorpeness. The present record is thus only the second for the vice-county. There are sporadic records of V. pusilla from surrounding areas in the eastern counties and all of these except one are of late nineteenth century or early twentieth century date. The most recent record is of a living specimen recorded by Dr. L. Lloyd Evans from a lane north of Blo Norton in West Norfolk (62/0--8-- in 1967. The other, older records are:-

West Suffolk: at Hopton 52/9--7-- in 1909.

East Norfolk: at Roydon 62/0--8-- in 1920; Earlham 63/1--0-- in 1891 and Bramerton 63/2--0-- in 1894

West Norfolk: near Garboldisham 62/0--8-- in 1890.

It can be seen from the grid references that some of these records are in close vicinity to one another and Lloyd Evans has recorded the snail in the same 10 km. square from which two records were made in the last century.

These records were obtained from the data of the Society's mapping scheme.

J. E. Chatfield

ARION LUSITANICUS MABILLE AND OTHER MOLLUSCA IN A CHESHIRE GARDEN. (NGR SJ340828).

The Cheshire garden concerned is that of "The Nook", Uplands Road, Bromborough, and the following notes give an account of the Mollusca observed in it during the last thirty-five years (1937 to 1972).

My plot of land in Bromborough, which is in the Wirral peninsula of Cheshire, is one thousand square yards and this accommodates bungalow, garage and goathouse, as well as garden. It is on heavy wet boulder clay (non-calcareous) overlying Bunter Sandstone. At the foot of the back garden is a pleasing piece of undoubted native woodland (Patrick's Wood), clothing the steep side of the Dibbin valley.

The garden is rather unkempt and affords plenty of shelter for slugs and snails. Up to 1950 the following species lived in the garden; Discus rotundatus Müller, Arion circumscriptus Johnston, A. hortensis Férussac, A. ater (L.) s.s. (det. Quick), A. subfuscus (Drap.), Oxychilus cellarius (Müller), O. alliarius (Miller), Retinella nitidula (Drap.), Vitrima pellucida (Müller), Milax budapestensis (Hazay), Limax maximus L., Agriolimax reticulatus (Müller), A. caruanae Pollonera. A single empty shell of Oxychilus draparnaldi (Beck) was taken October 1957.

In 1950 I found the first Helix aspersa Müller; the species has increased steadily in numbers and has now almost reached plague proportions. A single Limax flavus L. was taken on 12 July 1968 in the house (built 1920) but no more specimens have been found either in house or garden. Of the other slugs present Arion ater s.l. was always common, black or more rarely brown specimens, but all those sent to Dr. Quick proved to be A. ater s.s. Arion subfuscus, a pretty vividly coloured form, occurs only sparingly.

This year, however, inspection of my poor garden on a mild and very wet evening revealed in addition to the normal slug fauna hordes of an unfamiliar Arion which Mr. Ellis has determined as Arion lusitanicus Mabilie. This species

was previously unknown not only in my garden but also in Cheshire and indeed in N. W. England. There is little doubt that it is a very recent arrival here, for certainly nothing like it has been seen in the 35 years I have lived here. Two or three years ago a neighbour planted 200 rosebushes in his garden immediately adjoining mine and I suspect that A. lusitanicus arrived with these bushes, but of course I have no proof of this. The rosebushes were obtained from many different growers in England, Scotland and Northern Ireland.

On the same warm wet night when A. lusitanicus was first noted, a single Cepaea nemoralis (L.) (a bandless yellow-shelled specimen) was found, the first one in the garden, although it lives uncommonly in Patrick's Wood.

There is also a colony of free-living Helix pomatia L. in my garden; I have had them, occasionally reinforced by fresh stock, since 1962. The first batch survived the phenomenally long and cold winter of 1962/1963. Marked adult specimens lived for five years after their release here. I think they may have bred at least once but I have not found either eggs or infants to confirm this.

They have a remarkably keen territorial sense, and should one be moved to fresh fields it promptly hastens back to its own kingdom. Once, one "homed" from a distance of about 90 ft., taking five hours on the journey.

The difference between the molluscan fauna of the garden and that of Patrick's Wood, an area of wet and undoubted native woodland, is quite considerable. Patrick's Wood contains about 40 species of non-marine Mollusca, some rare in Cheshire, the garden holds 17 species (plus the introduced Helix pomatia). Only 13 species occur in both woodland and garden, all common species which live in a wide variety of habitats.

It is not clear why the woodland species do not enter the garden. It is more than 50 years old, a tall old field-hedge of native holly, hawthorn, willow and elder borders one side and only a scrubby hedge of elder separates it from Patrick's Wood, yet the majority of the woodland species have not colonized the garden. There are suitably undisturbed corners available so other factors must be involved.

N. F. McMillan

NOTES ON THE OCCURRENCE OF BOETTGERILLA COMPRESSA SIMROTH
IN THE ENGLISH LAKE DISTRICT
(NEW TO BRITAIN)

On the 3rd September 1972, Dr. Barry Colville of Leeds located under stones amongst nettles, by the side of an old dry stone wall near The Abbey. Windermere (Grid Ref. 34/403985) three specimens of a slug, which he was unable to identify. The specimens were handed to one of us (A.N.) for identification who concluded that the only species they could be was the Continental Boettgerilla compressa Simroth (= B. vermiformis Wiktor = B. pallens Simroth). Two of the three specimens were subsequently forwarded to Dr. C. O. van Regteren Altena of the Natural History Museum in Leiden, who stated that he was convinced that the specimens were B. compressa, but in only a semi-adult condition.

The occurrence of this species is an interesting addition to our fauna, and its spread on the continent of Europe suggests that it may soon become one of the more common and widely distributed slugs in Britain, in much the same fashion as Agriolimax caruanae Pollonera and Milax budapestensis (Hazay).

In general appearance Boettgerilla resembles a small slender specimen of Milax gagates (Drap.), much more slender and graceful than even M. budapestensis. It can be distinguished from M. budapestensis by its dark coloured keel (young specimens of M. budapestensis have a light coloured keel) which runs the whole length from the hind end of the mantle to the tip of its tail and is compressed from side to side causing it to stand out like a sharp fin. M. gagates is distinctly plumper; its foot-sole is broader; its mantle shield is rounded behind and distinctly shagreened and it is buckled by the rather large shell. M. gagates is rather more greenish-brown and less bluish-grey than Boettgerilla and the keel is of the same colour as/or darker than its background. Boettgerilla by

comparison is more slenderly built with a narrower foot sole. The mantle shield is in the form of a slightly rounded V at the hinder end and shows fine concentric grooves. The very small shell is placed towards the back of the mantle and does not bulge up. Juvenile specimens of Boettgerilla are of a creamy white colour turning bluish-grey towards maturity. The keel is darker than the background, and very sharp.

FIELD CHARACTERS

No external shell; mantle concentrically ridged; respiratory orifice behind the centre of the mantle. The sharp dark dorsal keel does extend to the posterior margin of the mantle; tail slightly obliquely truncated; posterior margin of the mantle angled. Colour bluish-grey; length 30-40 mm; breadth 3-5 mm.

Prior to publication of this find in the Journal of Conchology, the authors of this note would like to see any specimens which collectors may suspect as possibly being this species, and would be grateful if they could be forwarded to Mr. Adrian Norris at the Leeds City Museums, Municipal Buildings, Leeds, LS1 3AA, either alive or preserved, for verification.

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Wiktor, A., 1972. Boettgerilla pallens Simroth, 1919. Informations de la Societe Belge de Malacologie, Bulletin mensuel, serie 1, pp. 145-148.

B. Colville, L. Lloyd Evans, A. Norris, Leeds, 10th. January 1973

FIELD MEETING AT SILVERDALE, LANCASHIRE, 15 JULY 1972

Three members met at Lancaster Station and proceeded by car to Leighton Moss Nature Reserve near Silverdale. (Grid ref. 34485750)

Three sites were examined, a wooded limestone quarry, the marshes of the Nature Reserve and finally the exit stream from the Reserve.

a) Wooded Quarry (Grid Ref. 34481755)

<u>Acicula fusca</u> (Montagu)	<u>Helix hortensis</u> Muller
<u>Carychium minimum</u> (Muller)	<u>Helix nemoralis</u> L.
<u>Carychium tridentatum</u> (Risso)	<u>Helix aspersa</u> Muller
<u>Pyramidula rupestris</u> (Draparnaud)	<u>Hygromia striolata</u> (C. Pfeiffer)
<u>Lauria cylindracea</u> (da Costa)	<u>Hygromia hispida</u> (L.)
<u>Ena obscura</u> (Muller)	<u>Helicella caperata</u> (Montagu)
<u>Clausilia bidentata</u> (Strom)	<u>Discus rotundatus</u> (Muller)
<u>Vallonia excentrica</u> Sterki	
<u>Marpessa laminata</u> (Montagu)	<u>Oxychilus cellarius</u> (Muller)
	<u>Oxychilus alliarius</u> (Miller)
<u>Arion circumscriptus</u> s.s.	<u>Oxychilus helveticus</u> (Blum)
<u>Arion hortensis</u> Férussac	<u>Retinella radiatula</u> (Alder)
<u>Arion ater</u> agg.	<u>Retinella pura</u> (Alder)
<u>Euconulus fulvus</u> (Muller)	<u>Retinella nitidula</u> (Drap.)
<u>Vitrea crystallina</u> (Muller)	
<u>Vitrina pellucida</u> (Muller)	
<u>Agriolimax reticulatus</u> (Muller)	

a ditch by the quarry yielded specimens of:-

Planorbis vortex (L.)

Pisidium personatum Malm

b) Marshes (Grid Ref. 34481750)

Due to heavy rain the marshes were flooded, the footpath through them being under several inches of water, consequently it was not possible to penetrate into the marshes in search of semi-aquatic species. Hence the list of species collected was small, consisting of:-

Valvata cristata Müller
Lymnaea peregra (Müller)
Planorbis leucostoma Millet
Planorbis albus Müller
Planorbis crista (L.)

Succinea pfeifferi (Rossmassler)
Zonitoides nitidus (Müller)
Agriolimax laevis (Müller)
Pisidium obtusale (Lamarck)

c) Outflow Stream (Grid Ref. 34476739)

As with the marsh the outflow river was very poor because of flooding. We managed to collect:-

Valvata piscinalis (Müller)
Lymnaea palustris (Müller)
Lymnaea peregra (Müller)

Potamopyrgus jenkinsi (A. E. Smith)
Sphaerium lacustre (Müller)
Pisidium personatum Malm

I must thank Dr. M. P. Kerney for his determination of the species of Pisidia.

G. E. Whitfield

FIELD MEETING IN CHESHIRE, 26th. AUGUST 1972

Eight members and two visitors met at Winsford Station with the intention of examining certain unexplored regions of East Cheshire in order to improve the area census of Mollusca. Two sites were marked out, within two miles of each other, but different habitats and in different ten kilometre squares.

The first of these was Crabmill Flash (Grid ref. 33737605), an area of low-lying, marshy ground, flooded in one part to make a nature reserve and used as a chemical and rubbish tip in another. The site was altogether very poor but some enthusiastic work produced a sizeable increase in the list of species for this square. The molluscs found consisted of:-

Potamopyrgus jenkinsi (A. E. Smith)
Carychium minimum (Müller)
Lymnaea truncatula (Müller)
Lymnaea palustris (Müller)
Lymnaea peregra (Müller)
Succinea sp. - juvenile
Cochlicopa lubrica (Müller)
Cochlicopa lubricella (Porri)
Helix nemoralis Müller
Hygromia hispida (L.)
Discus rotundatus (Müller)

Arion ater agg.
Arion intermedius Normand
Arion subfuscus (Draparnaud)
Arion hortensis Férussac
Arion silvaticus
Euconulus fulvus Müller
Oxychilus alliarius Miller
Retinella nitidula (Drap.)
Zonitoides nitidus (Müller)
Vittrina pellucida (Müller)

Sphaerium corneum (L.)
Pisidium casertanum (Poli) det. M.P.Kerney
Pisidium nitidum Jenyns det. M.P.Kerney

Agriolimax reticulatus Müller
Agriolimax laevis (Müller)

The Trent and Mersey canal, which runs by the Flash, was examined but was found to be extremely dirty and oily, containing no life of any form apart from bacteria and the occasional insect.

The state of the canal at this point contrasts strongly with its state at the next site we examined, namely a series of locks through which water flows down into the polluted stretch at a village near Wheelock (Grid ref. 33765590). The site also includes, alongside the canal, a disused railway line and a used chemicals tip, both toxic and non-toxic chemicals being dumped, including large amounts of lime ash.

The canal and its surrounds yielded a total of 34 species consisting of:-

Potamopyrgus jenkinsi (A. E. Smith)
Bithynia tentaculata (L.)
Bithynia leachii (Sheppard)
Carychium minimum (Müller)
Lymnaea stagnalis (L.)
Lymnaea peregra (Müller)
Physa sp.
Planorbis carinatus Müller

Discus rotundatus (Müller)
Arion intermedius Normand
Arion circumscriptus ss.
Arion hortensis Férussac
Arion subfuscus (Draparnaud)
Arion ater agg.

Planorbis planorbis (L.)
Planorbis vortex (L.)
Planorbis albus (Müller)

Succinea pfeifferi Rossmassler
Cochlicopa lubrica (Müller)
Helix nemoralis (Müller)
Hygromia hispida (L.)
Hygromia striolata (C. Pfeiffer)
Helicella caperata (Montagu)

Oxychilus cellarius (Müller)
Oxychilus alliarius (Miller)
Retinella radiatula (Alder)
Retinella nitidula (Drap)
Zonitoides nitidus (Müller)
Milax budapestensis (Hazay)
Agriolimax reticulatus Müller
Agriolimax laevis (Müller)

Anodonta anatina (L.)
Sphaerium corneum (L.)
Pisidium casertanum (Poli)

I would like to thank Dr. M. P. Kerney for the determination of the species of Pisidia.

G. E. Whitfield

REPORT OF FIELD MEETING HELD AT SOUTHPORT, LANCASHIRE, 21st. OCTOBER 1972

A group including 7 members and 4 visitors met at the railway station at 1.30 p.m. and proceeded immediately to the foreshore for several hours' collecting in weather that was fairly warm but with dull skies and one short spell of drizzle. On this part of the west coast the weather has been comparatively calm during the summer and autumn months and very little new material was present on the sands. In fact, what was available was old, discoloured and much of it just broken debris. We were very surprised therefore on making our joint tally at the end of the afternoon, to find the list contained 43 species. One that is new to the Southport list, Ensis phaxoides van Urk, has probably been confused in the past with E. ensis (L.), but differs from that species in being noticeably tapered at either end, and here I am quoting the leader of our field meeting, Mrs. N. F. McMillan. The list of species taken was as follows:-

Gibbula cineraria (L.)
Littorina littorea (L.)
Turritella communis Risso
Clathrus clathrus (L.)
C. turtonis (Turton)
Aporrhais pes-pelecani (L.)
Natica catena (da Costa)
N. poliana Chiaje
Nucella lapillus (L.)
Ocenebra erinacea (L.)
Colus gracilis (da Costa)
Neptunea antiqua (L.)
Buccinum undatum L.
Acteon tornatilis (L.)

Nucula turgida Leckenby & Marshall
(a single valve, W.F.E.)
Mytilus edulis L.
Ostrea edulis L.
Chlamys varia (L.)
C. opercularis (L.)
Cyprina islandica (L.)

Cardium echinatum (L.)
C. edule L.
Dosinia lupinus (L.) (2 sep. single valves,
N.F.McM. & W.F.E.)
Venus striatula (da Costa)
Donax vittatus (da Costa)
Tellina tenuis da Costa
T. fabula Gmelin
Macoma balthica (L.)
Scrobicularia plana (da Costa)
Abra alba (W. Wood)
Gari fervensis Gmelin
Pharus legumen (L.)
Ensis arcuatus (Jeffreys)
E. phaxoides van Urk (det. van Urk)
Solen marginatus Montagu
Mactra corallina (L.)
Spisula solida (L.)
S. subtruncata (da Costa)
Lutraria lutraria (L.)
Mya truncata L.
M. arenaria L.
Corbula gibba (Olivi)
Barnea candida (L.)

Wm. F. Edwards

FIELD MEETING IN THE BASINGSTOKE AREA, 22nd. OCTOBER 1972

Ten members and friends met at Basingstoke station to go on the annual Autumn slug foray. The morning was spent in Webb's Copse and Fryingdown Copse (SU/645461-647471). As was expected from the preceding dry spell slugs were very difficult to find and we had to search hard to locate such commonplace species as Arion hortensis, A. intermedius and Agriolimax reticulatus. Snails were a little

easier to find but still scarce. The dense canopy of such woods prevents dew forming with the result that the ground becomes much drier than in more exposed sites. Add to this the effects of a dry summer and conditions become very poor for molluscs. By lunch, which was taken at this site, we had located the following species:-

Carychium minimum
Cochlicopa lubrica
Acanthinula aculeata
Marpessa laminata
Helix aspersa
Hygromia striolata
H. hispida
Discus rotundatus
Agriolimax reticulatus

Arion intermedius
A. circumscriptus (juv.)
A. hortensis
Vitrea crystallina
Oxychilus cellarius
O. alliarius
Retinella pura
R. nitidula
Vitrina pellucida

After lunch the party drove to Hawthorn Plantation (SU/678335), an open oak wood without coppice, and Kitwood Plantation, a hazel coppice across the road. Collecting was a little better in the open site and added juvenile Arion ater and Milax budapestensis* to the list of slugs seen. Other species recorded were:-

Cochlicopa lubrica
C. lubricella*
Acanthinula aculeata
Clausilia rolfhii
Hygromia striolata
H. hispida
Discus rotundatus
Agriolimax reticulatus

Arion intermedius
A. circumscriptus s.s.
A. hortensis
Oxychilus cellarius
Retinella pura
R. nitidula
Vitrina pellucida

*indicates a new record for 10km square SU/63

Since no freshwater molluscs had been recorded for square SU/63 a brief stop was made at an overgrown pond full of soft rush (Juncus effusus) and horsetail (Equisetum sp.) at the top of Swelling Hill (SU/663329). This produced Lymnaea palustris* and Pisidium obtusale* only and was followed by another freshwater stop in the headwaters of the River Alre, a tributary of the Itchen, just north of Bishops Sutton (SU/608322). Here a shallow chalk stream emerges from some water-cress beds and yielded:-

Valvata cristata*
V. piscinalis*
Lymnaea palustris
L. peregra*
Physa fontinalis*
Planorbis vortex*
P. leucostoma*
P. contortus*

Succinea pfeifferi*
Vallonia costata* (dead shell)
Hygromia striolata
H. hispida
Monacha granulata*
Arion intermedius
Oxychilus cellarius
Pisidium nitidum*

*indicates new records

A "home brew" of coffee stimulated participants at "The Dean" (SU/634268) where a search was made in rather acid oak and birch woods beside the main road. Again slugs were difficult to find but we did manage to confirm both forms of Arion circumscriptus (i.e. A. circ. s.s. and A. circ. sylvaticus). A full list from this site follows:-

Carychium tridentatum
Acanthinula aculeata
Vallonia costata
Clausilia rolfhii*
Helix nemoralis* (dead shell)
Hygromia striolata
Monacha cantiana
Punctum pygmaeum
Discus rotundatus

Arion intermedius
A. hortensis
Vitrea sp. (juvenile)
Oxychilus cellarius
O. alliarius
Retinella pura
R. nitidula
Vitrina pellucida

*new records for square SU/62.

The next two brief stops were in and around Cheriton. First at Cheriton Mill (SU/579296) for freshwater species in the headwaters of the River Itchen. This site produced a soggy newspaper under which about a dozen slugs representing four species were found. It seemed almost as many as we had seen all day and Agriolimax laevis was added to the list of slugs seen. The second stop was at Cheriton Church (SU/583284). Together these sites produced the following species:-

Valvata cristata
V. piscinalis
Potamopyrgus jenkinsi* (dead only)
Bithynia tentaculata
Carychium minimum (dead shells)
C. tridentatum
Lymnaea palustris
L. peregra
Physa fontinalis
Planorbis planorbis
P. vortex
P. crista*
P. contortus
Segmentina complanata* (dead shell)
Succinea pfeifferi*
Cochlicopa lubrica
Vertigo pygmaea* (dead shell)
Lauria cylindracea
Vallonia costata*
Helix hortensis

Helix aspersa
Hygromia striolata
H. hispida
Monacha granulata
Discus rotundatus
Arion intermedius
A. circumscriptus sylvaticus
A. hortensis
Euconulus sp.
Vitrea contracta
Oxychilus cellarius
Retinella pura
R. nitidula
Zonitoides nitidus
Agriolimax reticulatus
A. laevis
Pisidium amnicum
P. milium
P. subtruncatum
P. nitidum

*new records for square SU/52.

A brief final stop at dusk on Abbotstone Down (SU/583360) demonstrated that the local authorities remove the toilets from this popular spot for winter, much to everyone's annoyance! Dr. Kerney found Cochlicopa lubrica, Discus rotundatus, Oxychilus alliarius and Retinella pura by sieving in an oak wood but it was too dark to continue searching for molluscs.

The party returned to Basingstoke station at approximately 18.30 after an unsuccessful slug foray but a pleasant day-out which added about 20 new records to the non-marine census.

Christopher R. C. Paul

GENERAL NOTES

PERILS OF THE DEEP

Letter dated 29 June 1947 - "I had an interesting experience at Bookham Common on Friday, namely being attacked by a Medicinal Leech (Hirudo medicinalis). I waded into a pond and was making play with the shell-scoop when I felt a pricking on my leg, but did not take much notice at first, and then saw that a leech, about three inches long, was gorging itself on my life-blood. I was so taken by surprise that I hastily pulled it off and dropped it, instead of letting it finish its meal and drop off. However, I managed to catch another, which now resides in the lab. The characteristic 3-punctured wound went on bleeding for two hours, owing to the anticoagulin that leeches inject, and my sock was soaked with blood when I got home. I have never come across the Medicinal Leech before and they are said to be rare, so this is an interesting discovery. One wonders how often they get a meal, as it must be seldom that anyone paddles in their pond and no animals drink there."

A. E. Ellis

PLEASE NOTE CHANGE OF ADDRESS (omitted from the last List of Members)

Mrs. Thora Whitehead, [REDACTED], Indooroopilly, Brisbane, Queensland 4068, Australia. Interests: A, B, F and G, world-wide marine.

Patricia Highsmith, Eleven (Heinemann, 1970; Penguin Books, 1972) contains two molluscan stories: "The Quest for Blank Claveringi", which was noticed in The

Conchologists' Newsletter, June 1972, p.265, and "The Snail-Watcher." Although the snails in the second story are said to be 'the freshwater type', it is clear that they are land snails, and indeed the cover design is a striking colour photo, front view, of Helix aspersa, by David Thorpe.

Beryl Rands

MR. S. J. LONG OF PISMO BEACH, CALIFORNIA, wishes to exchange a subscription to the Journal of Conchology for the Molluscan Digest.

The Molluscan Digest is compiled and published monthly by Jack Brookshire and Steven Long. Its purpose is to disseminate timely information on publications, people, and events concerned with malacology. The emphasis is placed upon reporting the recent molluscan literature. Volume 1 of the Molluscan Digest (1971) contained 2000 bibliographic citations for books, articles, and theses on molluscan subjects which were published during 1970 and 1971. The coverage is worldwide and includes every aspect of the study of molluscs.

If you are interested, a sample can be obtained from Mrs. C. J. Pain, [REDACTED], Millbank, London, [REDACTED].

SHELLS FOR SALE

Browse in baskets full of shells from all parts of the world - at Eaton's Shell Shop, 16 Manette Street, off Charing Cross Road, London, W1V 5LB (01-437 9391).

FIELD MEETING IN MAJORCA: A PRELIMINARY NOTE

From 5 - 8 January 1973 the first foreign field meeting of the Society took place in Majorca of the Balearic Islands and was attended by 17 adults and 2 junior members. In this venture the group took advantage of a package tour arrangement which took them to Palma Nova. From there a coach took the party out each day to various collecting sites.

Most people were interested in marine molluscs but everyone took part in all aspects of the collecting including a survey of waste ground near the hotel at night by torch-light. The latter excursion yielded an abundance of limacid slugs and demonstrated the opportunist nature of slugs and snails in respect of human rubbish.

The first two days were spent largely in the vicinity of San Jordi in the south of the island, an area which proved good for marine molluscs, both for shells on the strand-line and also live animals on the rocky ledges of the narrow inter-tidal fringe. As well as bivalves, gastropods and scaphopods, two specimens of Octopus were found. En route to San Jordi land molluscs were collected from a limestone wall near Campos and on the second day, collections were made from the dried river bed of Torrent de Garronda, the coastal fringe at La Rapita and a quarry and a cactus patch (Opuntia) near Se Salines just north of San Jordi. Whilst collecting snails from the cactus, members also sampled its highly edible red fruit. The final day was spent in the higher ground of the south-west. Here the party collected from a pine wood and deep valley near Paquera and later on the shore, coastal gardens and nearby pine woods at Paquera. At this point the geologists of the party studied an old raised beach deposit of a former sea level, at about 2 metres and which included bivalve shells. Lunch on departure day appropriately involved a paella with molluscan contents of Loligo (squid) and Mytilus (mussel).

In all, the party returned laden with molluscs of various shapes and sizes (and smells!). When these are identified a fairly long list of species should result, especially of marine ones. About 20 - 25 species of snails and slugs are expected from each grid square and those were all terrestrial since freshwater environments are scarce in a Mediterranean island composed largely of limestone. Some of the species we found were ones familiar to us from the British fauna e.g. Helix aspersa, Cochlicella acuta, Littorina neritoides and Mactra corallina, but others e.g. Ruminea decollata, Otala lactea, Gibbula adamsoni and Patella caerulea were those typical of a Mediterranean fauna. The eventual species list from this excursion will be sent to the Biological Record Centre for the European invertebrate survey and a list published in a later issue of the Newsletter for future

reference. Another foreign field meeting is being planned (see below).

J. E. Chatfield and B. W. Barrett

A SECOND FOREIGN FIELD MEETING

There are plans to organise a second foreign field meeting, based on a long weekend in the winter months. Possible places include Portugal (Atlantic coast) and Majorca. Likely dates are November 1973, January 1974 or November 1974.

ANYONE INTERESTED SHOULD CONTACT:

Mr. B. W. BARRETT, ENVIRONMENTAL SCIENCE, COLLEGE OF EDUCATION, LOCKSWAY ROAD, MILTON, PORTSMOUTH.

INTERNATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE A.(n.s.)89

ANNOUNCEMENT

Required six-month's 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. Nomencl. 29, part 1, 1st. May 1972)

- 1987 Grant of precedence to NASSARIIDAE Iredale, 1916, over CYCLONASSINAE Gill, 1871, DORSANINAE Cossmann, 1901, ALECTRIONIDAE Dall, 1908, and ARCULARIIDAE Hedley, 1915 (Gastropoda)

(see Bull. zool. Nomencl. 29, part 3, 30th. November 1972)

- 1092 Validation of Aglaja Renier, 1807, Aglaja depicta Renier, 1807, Aglaja tricolorata Renier, 1807, and AGLAJIDAE Bergh, 1894, with suppression of Doridium Meckel, 1809 (Gastropoda)

- 2001 Type-species for Lucina Bruguiere, 1797 (Pelecypoda)

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.

Margaret Doyle, Scientific Assistant

EXCHANGES OF PERIODICALS

The Society quite often receives invitations to exchange periodicals with Clubs and learned Societies abroad, and although such courtesy is always appreciated the Society is unable to co-operate. It may be a surprise to some people to know that the Society has no library, although it was not always so. At one time its collection of books and runs of periodicals was a proud possession and its librarian was a member of the Council. The outbreak of war in 1939 caused the authorities in Manchester, which was the headquarters of the Society in those days, to require the library room for civil defence purposes, at very short notice. The library itself was piled in disorder on the floor of a rather damp cellar at Leeds Museum, and had it not been for the efforts of members Mr. and Mrs. Thurgood, librarians, it would have been totally destroyed. As it was, it deteriorated, and when, seven or eight years later, the Museum was forced to ask for the release of the room they had provided free for so long, the housing of the library became an urgent problem. The Council did all within its power to find alternative accommodation at a price it could afford but could not do so, and mindful that there had been very little pressure from the membership to make the library available to the members, very reluctantly sold off the books and periodicals in 1952, retaining only the Journal stocks of back numbers. These themselves have now been sold.

An advertisement in the Newsletter may well secure a private exchange of publications.

T.E.C.

WANTED. Copies of the American journal 'NAUTILUS' from Vol. 70, onwards. Reasonable condition and price please - Mr. John D. R. Fryer, Department of Geology, King's College, University of London, Strand, London, WC2R 2LS

ANNOUNCEMENT. Members will be interested to learn that the Council has appointed Mr. Peter Oliver as Public Relations Officer (P.R.O.) for the Society for a term of 3 years from the Annual General Meeting in February.

BIOLOGICAL RECORDING WORKING GROUP - FIELD MEETING. This group, founded two years ago to stimulate biological recording in Wales, will hold its third field meeting, in the Welshpool area, during the period 8 - 10 June 1973.

The purpose of these meetings, which are on a multi-disciplinary basis, is twofold: (i) to concentrate recording of distribution of plants and animals in areas hitherto neglected (ii) to provide help and guidance in recording techniques for interested amateur naturalists. Members of the Working Group come from the National Museum of Wales, the University of Wales and the Nature Conservancy.

Anyone wishing for further details of the above meeting should contact: MISS C. M. MERRETT, DEPARTMENT OF ZOOLOGY, NATIONAL MUSEUM OF WALES, CARDIFF, CF1 3NP

SUBSCRIPTIONS - 1973. Members are reminded that the subscriptions for 1973 became due on 1st. January last and the Hon. Treasurer will be much obliged if those who have not already paid their dues will do so promptly, without causing the extra and wasteful expense of reminders. We feel sure members will appreciate that it is much easier to plan the Society's annual expenditure if we can rely on prompt payment of the money due to the Society at the proper time.

DECEASED. We are very sorry to announce the death of the Rev. H. E. J. Biggs on Friday 19th. January last. An obituary will appear in the 'Journal of Conchology' later on. Some members may have seen the announcement in the Daily Telegraph in which the request was made 'no flowers, donations to The Church Missionary Society and Christian Aid'. If any member would like to make a donation, in memory of Mr. Biggs, please send it to the Hon. Secretary, Mrs. E. B. Rands, and in due course she will send cheques to the Charities mentioned.

Please note that matters relating to Junior Membership and 'Papers for Students' should be referred to Mrs. Rands for the time being. As soon as permanent arrangements have been made, we will advise members.

Hon. Secretary, Mrs. E.B.Rands, [REDACTED], Luton, Bedfordshire, [REDACTED]

LIBRARY OF THE LATE REV. H. E. J. BIGGS. This large and fine collection of books and papers from world-wide sources in several languages is to be disposed of and Mr. Biggs wished that members of the Society should have the first choice of the material at less than dealers' prices. The library comprises most of the standard works, old and new, papers and bulletins of Universities, Museums and Societies, and papers divided into individual subjects (i.e. species or genera) together with Mr. Biggs's own manuscript notes of considerable interest and value in themselves. Most of these books and papers are out of print and virtually unobtainable.

As many members must know, Mr. Biggs's knowledge and interests covered an enormously wide field of marine, freshwater and terrestrial Mollusca and the library reflects this range - it contains material of value to the general collector and the specialist, over a large part of the globe.

Anyone interested in purchasing books, or material on single subjects, is asked to contact Mrs. K. R. Smythe, [REDACTED], Bognor Regis, Sussex, [REDACTED], England.

FOOTNOTE to 'Who is Britannia?' - p. 302. There is no such word in Latin as excentrica; eccentros, from Gk. ekkentros, was used once by Martial: later this was further latinised as eccentrus. Accordingly excentrica is faulty at both ends. The reason for disapprobation of the word in the Newsletter, No. 22, p. 15, is misconceived.

A.E.E.

ESSAY COMPETITION FOR JUNIOR MEMBERS. We are proposing to hold a competition for the best essay on some aspect of conchology submitted by Junior Members. There will be a small cash prize and, of course, winning entries will be printed in the Conchologists' Newsletter. Full details will be issued in the June Newsletter, but this advance notice is to give you plenty of time to think up ideas and, if you are having an early holiday, make notes in preparation. This idea was suggested by the late Rev. H. E. J. Biggs.

EXCHANGE WANTED. Mrs. J. A. Bhagat, [REDACTED], Pan Gully, Gowalla Tank, Bombay 26, India, would like to exchange shells with members of the Society.

Produced by THE CONCHOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND

GEOLOGY AND SHELL COLLECTING IN THE NETHERLANDS ANTILLES AND PANAMA

From December 1970 to February 1971 I served as sedimentologist on board the "Glomar Challenger" during its 15th. expedition in a deep-sea drilling project. Like some other members of the scientific staff, I took advantage of opportunities to further a collecting hobby. I, of course, had shells on my mind.

The "Glomar Challenger", a research vessel sponsored by the National Science Foundation, was scheduled to drill into the bed of the Caribbean Sea for two months. We sailed from SanJuan, Puerto Rico, and disbanded in Panama. Our objective was to drill to the crustal basement, using new devices allowing the re-entry of the bit into the drill hole, so as to gather information on the history of the Caribbean Sea.

We started in the Venezuelan basin on December 6, and had put down nearly 4,000 metres (12,000 feet) of pipe when it was discovered that the thrusters, which hold the vessel in constant position even in rough seas, had broken down. The nearest port with an available dry dock was Curacao. So, on December 9 we landed at Willemstad for an unexpected five day vacation. This "pre-cruise vacation", as we called it, was a good opportunity for geological activities on land, and for familiarizing ourselves with the surroundings. On the 10th. we flew to Bonaire, which we covered in one day in a sort of geological safari. During the criss-crossing of the island, however, I was thinking about molluscs, although the increasing heaviness of the rocks in my bags didn't encourage the collecting of anything more. But I was there, and I wanted to observe what I could of the molluscan population. The first colony I found was of Cerion uva Linné, a land species very abundant in calcareous areas of the northern hilly parts of the island. It lives from the top of the hills to the littoral areas.

At Boca Olivia, the north eastern coast is rugged and exposed to strong wave action. The tide was low, but the crashing of the surf on the slippery rocks hindered thorough investigation of the lower intertidal zone. In the upper zone the molluscan fauna was rather poor in species, but rich in individuals, especially Nerita versicolor Gmelin and Nerita peloronta Linné, the latter particularly conspicuous for its size - up to 4 cm in width. A few Littorina ziczac Gmelin and fewer Nodilittorina tuberculata Menke were in the rock crevices. Washed ashore beyond the upper tide line was an abundance of dead Fissurella barbadensis Gmelin, Acmaea pustulata Helbling, and Diodora cayennensis Lamarck, and a single Cymatium pileare Linné.

At the south eastern tip of the island, about 4 km north of Willemstoren Lighthouse, is a rocky, rugged shore with exposed, weathered corals as sharp as knives. The molluscan fauna seemed much the same as at Boca Olivia, but here the Nerita peloronta weren't larger than 2 cm. There was one Echininus nodulosus Pfeiffer among the nerites, and no Littorina. I found no live shells in the flat, southern area or in the salt marshes. But the beauty of these vast marshes, with thousands of flamingoes flushing the wilderness with their vivid pink, would make a bird-watching trip worthwhile.

In Curacao, I visited only the area near our motel (the Holiday Inn), along Gov. Van Slobbweg, but at greater length. Behind the Inn the shore is very similar to Bonaire. The rocky area extends up to the water plant, and the island is quite flat beyond. The molluscan population of the rocky area is comparable to Bonaire's, but more diversified, including Nerita tessellata Gmelin (common), Tectarius muricatus Valenciennes, Purpura patula Linné (fairly rare), and Acanthopleura granulata Gmelin (abundant in the lower

intertidal zone only). Whereas T. muricatus was rare to moderately common in the rocky area, it was abundant in the flat intertidal zone west of the water plant, even above the high tide line. Among the dead shells on the littoral, large Cittarium pica Linne were quite frequent.

In contrast to the exposed ocean shore, the lagoons along "Pater Euwens Weg" were devoid of shells, except for the one about 50 yards east of the Inn. This is an isolated body of water densely populated with mangrove trees, mainly on the southern side. A few sewer pipes discharge a nearly constant flow of fresh water into it. Surprisingly, the molluscs found there live in the fresh water flow or nearby, and nowhere else. Neritina virginea Linne and Cerithium variabile C.B. Adams were so abundant they crawled on each other. A few Crepidula cf. convexa Say were attached to shells of both species.

After leaving Curacao we worked at sea for two months; our next port was Panama City where we stayed two days in working sessions. I took two extra days for "touristing" and shell collecting on the Pacific side of Panama. My first collecting spot in Panama City at Avenida Balboa, near Calle 12 de Octubre, turned out to be a heaven for two species particularly: Nerita funiculata Menke and Thais kiosquiformis Duclos. They were everywhere in the intertidal zone, on the big basaltic boulders and blocks that make up the foundation of the Avenue. Collecting is possible here only at low tide. The sewer system of the city drains right into the bay, and the water is so filthy that no one would dare go into it. In addition to the barnacles that grow in profusion, there was just one Crepidula cf. marginalis Broderip on the rocks, and it was being eaten alive by a Thais kiosquiformis. I saw dead shells of several other species which I later found alive at San Felipe.

The following day I went west of the Canal Zone area to a locality called Vera Cruz by my hired driver, but it's probably the spot labelled Camaron on the Esso map. This region varies from wide, sandy beaches to rocky littoral and mangrove swamps. A lengthy search along the beach ended up with only dead specimens of Protothaca grata Say which was very abundant, as were other dead shells of minor interest to me. Disappointed with the beach, and sweating under the hot midday sun, I took refuge in the shaded mangrove area. Once my eyes got used to the relative darkness I went on again after living molluscs, but was not successful until I looked closely at the trees and realised that they were sheltering swarms of Littorina varia Sowerby, which live on the branches and the base of the trunks, immersed at high tide. A few Nerita scabricosta Lamarck were among the littorines, but only at the base of the trees, and closer to the tidal pools, though not in the pools. In addition to the rather dull L. varia, I found a very few Littorina zebra Donovan in the tree crevices, clustered with L. varia and N. scabricosta, the latter showing the same beautiful, vivid orange and dark shades as L. zebra. The tidal pools were crowded with all kinds of dead shells, all occupied by hermit crabs.

About 400 yards west of this point the rocky intertidal zone was populated mainly with large Nerita scabricosta in extreme abundance. The environment is different from the preceding areas, for the basaltic boulders (here in situ) are quite free of dirt and algae. Some colourful, nicely banded specimens of nerites were among the predominantly dark population. They totalled less than one percent and were evenly distributed among the others. Nerita funiculata and Thais kiosquiformis were also present, and I found it interesting that they were far fewer and not so well developed as those at Avenida Balboa. This environment was clearly the optimum for N. scabricosta, whereas the filthy, nitrogenous environment at the Avenue was optimum for the other two. There were quite a few Ostrea columbiensis Hanley living only in the mid-intertidal zone. As the tide was rising fast and I was on a rocky promontory well over 50 yards from the high tide line, I had to give up my observations and get to safety.

In the middle of the beach, adjacent to this rocky area, a huge basaltic block at least six feet high sheltered a very populous community of Littorina aspera Philippi. They were clustered in the zone which corresponds to the high tide limit, and even slightly higher.

On my way back to the city I visited a forest preserve in the Canal Zone with the hope of collecting some beautiful tropical land snails that I imagined might be living in this luxuriant vegetation. My optimism faded away after a

long, unsuccessful search. I did find a few dead specimens of just one species, probably of the family Zonitidae, but they were in poor condition. Two factors might have been responsible for the scarcity of the land snails: first, the hygrometric conditions, since it was supposed to be the dry season; second, the nature of the soil, derived from the weathering of the basaltic substratum. Often this type of substratum, with little or no lime, does not bear as varied a molluscan fauna as is generally found in lime-rich areas.

Back from this collecting trip, I was visiting the old section of Panama City (San Felipe) in the late afternoon when I noticed a small cove near the government buildings and the "reforma agraria" building. The tide was at full ebb and water was still running down the tidal gullies in the steeply dipping, sandy beach. There were snails everywhere, busily burying themselves in the wet sand. Among them were Nassarius luteostoma Broderip & Sowerby, Nassarius complanatus Powys, and Anachis cf. costella Broderip & Sowerby. I had to act fast in order to collect some, because they disappeared quickly and for some reason are difficult to find, once dug into the sand. In contrast to the sandy upper intertidal zone, the lower intertidal and beyond has a rocky, although flat, bottom. There the community was entirely different - not a single nassa, whereas Cerithium stercusmuscarum Valenciennes nearly blanketed the rocks. Many were dead shells inhabited by hermit crabs, as in most of the localities previously visited. The species found at Avenida Balboa were also present, but again in negligible abundance as compared to the ceriths. The water here, though not as clean as in Vera Cruz, was not as polluted as at the Avenida Balboa. It is more exposed to wave action and to the open sea, the San Felipe area being a sort of peninsula.

In addition, I collected one Acanthina brevidentata Wood and a few Crepidula sp. The latter were clinging to the outside of the operculi of Cerithium stercusmuscarum - perhaps the best way of assuring both food and safety? At least one specimen of oyster was found attached to a Thais kiosquiformis, as were colonies of barnacles. By the time I had gathered these specimens it was getting dark, and I had to leave. On the sandy beach I noticed a fragment of Cypraea (Zonaria) robertsii Hidalgo and other dead shells. The nassas had already dug into the sand.

My trip was over. The following morning I flew back to New York with an appreciable molluscan swag, and to face the job that all shell collectors share with more or less pleasure: cleaning the shells.

Florentin J-M. R. Maurrasse

(with acknowledgments to the New York Shell Club, reprinted from the 'Notes', No. 173, June-August 1971)

AN OLD ENGLISH RIDDLE

Semec fedde sund helm theahte ond mec ytha wrugon eorthan
getenge fethe lease oft ic ongean muth ontynde -
nu wile monna sum min flaesc fretan felles nerecceth sith-
than heme of sidan seaxes orde hyd arypeth ond mec hra-
the sith than iteth unsodene.....

The above is as exact a transcription as a typewriter permits of one of the riddles in The Exeter Book (Liber Exoniensis), 'mycel Englisc boc be gehwilcum thingum on leoth-wirsan geworht' (a great English book on various subjects composed in verse), 'a folio volume of moderate size, written on vellum in a fair and rather fine hand of the tenth century' (Thorpe), the chief treasure of the library of Exeter Cathedral, to which it was presented by the founder of the library, Leofric (died 1072), the first Bishop of Exeter. The folio on which this riddle is inscribed has unfortunately suffered some damage and the conclusion is obliterated. The following is a translation:

The sea brought me forth (or fed me), a covering of water concealed me and waves hid me on earth (or near land) resting footless*. Often towards the flood my mouth I opened. Now some man will devour my flesh for my skin not recking, since from my side with knife's point having ripped my hide he then eats me uncooked.

This must surely be the earliest molluscan poem in the language, if such an uncouth pre-Conquest tongue is regarded as an embryonic form of English. The solutions of the riddles are not given, but few readers will fail to unravel this conundrum: in Old English it is an ostre. The next riddle, beginning 'Oft ic flodas,' may well be another oyster riddle, but it is very fragmentary. The Saxons were partial to these 'aenigmata': they helped to pass the long winter evenings. A thousand years later, this riddle has inspired this sonnet:

The sea my mother made me dwell
Beneath the surging ocean's swell,
O'erhead while thunderous rollers roar,
With foaming billows covered o'er
On seabed anchored still I bide,
Mouth often open to the tide.
But now some man will wreak my doom
My tender body to consume,
In no whit caring for my shell,
Sooner or later, who can tell,
With knife's sharp point he'll pierce my side
And from my flesh will strip my hide.
Alas! uncooked I'm eaten raw
And end my life within his maw.

There is some discrepancy in the numbering of the riddles: in Thorpe, the first publication and translation, the oyster riddle is No. 16 on p. 488 (there is another Riddle 16); in the collotype facsimile (1933), Fol. 127a, and in Mackie, p. 214, it is No. 76; in Knapp & Dobbie, p. 234, it is No. 77; in Baum, p. 27, it is No. 30.

It has been suggested that one of the other riddles, No. 73 (Mackie) or 74 (Knapp & Dobbie) also refers to a mollusc, namely the cuttlefish, but 'siren' is a far more likely interpretation. The oyster has also been confused with a siren: see The Life and Adventures of Martin Chuzzlewit, chapter 4.

I am greatly indebted for their kind assistance to Miss Joyce Packer, Assistant Librarian of Exeter Cathedral library, and to Miss Joan Lancaster and Mrs. Sheila Stirling of the Devon and Exeter Institution.

(*compare Through the Looking-Glass: "Their shoes were clean and neat - And this was odd, because, you know, They hadn't any feet.")

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ANOTHER SINISTRAL SLUG - MILAX GAGATES (DRAPARNAUD)

On 2 September 1971, a Milax gagates, found at the edge of a pasture by the Lough Swilly coast, north of Buncrana, Co. Donegal, laid some eggs while in the collector's pocket. Three slugs were hatched and kept in England, and when they were fairly well grown it was noticed that one of them was sinistral. In May 1972, when they were larger than the parent had been, one was removed, so that the sinistral individual would have to be involved if any mating took place. The odd pair were often seen in contact during June, but beyond what may have been preliminary investigations, no attempt at mating was observed. The slugs remained healthy, but laid no eggs. During September their appetities declined, and they were almost dead on September 19, when they were preserved.

Perhaps sinistral slugs are not so unusual. If unexpected, they may be very easily overlooked. The Arion intermedius (Newsletter 40, p. 251) was not observed until it was eight months old, and the Milax gagates was more difficult to spot in life, because of its greater external symmetry, broken by a small, inconspicuous breathing pore. The reversal of the internal organs showed more as the slugs matured, because the skin remained translucent and unpigmented except for a little dorsal shading. In the wild parent slugs, a black pigmentation extended over most of the body, and also the extreme edge of the foot and the central area of the sole. Black faeces were observed, suggesting a connection between the pigment and something in the natural diet, which the offspring lacked. The difference in size was considerable too. After shrinkage, death, and preservation in spirit, the wild slugs measure about 3 cm., and the progeny 4 cm. (sinistral) and 4.5 cm. (dextral). The sinistral specimen has its atrial stimulator protruded, which should ensure that it will not be overlooked again.

Stella M. Davies

SCHIZO?

There's something softly peaceable
about a little snail.
Snails never rail, they never nag;
they never shout,
just simply move about
on duty: -
theirs is an unexciting beauty
but it will never fail,
(though your impatient interest may sometimes flag.)
There's a moral to this somewhere;-
can't think what though,
that's the only snag
in writing about snails.
There they ARE. Imagination quails,
that could write an ode, an epic even,
about a shooting star.
But snails don't, I think, inspire.
They have no subtle fire
to make your pulse-rate higher.
(Does passionate desire
intoxicate a snail's Pappa
for its Mamma?)
Does some Zodiacal sign
or profoundest Law Divine
motivate these creatures, by the way? -
If you knew when they were born,
could these little things you scorn
be seen to have a Destiny like ours?
Could you chart their horoscopes
and plan their fates and hopes -
as they creep among the flowers,
are they beset by mystic Powers?
Are some of them born schizo?
Some born leaders?
Some born gay?

Stephen Lewis Ingham Pettit

MEETING OF NATIONAL BIOLOGICAL SOCIETIES, 1972

The annual meeting of representatives of Biological Societies organised by the Biological Record Centre, Monks Wood, was held on Saturday 18th. November 1972 at Juniper Hall Field Centre, Dorking, Surrey. It was attended by 3 representatives of this Society.

The meeting took place from 10.30 a.m. to 4.00 p.m. with a 2 hour lunch break to allow the maximum opportunity for informal discussion. Arising from the 1971 meeting a discussion of progress took place on a number of topics. These included: (a) Red data books (confidential information concerning sites of exceptionally rare species which might be endangered by collectors); (b) A common code of conduct to encourage biologists to study wild life in such a way that its future survival is not endangered. Where necessary individual societies were encouraged to formulate their own specialist code of conduct. It was strongly emphasised that excessive collecting should be discouraged wherever possible; (c) Future of provincial museums in view of recent government re-organisation; (d) Location of museum collections - a progress report on Mr. Cleevely's survey; (e) Marine schemes - Particular problems are evident in using different types of map reference. For shore work (between the tides) a normal Ordnance Survey grid reference is a convenient way of recording but for off-shore divers and those dredging from boats this method is not suitable. Other methods are being investigated. Details of this Society's mapping scheme for marine species were given and instruction leaflets and field recording cards were made available; (f) Dr. Perring lead some discussion on the construction of common species cards (one for land and one for marine species) for the use of general naturalists rather than specialists in one group. Some members of the meeting questioned the reliability of identifications sent in in this way; (g) Museum data - an outline was given of computer programming and its use in the storage of data and its retrieval in museums.

The morning ended with a short lecture on Rare Species Conservation. The importance was stressed of obtaining basic information on the numbers, detailed distribution, precise habitat requirements and food, the definition of a viable community and factors which result in the decrease of an endangered species. Such is essential to the formulation of an effective conservation policy. The aspects of money and manpower and also the differences between long and short-term policies were discussed. All of this endorsed the value of mapping.

After lunch there were 3 lectures, each concerned with a different aspect of work.

Biological Recording in Europe

Mr. Heath outlined the recent progress of mapping schemes in Europe. He reported the establishment and potential establishment of Biological Record Centres in different European countries. Concern over the environment in recent years seems to have stimulated interest in recording flora and fauna. Full details of the European scheme and cards are available from: Biological Record Centre, Monks Wood, Abbots Ripton, Huntingdonshire. Members of Societies were encouraged to participate. Mr. Heath reported on the first symposium on European mapping which was held in June 1972.

New Developments at B.R.C.

A report was given on new mapping schemes and cards, together with work on data storage.

Problems in multidisciplinary Recording

Mr. Bateman of the National Museum of Wales gave an account of a recording week-end held recently in Wales. The party consisted of 25 participants of which 15 were experienced recorders from a number of disciplines and 10 were new to recording. The group took a confined area in North Wales and they recorded as many aspects of the geology, botany and zoology as possible. The meeting fulfilled several functions including: collecting data for the mapping schemes in a fairly detailed way, training of new recorders and the publication of the data collected for the future use of other biologists concerned with College and University field courses.

J. E. Chatfield

PUBLICATIONS RECEIVED

'Poirieria', Vol. 6, Part 5, Nov. 1972 (Conchology Section, Auckland Institute & Museum, New Zealand)

A most useful illustrated review of the New Zealand Marginellidae is presented by N. W. Gardner. There are twenty species attributable to five subgenera; all species seem to be endemic with one exception. They rarely come to shore and mostly have to be obtained by dredging: one or two indeed are dwellers only in deep water. The illustrations are excellent and, with the short descriptions, perfectly adequate for identification purposes.

Rather unusual shelling conditions are described in an interesting article by A. Allo reporting a collecting trip to Lanyu (Orchid Island) a small island off the south east coast of Taiwan-Formosa.

An unusual gastropod, Pedicularia pacifica Pease, 1865 is dealt with very effectively. This rare shell, which comes from deep waters off the Three Kings Islands, has recently been found attached, limpet-fashion, to broken branches of coral dredged up from 100 fathoms. Removal of the animal leaves a scar and it is evident that the species is sessile. It is also capable of assuming the colour of its surroundings and has probably been overlooked in the past. These molluscs are allied to the Ovulidae but have a very flared outer lip.

A visit to Palm Valley in Central Australia 75 miles south of Alice Springs is described by J. Coles. The area is most unusual and the spectacular rocky landscape forms an ancient spot for initiation ceremonies among the Aborigines. The palms themselves are calculated to be up to 2000 years old. Seven species of land snails were collected, including a Succinea, and five freshwater snails.

Observations of a specimen of Lima in an aquarium tank induce new ideas about the creature's thought processes. The bivalve was actually Limaria orientalis and as usual with this family, it quickly built itself a nest of stones and bits of shell held together with byssal threads, from which it made excursions for up to a day at a time. The nest was also inhabited by a small and restless crab with commensal yearnings, but it was found that the Lima had spent a night in the construction of a very effective pebble wall to exclude its fellow inmate.

Editors: N. & N. Gardner, [REDACTED], Birkenhead, Auckland 10, New Zealand.

T.E.C.

FIELD MEETING - TO SANDWICH, KENT, 27th. MAY 1972

Grid reference - TR 350600 Census Area 13, Thames

The field meeting began with a violent thunderstorm in which one of our members was caught, too busy collecting to notice it creeping up behind her! The weather cleared except for a strong wind after lunch and the members began a good day's collecting.

97 species were collected, of which 16 were live records. A list of species, additional to the list for the Sandwich field meeting, 11.3.67, published in the Conchologists' Newsletter, Vol. 2, No. 21, page 11, is given below.

<u>Gibbula tumida</u>	B	<u>Clathrus clathratulus</u>	B
<u>Cantharidus montagui</u>	B	<u>Balcis alba</u>	B
<u>Tricolia pullus</u>	B	<u>Chrysallida spiralis</u>	B
<u>Lacuna vineta</u>	B	<u>Odostomia unidentata</u>	B
<u>Littorina littorea</u>	B	<u>Turbonilla elegantissima</u>	B
<u>Littorina littoralis</u>	B	<u>Dentalium vulgare</u>	B
<u>Hydrobia ventrosa</u>	B	<u>Modiolus barbatus</u>	B
<u>Potamopyrgus jenkinsi</u>	B	<u>Modiolus adriaticus</u>	C
<u>Hydrobia ulvae</u>	B	<u>Cerastoderma lamarcki</u>	C
<u>Cingula semicostata</u>	B	<u>Venus ovata</u>	C
<u>Alvania crassa</u>	B	<u>Venerupis saxatilis</u>	B

<u>Rissoa parva</u>	B	<u>Ensis arcuatus</u>	B
<u>Turritella communis</u>	C	<u>Corbula gibba</u>	C
<u>Bittium reticulatum</u>	B	<u>Barnea candida</u>	C
<u>Cerithiopsis tubercularis</u>	B	<u>Barnea parva</u>	C
<u>Triphora perversa</u>	B	<u>Teredo norvegica</u>	B
<u>Clathrus clathrus</u>	B	<u>Thracea distortia</u>	C
		<u>Sepia officinalis egg strings</u>	

Much of the collecting and identification of the small species was done by Dr. Joan Llewellyn-Jones.

The snail fauna of the dunes behind the beach was also investigated. All species which were found on the previous field meeting to Sandwich were found again, with the exception of Helicella gigaxi (L. Pfeiffer). Also found were: Monacha cantiana (Montagu), Monacha cartusiana (Müller) and Cochlicopa lubrica (Müller).

Celia Pain

FIELD MEETING AT ST. HELENS, LANCASHIRE, 11th. NOVEMBER 1972

Four members met at St. Helens to examine the site, known locally as the "Otties", where hot waste water from Pilkington's glass works is discharged into the canal. The bank was lined by anglers who were catching Cichlids up to about 8 inches long and who complained that Cichlids were driving out the Roach. Scooping in the warmest water near the outflow produced mainly baby Cichlids, but several juvenile Physa sp. - not P. fontinalis (L.) - and a few Planorbarius corneus (L.) were found. About a hundred yards down-stream at an angle in the canal a few Lymnaea peregra (Müller) and Lymnaea auricularia (L.) were seen on floating planks and more Physa sp. on a luxuriant growth of Lagarosiphon. In this very unusual habitat exotic species of plants, fish and molluscs seemed to outnumber the natives.

L. Lloyd-Evans

NO SUCH NUMBERS OF CONCHOLOGISTS

Under this title, A. E. Ellis, in the December 1972 Newsletter page 290, quoted a meeting of the Society attended by three people on 7 December 1946, which was never recorded in the minutes, and he speculates whether it was declared a 'non-meeting'. In fact the rules at that time specified that three was a quorum at all meetings, so this one should certainly have been minuted and the most probable reason was that none of the three people present bothered to do it. The then President was notoriously a poor correspondent and note-taker, and it was probably thought to be nobody else's duty!

Even had it been minuted, it would by no means have been an all-time 'low'. In the early days of the Society the names of those present at ordinary meetings were noted down by some of the Hon. Secretaries. In the seventies, the average attendance at meetings was five people and in the early nineties very many of the meetings were attended by three people only, almost invariably three of the four founder members. This did not prevent the full ritual of the meeting from being prosecuted and recorded, especially as on most occasions many people had sent exhibits - which were discussed in detail - gifts for the Society's cabinet, and books or exchange periodicals, for the Library. The minutes ran into four or six quarto pages closely written. On some occasions two people only attended but they would hold the meeting as usual, take the minutes, and have these ratified on the following occasion, thus 'legalising' the proceedings. Only on one or two occasions does one come across a sad note in the minute book, 'No meeting held, only the Hon. Secretary attending'. This state of things continued until the Society removed its headquarters from Leeds to Manchester in 1895, after which attendances at meetings rose considerably.

T. E. Crowley

SNAILY PROBLEMS

I think that the most recent one was brought to the notice of the public at large in the Sunday Times of 18 June 1972 by a group of teachers from the Burnholme Secondary School, York. They quoted from the GCE "O" level Mathematics paper 1, Syllabus B, June 7, 1972. Unfortunately, due probably to a misprint, the question was incorrect and anyone actually trying to answer it would have found themselves in some difficulty until they realised this particular point. The question quoted below has been corrected.

Question B.7. Two straight lines intersect at right angles at O. The point A is on one line and is 6 metres from O; the point B is on the other line and is 7 metres from O. At noon, a snail sets off from A and crawls directly away from O at 4 metres per hour. At the same time another snail sets off from B and crawls directly away from O at 3 metres per hour. State their distances from O at t hours after noon and prove that they are then d metres apart where

$$d^2 = 85 + 90t + 25t^2.$$

I particularly like their comments:- "May we congratulate the mathematicians of the Joint Matriculation Board for their awareness of the needs of youth in this modern world" and "Obviously it is this awareness of the importance of relating Maths to the vital problems of adult life that puts the setters of such problems way above run-of-the-mill teachers such as ourselves." Personally I always thought that people who studied snails were 'trend setters' - now it is again confirmed.

This business of setting snaily problems, though, is quite the 'in-thing' as in the Brain of Mid-Anglia competition held by the Cambridge Evening News, Friday March 5th. the very first question asked was as follows:- A snail climbs up a tree. During the day it climbs up 8 metres, but every night it slips down 5 metres. If the tree is twenty three metres high, on which day does it reach the top? (a) On the 4th. day (b) On the 5th. day (c) On the 6th. day (d) On the 7th. day, and (e) Never.

If you would like the answers get in touch with J. E. L. Jones, Cambridge

REPORT FROM MARINE CENSUS RECORDER No. 5, C.A.12

I would like to thank all those who have helped me in Area 12 by submitting records. The coast from Hunstanton to Cromer has had its fair share of both scientific research and collectors over the last few years. Cambridge University under Drs. F. S. J. Hollick, R. J. Skaer, K. A. Joysey and A. M. Bidder have all done work on this particular piece of coast both with students and without. The late Prof. C. F. A. Pantin has published work on this area and more recently both Dr. R. Hamond and R. B. Williams have published articles on the fauna of the Norfolk Coast. These works make a good foundation on which to build and I hope that many more records will be sent in the coming year from people who live on this coast as well as those that only take holidays there. Records eastwards from Cromer down to Lowestoft would be especially appreciated. For those interested in collecting along this coast, if they contact me I will let them have a small map showing the squares included in C.A.12 and also a master card of the species that one should be able to find in the area.

Below is a reference list for those interested in the fauna of this coast:-

1. Gilson, H.C., Hollick, F.S.J. and Pantin, C.F.A., 1944. Additions to the marine fauna of the Scolt Head region. Ann. Mag. nat. Hist., Ser.11, Vol.11, pp.231-6.
2. Hamond, R., 1963 (b). A preliminary report on the marine fauna of the north Norfolk Coast. Trans. Norfolk Norwich Nat. Soc., Vol.20, pp.2-31.
3. Hunt, O.D., 1971. Holkham Salts Hole, an isolated salt-water pond with relict features. An account based on studies by the late C. F. A. Pantin. J. Mar. Biol. Ass. U.K., Vol.51, pp.717-41.
4. Pantin, C.F.A., Hollick, F.S.J., Joysey, K.A. and Bidder, A.M., 1960. In Scolt Head Island, 2nd. ed. Edited by J. A. Steers. 269pp. Cambridge: W. Heffer and Sons Ltd.

5. Serventy, D.L., 1934. In Scolt Head Island, 1st. ed. Edited by J. A. Steers., 234pp. Cambridge: W. Heffer and Sons Ltd.
6. Williams, R.B., (1972). Notes on the History and invertebrate fauna of Poikilohaline Lagoon in Norfolk. J. Mar. Biol. Ass. U.K., 1972. 52, 945-963.
7. Hamond, R. The Marine Mollusca of Norfolk. Trans. Norfolk Norwich Nat. Soc. 1972.
8. Walton, C.L., 1908. Nudibranchiata collected in the North Sea by the S.S. "Huxley" during July and August, 1907. J. Mar. Biol. Ass. U.K. (N.S.) 8, pp.227-240.
9. Wilson, P., 1867 and 1888. Hunstanton and its neighbourhood (2nd. and 11th. ed.) King's Lynn.
10. Marine Biol. Ass. U.K., 1970. Report of the Council for 1969-70. Invertebrates. J. Mar. Biol. Ass. U.K., Vol.50, p.1155.

If anyone else knows of any other references for this area I should very much like to have them so that they can be added to this list.

J.E.L.J.

GENERAL NOTES

HOOPER'S HYPOTHESIS. Dr. M. D. Hooper, of the Nature Conservancy, Monks Wood, has propounded the generalisation that the number of different kinds of shrubs and trees which compose a hedgerow is an indication of its age, which can be roughly estimated on the basis of one species per century. Pure hawthorn hedges are recent, not more than 150 years old, whereas a mixed hedge of ten species may date back 1000 years. Conchologists might investigate how applicable this proposition is to Mollusca: does one species a century hold good for snails too? Other factors, such as soil, aspect, locality and climate must also be taken into account. One's impression is that ancient mixed hedges on calcareous soil, 'little lines of sportive wood run wild,' are likely to harbour a comparatively rich molluscan fauna. Here is a field of research which might appeal particularly to the young conchologist in search of a 'project'.

A. E. Ellis

BIOGRAPHICAL FOOTNOTE. Letter dated 28 September 1941: "Winckworth has just returned from a holiday in Scotland, at Nethy Bridge on the Spey, where he had been staying with Sir D'Arcy Thompson. Whether it was in honour of the occasion I don't know, but he said he had expended one clothing coupon on a new tie. I asked him why this extravagance, and he said his other tie had got a bit shabby after being worn continuously since the last war. He always wears a black tie which resembles a bootlace, and the new one is in keeping with the tradition of its predecessor."

HISTORICAL FOOTNOTE. Letter dated 9 February 1941: "Yesterday we had a meeting of the Conchological Society, at the Linnean Society's rooms, followed by a meeting of the Malacological Society. The meeting of the first named Society was transformed into a meeting of the second by the simple process of my vacating the chair, and Winckworth (President of the Malac. Soc.) moving in."

A. E. Ellis

SPECIAL REQUEST 10-KILOMETRE SQUARE MAPPING SCHEME FOR NON-MARINE MOLLUSCA.

Since we hope to start work on our Mollusc atlas towards the end of this year in readiness for publication some time in 1974, we shall be most grateful if members will do their best to fill the remaining 'gaps' on the distribution map by the end of 1973. Please send any records or queries to Dr. M. P. Kerney, Hon. Recorder for non-Marine Mollusca, Dept. of Geology, Imperial College, London, SW7 2BP.

JUNIOR MEMBERSHIP. Please note that Dr. Adrian J. Rundle is now in charge of Junior Membership and he will be pleased to supply information, leaflets and application forms on request. His address is:- [REDACTED], Kew, Richmond, Surrey, [REDACTED].

ESSAY COMPETITION FOR JUNIOR MEMBERS. This competition was mentioned briefly in

the March Newsletter. Now here are the details:-

There will be two age groups, from 12 to 15 and from 15 to 18. A cash prize of £2.00 will be given for the best entry in each group. Your essay should not exceed 1200 words and can be on any aspect of conchology, field work, collecting experiences, museum visits or the life of molluscan animals, to give a few examples. Besides having ideas and imagination, it is important to be able to express your thoughts clearly and precisely in good English with correct spelling! All entries must be sent to:- P. E. Negus, [REDACTED], Chelsea Bridge Road, London, [REDACTED] any time after you receive this Newsletter until the end of 1973. Print your full name, address and date of birth at the top of your essay. Please write clearly or, if you can, type your entry. The two winning essays will be printed in a future Newsletter and possibly some other entries of interest and merit will be printed also even though they have not been judged the winning entries.

P.E.N.

LOOKING AHEAD. 1976 will be the Centenary year of the Conchological Society - the Journal of Conchology was first published in 1874, two years before the founding of this Society. The Council will be very interested to receive ideas and suggestions from members for celebrating this special forthcoming occasion. Please write to Mr. Peter Oliver, the P.R.O. and let him know your thoughts on this subject. Naturally the question of expense will have to be considered!

THE BRITISH SHELL COLLECTORS' CLUB. The British Shell Collectors' Club was founded in 1972, to cater for non-specialist collectors of marine shells, and to encourage the exchange of news, views and specimens between collectors. A regular newsletter is issued. It is hoped that club members will be able to take part in the marine census. Amicable relations with the Club have already been established by the Conchological Society and a joint field meeting to Sandwich, Kent, on Saturday 7th. July, has been arranged.

It is also planned to invite club members to attend a Conchological Society meeting on an appropriate occasion. For further information on the Club, please contact the General Secretary, Mr. Michael Dixon, [REDACTED], Rainham, Gillingham, Kent.

WANTED. Boreal and Arctic species of *Neptunea*, Recent and Pleistocene. Purchase or exchange. T. Pain, [REDACTED], Millbank, London, [REDACTED].

SUSAN SMITH, [REDACTED], Wootton Bridge, Ryde, Isle of Wight (aged 16 - a new Junior Member) would like to swop shells with people, preferably with someone in 'tropical waters'!

PETER FARRANT, [REDACTED], Melville, Hamilton, New Zealand, has a collection of New Zealand sea-shore molluscs and is keen to obtain some overseas examples. He wonders if any young person around 16 would be interested in exchanges.

MRS. M. ASHLEY COOPER, [REDACTED], Kalk Bay, Cape, South Africa, would like to exchange shells with members of the Society. She has access to the sea and can procure specimens easily.

MICHAEL L. LOPER, [REDACTED], FPO New York, New York 09551, stationed in Puerto Rico, has a large collection of shells from that part of the Caribbean and would like to exchange for British shells. In particular, he has specimens of the following genera available: *Cassis*, *Strombus*, *Cymatium*, *Charonia*, etc..

MRS. V. R. D. SIMPSON, [REDACTED], Hartlepool, Co. Durham, has a number of shells which she believes may be rare. She would be glad if anyone who is in her area would call and look at them - perhaps to purchase them.

THE NATIONAL ENVIRONMENT COMPETITION - sponsored by the Bottlers of Coca-Cola. Open to young people who will be over 15 and under 26 on January 31, 1974. Write to: National Environment Competition 1973, Tudor House, The Heath, Weybridge, Surrey, for full information and entry form.

SHELLS FOR SALE. Browse in baskets full of shells from all parts of the world - at Eaton's Shell Shop, 16 Manette Street, off Charing Cross Road, London, W1V 5LB (01-437 9391).

MRS. K. V. TIPPETT, [REDACTED], Sticker, St. Austell, Cornwall, [REDACTED], is prepared to sell her late husband's fine collection of shells, mainly marine, about half of which are exotic. They are housed in 22 of a 24-drawer polished cabinet, each drawer measuring 15½" x 14½". Overall size of cabinet being 41" high, 37" wide and 17" deep. The 10 drawers of British shells contain mostly named species, and are believed to be almost exclusively Cornish, and many specimens of each species are represented: for instance one whole drawer is given up to colour and band varieties of the Purple Dog-whelk, *Nucella lapillus*, and another to species and varieties of winkles (*Littorina* spp.). Of the 12 drawers of exotic species, 3 contain Cowries (about 50 species), 1 has Cones and 1 Olives. Any offers, please?

LIBRARY OF THE LATE REV. H. E. J. BIGGS. This has been disposed of incredibly rapidly. Mrs. Kathleen Smythe offers her apologies to all the members who have written about it and to whom she has been completely unable to reply - the letters have been legion! No doubt they will continue to arrive after her departure to the Arabian Gulf on April 21st.

KEVIN ANDERSEN, [REDACTED], Port Vila, New Hebrides, has for exchange specimens of *Cypraea*, *Conus*, *Olives*, *Mitra*, *Terebra*, *Murex* and *Volutes* and other rare shells. Anyone interested, please?

HON. SECRETARY. PLEASE NOTE THAT THE HON. SECRETARY WILL NOT BE ABLE TO DEAL WITH ANY CORRESPONDENCE DURING THE MONTH OF AUGUST.

PAPERS FOR STUDENTS. The prices of the 'Papers' have had to be revised due to postage increases and cost of reprinting; for details of new prices, please apply to Dr. Adrian J. Rundle, [REDACTED], Kew, Richmond, Surrey, [REDACTED]

Produced by THE CONCHOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND

HORSE MUSSELS (MODIOLUS MODIOLUS L.) AS FOOD

I was recently very surprised to see Horse Mussels (*Modiolus modiolus*) on sale in a fish-shop in the east end of Glasgow. These were exposed in the window, labelled "Clabbydoos 5p each". As I had always believed with Step (1945) that the affix "Horse" signifies that these mussels are coarse and unfit for food, I made some enquiries at the shop. I was told that far from being inedible they have been eaten in Glasgow for a considerable number of years and are, in fact, considered quite a delicacy, -- which was corroborated at another fish-shop in the centre of Glasgow. The source of these molluscs is Loch Fyne in the Firth of Clyde, or sometimes off the N.E. coast of Scotland.

I am informed by Mr. K. Thomas of the British Museum (Natural History) that it is an edible mollusc and is eaten quite a lot in Canada. "Another person informs me that she has seen a recipe using *M. modiolus* in a book on Mediterranean cookery. As most specimens ... are (obtained) from dredging (they) are not generally available in fish-shops here".

The name under which they are sold is of some interest. It appears to be a corruption of the Gaelic Clab-dubh, pl. Claba-dubha, the literal meaning of which would be "black, large-mouth". There is, however, much confusion in the Gaelic names of plants and animals and the same name is frequently given to many, sometimes widely-differing, species. Thus Dwelly (1941) equates Clab-dubh with 1) Mussel, 2) Phola (sic!), whereas McNeill (1910) gives *Cyprina islandica*. On another page, Dwelly, quoting from A. Forbes "Gaelic Names of Beasts etc." gives Cockles, Clams. The usual Gaelic name for the Common Mussel (*Mytilus edulis* L.) is Feusgan (from Feusag: a bean) or Feasgan and McNeill gives for Horse Mussel Feasgan -mor (i.e. the Great Mussel).

REFERENCES.

- Dwelly, E. 1941. The Illustrated Gaelic-English Dictionary. 4th. ed. pp. 199, 200.
McNeill, M. 1910. Colonsay, One of the Hebrides. Its Plants Gaelic Names of Birds, Fishes, etc..... p. 42.
Step, E. 1945. Shell Life. New ed. p. 68.

J. Davies

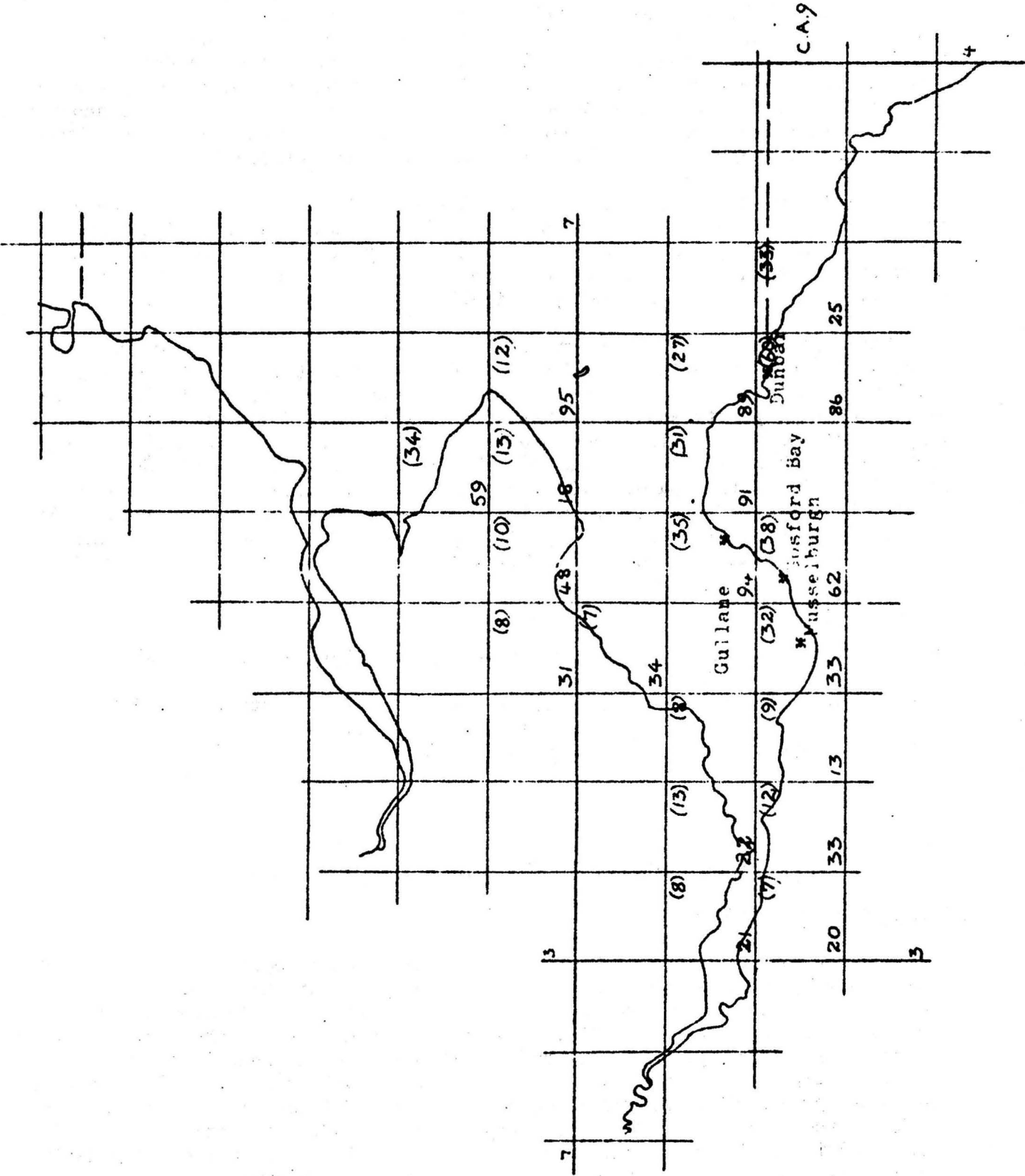
PROGRESS REPORT ON CENSUS AREAS 7, 30, 31 and 32Census area 7 (Firth of Forth)

Mapping of this area has been given a considerable boost by the increased impetus given to the Marine Census by the development of the 10km. square recording plan, and I have now sufficient records to start plotting all the post-1950 ones on a grid map (Fig. 1) which can be up-dated each year. Older records cannot meaningfully be plotted in this way as in general they are patchy and imprecise. Since 1971 (Conchologists' Newsletter, p. 217) there have been many upgradings to AR and a few to BR. Some of these are my own findings, mostly as the result of a fortunate trip to Gullane after a storm and from off-shore dredging at Musselburgh. However, I am also indebted to the Gatty Marine Laboratory, St. Andrews, for *Lomanotus marmoratus* AR (specimen in Royal Scottish Museum) new to the C.A. and updating of *Armina loveni*, *Dendronotus frondosus*, *Doto coronata*, *Tritonia plebeia*, *Philbertia linearis*, *Sepiola atlantica* and *Alloteuthis subulata*, specimens of all being retained. The

Lothians River Purification Board have provided the unconfirmed A record of Tellina squalida. I have found Adalaria proxima and Odostomia albella several times at Dunbar. Mr. A. Mathieson, County Ranger for East Lothian, found driftwood containing Teredo norvagicus at Gosford Bay. The total number of species ever found now stands at 305, with 114 found live since 1950.

Census Area 7 Firth of Forth

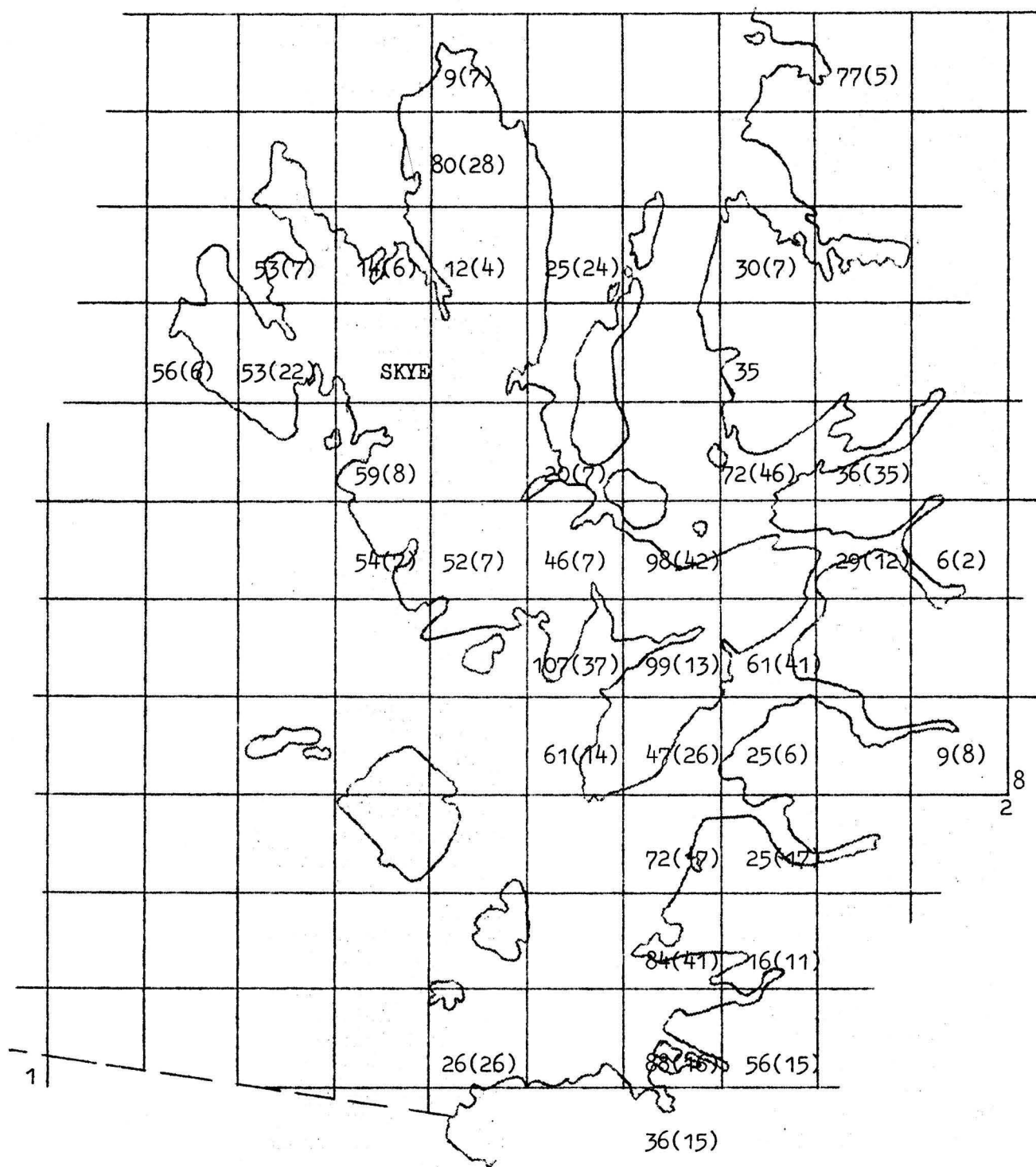
Records 1950-1972 A records in brackets



Census area 30 (Minch)

Records for C.A. 30 are more numerous and patchy than for C.A. 7 and are particularly concentrated in the Skye area, to which I was fortunate to add many records in March of this year. The total number of species found is 369, with 149 AR, showing the greater size and importance of C.A. 30 relative to C.A. 7. The northern part of the area has few records, (visits to West Sutherland and Wester Ross would be appreciated). The southern part contains about 100 10km. squares with coastline and the best worked (Fig. 2) bear witness to repeated visits, not necessarily by the same person. It is pleasing that different people usually manage to find different species in the same square. My field trip to Skye has shown that one would be unlikely to find a great many species in those squares at present blank or sparsely represented. New additions are more likely to be found in the more "populated" areas where there is a good variety of favourable environment. I am especially grateful to Mrs. A. M. Brockbank for the great number of squares she has visited, and to Mr. S. Angus working on home ground in the Outer Hebrides.

Figure 2. Map of Skye and the adjacent mainland showing the numbers of species found per 10km. square post-1950 (live records in brackets)



Census areas 31 (Lewis) and 32 (Uist)

These areas comprise the west coasts of the Outer Hebrides and have not been worked in detail. My own visits last year (C.A.32) and this year (C.A.31) and work done by Mr. A. R. Waterston show the considerable potential of this part of Britain. A wide variety of species is possible, including such strangers as Spirula spirula.

Shelagh M. Smith

List of species found live in C.A. 30 post-1950, names and order according to the field card list.

Acanthochitona communis

A. crinitus

Callochiton achatinus

Ischnochiton albus

Lepidochitona cinereus

Lepidopleurus asellus

Tonicella rubra

Acmaea testudinalis

A. virginea

Aporrhais pespelicani

Bittium reticulatum

Buccinum undatum

B. humphresianum

Calliostoma zizyphinum

Capulus ungaricus

Cingula cingillus

C. semicostata

C. semistriata

Colus gracilis

Emarginula reticulata

Gibbula cineraria

G. magus

G. tumida

G. umbilicalis

Hydrobia neglecta

H. ulvae

H. ventrosa

Lacuna pallidula

L. parva

L. vineta

Lamellaria perspicua

Littorina littoralis

L. littorea

L. neritoides

L. saxatilis

Margarites helycinus

Nassarius incrassatus

N. reticulatus

Natica alderi

N. catena

Neptunea antiqua

Nucella lapillus

Patella aspera

P. vulgata

Patina pellucida

Potamopyrgus jenkinsi

Rissoa rufilabrum

R. parva

Skenea serpuloides

Skeneopsis planorbis

Trivia arctica

T. monacha

Turritella communis

Velutina plicatilis

V. velutina

Adalaria proxima

Aeolidia papillosa

Aplysia punctata

Archidoris pseudoargus

Elysia viridis

Facelina auricularia

Goniodoris nodosa

Odostomia albella

Onchidoris fusca

O. muricata

Scaphander lignarius

Spiratella retroversa

Dentalium entalis

Abra alba

A. nitida

Acanthocardia echinata

Anomia ephippium

Arca tetragona

Arctica islandica

Astarte sulcata

Cardium edule

C. lamarcki

C. minimum

C. ovale

C. scabrum

Chlamys distorta

C. nivea

C. opercularis

C. striata

C. tigerina

Cochlodesma praetenua

Corbula gibba

Donax vittatus

Dosinia exoleta

D. lupinus

Ensis arcuatus

E. siliqua

Gari costulata

G. fervensis

G. tellinella

Glycymeris glycymeris

Heteranomia squamula

Hiatella arctica

H. striata

Kellia suborbicularis

Lima loscombi

Lucinoma borealis

Lutraria lutraria

Macoma balthica

Mactra corallina

Modiolus modiolus

M. phaseolinus

Monia patelliformis

M. squama

Montacuta ferruginosa
Musculus discors
M. marmoratus
Mya arenaria
M. truncata
Myrtea spinifera
Mysella bidentata
Mytilus edulis
Nucula sulcata
Nucula turgida
Nuculana minuta
Ostrea edulis
Pandora pinna
Pecten maximus
Pinna fragilis
Pseudamussium septemradiatum
Scrobicularia plana
Spisula subtruncata

Tellina fabula
T. pygmaea
T. tenuis
Thracia phaseolina
T. villosiuscula
Thyasira croulinensis
T. ferruginea
T. flexuosa
Turtonia minuta
Venerupis aurea
V. pullastra
V. saxatilis
Venus casina
V. fasciata
V. ovata
V. striatula
Yoldiella tomlini

Eledone cirrhosa

THEBA PISANA (MULLER) IN GUERNSEY: 1961 to 1971

It would be superfluous to name the authors who have written about Theba pisana (Müller) in Guernsey, a comprehensive list of the names of these authors has been given by Crowley (1961) and Barrett (1972).

Eight days after the publication of the note by Crowley (1961), we arrived on the island for the first time. On the evening of 24 July 1961, whilst taking a walk round Rousse, towards the Route du Port Grat, a large thriving colony of T. pisana was observed on the sandbank by Baie de Port Grat. This colony extended for about 150 yards, almost to the Route du Port Grat. Helicella virgata (da Costa) and Cochlicella acuta (Müller), were abundant in this locality.

T. pisana was found in abundance on herbage, particularly on Juncus acutus L. and Raphanus raphanistrum L., round Port Saif. Also on the landward side of Portinfer Road, between the bungalow 'West Point' to 'Sidney House', La Passe.

On waste ground between Mare de Cateret and the Wayside Cheer Tea-rooms, on small plants, short turf and stones by the roadside, and on a sandbank from the coast road Saline Bay, towards Grand Rocques.

At Vazon a large colony was found on ground about 18 inches higher than the sea-wall, between the last two German blockhouses, towards the southern end of the bay, on the landward side of Vazon Road, from the house 'La Grand Marais', northwards for about 100 yards. The snails were very conspicuous on Senecio jacobaea L. and Foeniculum vulgare Miller. Helix aspersa (Müller) of large size were found behind brambles growing by the sea-wall, there was a colony of Hygromia hispida L.. H. virgata and C. acuta were abundant.

On our second visit to Guernsey, August 1963, I saw mechanical excavators loading the sand, which formed the sandbank by Port Grat into lorries, presumably for building purposes.

T. pisana was found abundant round Portinfer Bay, on fennel, ragwort, wild radish and marram grass. This snail was found in the gardens of the bungalows Parkstone and Seabreeze, La Passe. On roadside herbage Baie des Pequeries, Portinfer Road.

We arrived for our third visit to Guernsey, August 1965. The sandbank at Port Grat was almost back to what I had known prior to the excavation of the sand, plants were starting to grow. Light drizzle was falling one evening, fiftyfive pairs of T. pisana were seen to be copulating, a few were depositing eggs in the sand. The sandbank nearer to Rousse had not been disturbed, these snails were still to be seen on the gorse bushes (Ulex europeus L.). At Portinfer Bay the herbage had been mown down, the snails were found clustered round the dry short stumps of the plants. This was also the case at Vazon, the

herbage on the landward side of the road had been cut down. Those snails on the seaward side of the road were still plentiful on ground higher than the sea-wall, and on the slopes beside a German blockhouse. The ground level with the road was almost bare of herbage, here holiday makers had parked their cars, the colony of H. hispida was destroyed.

On our fourth visit to the island, September 1971, I found more changes had taken place. Those T. pisana, in the gardens at La Passe, were greatly reduced in numbers. The herbage on the sandbank at Port Grat had been mown very short with gang mowers, the colony of T. pisana was extinct, except for a few specimens in the gorse bushes. The same thing was happening on the landward side of the road from Grand Rocques to Mare de Cateret, also at Vazon. T. pisana was, so far as I could observe, extinct, where it had previously been abundant, outside the Wayside Cheer Tea-rooms, only a few specimens were found among herbage round the adjacent telephone box, and the boundary fence of the house 'Glenalough'. The colonies at Port Soif and Portinfer Bay were still thriving in spite of the herbage having been scythed down as in 1965. Those on the landward side of the road were about the same as when first found. The largest colony at Vazon opposite the house 'La Grand Marais' was reduced to about four dozen snails, the other colonies hereabouts and at Albecq Bay have been mentioned by Barrett (1972).

Despite repeated searching at Vale Castle, 1961-63, not even a fragment of dead T. pisana was found. Living molluscs were H. hispida, H. nemoralis and H. aspersa. I could find no trace of T. pisana at Bordeaux, this last mentioned locality was reported to have been destroyed by Quarry tipping, Tomlin (1925).

Jee (1967) gives an almost identical account of T. pisana in Guernsey as that of Crowley (1961).

Variation

The variations of many of the Guernsey T. pisana are so hopelessly intermingled it is impossible to place them into distinct named varieties, many have abrupt commencement or termination of distinct banding. The type of T. pisana as depicted by Taylor (3 Pl.xxx) is not common. The best specimens we have come from the garden of the bungalow Seabreeze. Of those which can be placed into distinct varieties, we have the var. subconica Monterosato, var. alta Locard, var. depressa Requien, var. major Locard is given as one third larger than the type and was plentiful outside the tea-rooms; var. ampla Monterosato is described as a large somewhat solid shell, dia. 25mm, ht. 18mm. Those we have from Portinfer Bay measure dia. 26mm, ht. 20mm. var. minor Bourguignat, Saline Bay, var. faux-rosea Monterosato, Port Soif and Vazon, var. linolata Moquin-Tandon, Port Grat, Port Soif and Saline Bay, var. musica Monterosato, Port Soif, var. coalita Taylor, Port Grat, var. menkeana Moquin-Tandon, in most of the habitats, var. subzonata Moquin-Tandon, Port Grat and Port Soif, var. sagittifera Taylor, Port Soif, var. diaphana Bourguignat, at Vazon. Shell pure white, with transparent banding. Jeffreys (1862) includes the transparent variety (diaphana), the vars. alba and albida Moquin-Tandon, with the var. alba of Shuttleworth. Tate (1866), Williams (1888), Adams (1896), Swanton (1906), Ellis (1926), Step (1945) and Crowley (1961) all seem to have followed Jeffreys in lumping all these varieties under the name alba Shuttleworth.

I have only ever seen one living shell of the var. alba Moquin-Tandon, which was on a stem of Dacus carota L. growing in a fissure near the top of the cliff, The Esplanade, Tenby, July 1954.

Habits and Habitat.

Taylor (Monograph 3, 374) states, "T. pisana is most plentiful in dry and arid regions, especially within the influence of the sea, it lives and prospers under a variety of conditions, on dry sandy plains, in gardens, by the roadsides, in hedges, and on hill slopes; usually adhering in great profusion to thistles and other plants, the trunks of trees and bushes, and on walls, usually in places fully exposed to the sun, the animal having a wonderful capacity for enduring solar heat".

At Tenby, even in winter, according to the observations of the late

Mr. A. G. Stubbs, the adults when hibernating do not seek shelter from the cold by burrowing or hiding in suitable crevices, but still continue to cling to the dead stems of herbaceous plants upon which they feed in summer.

During the severe winter of 1963, there was, I believe, up to 20 degrees of frost recorded in Guernsey; it was the first recorded frost for over 20 years. In spite of this very inclement weather, T. pisana did not seem to have suffered too much, indeed there were many of these snails with shells larger than those collected during 1961.

Boycott (1934) places it in his list of xerophiles, a group of eight calcicole species which effect open, sunny places.

On my first visit to Tenby, July 1954, I was collecting T. pisana by the roadside, Marsh Road, opposite a row of terraced cottages and the tenant of the centre cottage enquired what I was doing. When I explained, he promptly invited me into his home and to the garden at the rear. That part of the garden which received no sunlight was devoid of T. pisana. In the upper half of the garden open to the sun for most of the day, these snails covered all the plants, the low brick wall and the ivy which covered the top of the wall. A few yards outside the low boundary wall at the top of this garden, there was a large conical outcrop of rock, which was covered with these snails to the height of about six feet; there was a marked termination of these snails on the northern sunless side of this rock.

Jeffreys (1862; 209) quotes the statement of Mr. Barlee, that he had procured live specimens by digging some inches in the sandhills, where the snails had buried themselves, the weather being very hot and the herbage not affording much shelter from the sun's rays. A number of authors have copied this statement. So far during my observations of these snails, I have not found any that have buried themselves. Both at Guernsey and Tenby, they aestivate on the food plants during long periods of very hot dry weather.

Most of the habitats at Tenby, and on the west coast of Guernsey, are very exposed to the prevailing S.W. winds. The strong transparent epiphragm is strong enough to keep the snails in place on the stems of the plants, and marram grass, although the plants were being waved about rather wildly, with a strong on-shore wind. Some of the snails may find a little shelter, when in a depressed area, or to the lee of a sandbank.

These snails are very susceptible to moisture in the air, with only slight drizzle I have seen them on the move, feeding, copulating, and depositing eggs in the sand.

The eggs are white and about 1.5mm. in diameter, and take about 16 days to hatch, Pitchford (1954). Taylor (Monograph 3, 373) states that the eggs are usually about 60 in number, but are to be deposited at three different times, just beneath the surface of the ground, and hatch in about 20 days, bearing a shell 2mm. in diameter.

H. virgata and C. acuta occur in all the Guernsey habitats, also at Tenby, where on the Burrows, H. nemoralis is found with these snails and T. pisana. H. virgata is small at Port Grat and Port Soif, the var. albicans Grateloup, is common, at Vazon, the vars. lutescens Moquin-Tandon, leucozona Taylor, and nigrescens Grateloup, this last-mentioned variety occurs at Portinifer Bay. The largest H. virgata and C. acuta, were found under the fallen dead leaves of Lavatera arborea L., at L'Eree, the var. nigrescens being very fine specimens. C. acuta does not vary much in Guernsey, most can be placed in the var. strigata Menke.

Throughout his paper, Barrett (1972) refers to Helicella caperata (Montagu), this I think should read Helicella virgata.

Enemies

Little is known about the enemies of T. pisana, Taylor (Monograph 3, 376) mentions that seven shells of this species were found in the crop of a Kestrel shot at Salvages, and recognisable fragments of the shells in the crop of a Wild Duck. I have seen broken shells of these snails round the Thrush's anvil,

at Port Grat and Port Soif, I have also found in dead shells, what may have been pupa of parasitic diptera, in several of the Guernsey habitats.

Food

In Guernsey, T. pisana would appear to feed on Carduus tenniflous Curtis, Eryngium maritimum L., Foeniculum vulgare Miller, Brassica oleracea L., Raphanus raphanistrum L., and nestling about Ameria maritima (Miller), also Ulex europeus L., at Port Grat.

Summary

The spread of T. pisana, northwards of Grand Rocques, is a matter of conjecture, if by human agency, I have often pondered would the starving slave labour used by the Germans to build their fortifications on the island during the second world war, have helped to increase the distribution, if the slave labourers did grab a handful of these snails, from say, Vazon, undoubtedly a few would escape. During August 1963, for experiment at Vazon, I placed 36 of these snails in a handkerchief, which in turn was placed in my left-hand trouser pocket, without folding the corners over. I walked northwards at a steady pace; all the snails had escaped by the time I had reached Port Grat.

Since 1961, there has been a marked decrease in the distribution of T. pisana in Guernsey. Cutting down the food plants and close mowing of some areas is to be deplored, it has reduced the number of snails, in some cases the colonies have become extinct. Further building on the landward side of Portinfer Road, from Grand Rocques to La Passe, would bring about further extinction of these snails. Coupled with the increased tourist traffic, I fear they will be reduced in numbers over the next few years, and possibly to their extinction altogether on the island.

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G. W. Pitchford

SEVENTH PROGRESS REPORT ON MARINE CENSUS WORK

During the twelve months since September 1972 there has been an unprecedented increase in marine recording work. As hoped, the appointment of Area Representatives has spread and intensified interest in the project, and as all but two (Shetland and Sole) of the 40 marine Areas are now under special care, much more concentrated work is possible on and off most coasts. This is well demonstrated by the accompanying notes and maps for some Scottish Areas, prepared by Dr. Shelagh Smith who has been contacting all possible sources for records, including museums, universities, fishery laboratories, natural history societies, amateur collectors and literature records, old and new, as well as undertaking her own field work. Museums have a very important role to play

because their staffs are invariably in touch with specialists as well as amateur enthusiasts in the counties they represent. In turn museums are usually glad to have current records, and indeed many already act as Environmental Record Centres in close liaison with the Biological Records Centre.

Last October the Biological Record Centre's instruction booklet, comprehending all the Centre's schemes, and prepared by Miss Diana Scott and Mr. John Heath, was ready for circulation, and the B.R.C. generously made available a number for distribution to those interested in our recording work. Over 100 booklets have been distributed, and I would be glad to hear from more people wishing to help. Even the shortest lists of the commonest species are helpful, and moreover these can be submitted on slips of paper (with basic data - by whom found, from where and when) if a beginner is diffident about marking off the names on the Field Card in the first instance, he or she will soon gain confidence after contact in person or by correspondence with other recorders.

The Concordance to the Field Card names, correlating them with Winckworth numbers and most names in current use, is ready as these notes are being written, and all members should have copies by the time that this report appears in print. Copies can be sold to non-members at a reasonable price.

As there is still a little confusion in the minds of some Area Representatives as to just what is required and when it should be submitted, the following notes may be of help. Please note that cards for the B.R.C. and the Conchological Society's files alike should in all instances be forwarded to the Marine Recorder (termed the 'Scheme Organiser' by the Biological Records Centre).

The B.R.C. requires:-

- a) Master (or composite) cards, based on the relevant grid squares, when these are sufficiently complete to prepare meaningful maps - probably not less than five years from the present.
- b) Individual Record Cards for rare and critical species only.

The Marine Recorder requires:-

- a) An Area list for each Area, at the early convenience of the Representatives, so that there is a basis on which to upgrade and add records on a verifiable basis. Many Representatives have already submitted such lists. This will give an overall picture of authenticated species (doubtful ones should be bracketed) so that only the rarer ones recorded for squares within an Area will need separate checking.
- b) Two sets of Master Cards, based on the grid squares, one for the B.R.C., and one to be retained by the Marine Recorder to check mapping. As suggested above, these are unlikely to approach completeness in under five years, so to submit them now would be to duplicate, triplicate and quadruplicate work; they are better kept in the hands of those co-ordinating records for the Areas for the present, except for any special checks or queries that may arise.
- c) Duplicates of the locality and habitat-based Field Cards now being compiled by recorders as record fodder for the Master Cards. These will not be sent to the B.R.C., but will be kept as a central bank of information in the Society's files and they can be sent to the Recorder at any time within the next few years at the convenience of the Representatives. Please note that Literature records from a particular locality can also usefully be entered on Field Cards.
- d) Any One Species Cards that may be compiled for a single species from literature or museum records (see pp. 8-9 of B.R.C. booklet).
- e). Any Individual Record Cards, made out for rare or critical species, new Area records or specimens with unusual data.

Anyone gathering records for the scheme should submit these to the Representative of the Area in which they were found. The following list will enable people to contact those responsible for particular Areas.

SUTHERLAND (Area 2). Mr. R. G. Meiklejohn, [redacted], Thurso,

Caithness [redacted]

ORKNEYS (Area 3). A. Skene, M.A., [redacted], Stromness, Orkney [redacted]

VIKING (Area 4). C. W. Pettitt, M.Sc., Zoology Dept., University Museum, Manchester 13.

MORAY FIRTH (Area 5). D. W. McKay, B.Sc., [REDACTED], Bridge of Don, Aberdeen.

ABERDEEN (Area 6). D. W. McKay. See Area 5.

FIRTH OF FORTH (Area 7). Dr. Shelagh M. Smith, [REDACTED], Edinburgh EH8 7NS

NORTH SEA (Area 8). C. W. Pettitt, M.Sc. See Area 4.

NORTHUMBERLAND (Area 9). Dr. J. A. Allen, Dove Marine Laboratory, University of Newcastle-upon-Tyne, Cullercoats, North Shields, Northumberland.

DOGGER (Area 10). J. E. Llewellyn Jones, B.Sc., [REDACTED], Histon Road, Cambridge [REDACTED]

YORKSHIRE (Area 11). Mr. A. Norris, Natural History Dept., Leeds City Museum, Municipal Buildings, Leeds LS1 3AA

WASH (Area 12). J. E. Llewellyn Jones, B.Sc. See Area 10.

THAMES (Area 13). Dr. Joan Llewellyn Jones, M.A., [REDACTED], West Mersea, Colchester, Essex.

EAST CHANNEL (Area 14). Mrs. C. J. Pain, B.Sc., [REDACTED], Millbank, London, [REDACTED]

WIGHT (Area 15). L. D. Harfield, B.Sc., [REDACTED], Fareham, Hants. [REDACTED]

PORTLAND (Area 16). D. R. Seaward, B.Sc., [REDACTED], Yeovil, Somerset.

CHANNEL ISLES (Area 17). Mr. R. N. Brehaut, [REDACTED], St. Peter Port, Guernsey.

PLYMOUTH (Area 18). Mrs. S. M. Turk, [REDACTED], Reskadinnick, Camborne, Cornwall.

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, Dept. of Zoology, University of Bristol, Woodland Road, Bristol BS8 1UG

CARDIGAN BAY (Area 22). Mrs. A. M. Brockbank, [REDACTED], Hilton, Bridgnorth, Shropshire [REDACTED]; and Mrs. J. L. Charlish, B.Sc., [REDACTED], Goldthorne Park, Wolverhampton, Staffordshire.

ANGLESEY (Area 23). Dr. E. I. S. Rees, Dept. of Marine Biology, Marine Science Labs., Menai Bridge, Anglesey.

LIVERPOOL BAY (Area 24). Mrs. N. F. McMillan, Natural History Dept., Liverpool Museums, William Brown Street, Liverpool 3.

SOLWAY (Area 25). Miss M. M. Milne, [REDACTED], Maryport, Cumberland.

ISLE OF MAN (Area 26). Dr. A. R. Brand, University of Liverpool, Marine Biological Station, Port Erin, Isle of Man.

BELFAST (Area 28). Mrs. H. C. G. Ross and colleagues, Ulster Museum, Zoology Dept., 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.

LEWIS (Area 31). Dr. S. M. Smith. See Area 7.

UIST (Area 32). Dr. S. M. Smith. See Area 7.

NORTH DONEGAL (Area 33). Dr. Larch S. Garrad, Dept. of Natural History, Manx Museum, Isle of Man.

DONEGAL BAY (Area 34). Dr. L. S. Garrad. See Area 33.

MAYO (Area 35). Dr. M. J. Bishop, University Museum of Zoology, Downing Street, Cambridge CB2 3EJ

GALWAY (Area 36). Dr. Brendan F. Keegan, Zoology Dept., 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.

NYPHE BANK (Area 39). Dr. M. J. Bishop. See Area 35.

Next February (1974) I would like to include in my Report to the A.G.M., news from the Areas submitted by their Representatives, so please send any notes to reach me by the end of January. As usual the Report will be published in the Journal, so if any notes are very long they may have to be abbreviated. However the longer the better in the form they are submitted, as it will be interesting and instructive to compare methods of compiling records, published notes on which could be of general use. Thank you all in retrospect and in advance.

Stella M. Turk, July 1973

SOME NOTES ON LACINIARIA BIPLICATA (MONTAGU)

The few hundred specimens of Laciniaria biplicata transferred from the Barnes Bridge site to my own garden near Maidenhead have produced two small but persistent colonies - one on an old wood pile and the other on an isolated tree stump covered with old logs and debris and both surrounded with beds of nettles. Although a dozen or so specimens can be found fairly easily at most times, save in very dry weather, there is no doubt that the original population has dropped very considerably; the very dry conditions this year (1972) may have seriously reduced the colonies.

As a result of some very casual observations on the colonies, including the marking of some individuals and subsequent attempts to re-find them, some information on this species has been accumulated. I am also indebted to Miss P. Halliday for observations on a breeding colony which originated from five adults and one near adult handed over to her in September, 1969.

There is a marked tendency to 'stay put' which might partly account for the extremely local occurrence of the species, which may perhaps owe its presence in England to an introduction from Europe, at least so far as the Thameside colonies are concerned. The lack of spread is not to be attributed to any need for special conditions since it is a distinctly 'unfussy' species capable of living in the same sort of slum conditions as Hygromia striolata and Oxychilus lucidus; moreover it breeds freely and forms large colonies under suitable conditions. Its taste in food is quite catholic. The specimens on the stump in my garden, a piece of wood of only a few square feet, do not stray across relatively short patches of rough grass to other suitable places; the wood pile specimens on the other hand have certainly moved a few yards with comparative ease. The young, which are born alive in small batches on consecutive days, usually stay in a fairly tight mass. Miss Halliday found during daily observations on her small colony of six (which had been placed in a small terrarium at about 70°F. containing a variety of habitats - a 'gravel pit', a 'mossy lawn', a wood pile, a 'hay stack', a gravel path and a nettle-bed) that they moved about surprisingly little and were frequently seen feeding in the same place for hours at a time; feeding usually took place in the evening and a fairly marked homing instinct was noticed. Old leaves, particularly those of nettles, decaying wood, lettuce and especially 'Bemax' were favourite foods; no doubt in the wild decaying leaves and wood are the basic food.

Mating has been observed between late July and October, often taking place late at night. The young I have seen have been in batches of about 12 often nestling deep in bark crevices in early August and late September. At this early stage the babies have smooth shells of $2\frac{1}{2}$ whorls whereas the adults have $11\frac{1}{2}$ -13 whorls, usually about 12. Miss Halliday noticed that the young were born over a period of about a month.

Laciniaria is definitely longer-lived than I had expected. Different specimens living on the tree-stump which were marked as adults and already a year or nearly a year old have been found four to five years later still very active, the oldest being five years and one month after marking, thus giving a real age of probably six years. Of the five adults and one almost adult which formed the foundation of Miss Halliday's colony, four were still alive in August 1972 indicating that they have lived probably at least four years.

The rate of growth undoubtedly depends very much on the conditions prevailing. When kept in captivity in a confined space without special food, but given bark and a certain amount of moisture, growth is reduced to a very low rate. I found that, under conditions which may have been too dry or alternatively too dry and too wet, various babies 1.1-1.5 mm. long and juveniles 5.2-11.5 mm. long had grown only 1-2 mm. in eight months and some seemed not to have grown at all. Even in open-air conditions I have a note that one marked juvenile appeared to have grown to only 6.5 mm. even after 18 months. Miss Halliday's colony, however, thriving on 'Bemax' and other delicacies produced very different results, although she could confirm that very different rates could be found. Her colony was started on 22nd. September 1969 with five adults and one near adult of 10 whorls. The first juvenile appeared on the 7th. October, two more on the 11th., three more on the 22nd. and four more on the 4th. November. By the 24th. May 1970 four of the babies, one born on the 11th. October 1969 and the others some time in December had become adult, i.e.

after only 5-7 months and what is more two juveniles were present, one of which was 7 mm. long and the other 8 mm. Since the original adults had been separated these could only be second generation, although such incredibly rapid growth is scarcely believable, unless perhaps the species breeds before the shell is fully formed. On the other hand, some of the F 1 generation put out to fend for themselves grew at a much slower rate, specimens of four whorls measuring 2.5 mm. in height on 22nd. November 1969, having only 7-8 whorls and measuring 6.5-8 mm. in length on 1st. March 1970. The rates of growth of certain individuals under various conditions is as follows:-

Number of days	0	4	10	14	21	24	27	39	42	45	68	73	79	152	225
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Height (mm.)

1	2.5	3.5	4.25	5	5											
2	3		3.75		4			5.5			7.5				14	
3	1.75						11			14				14.5		
4	2.25						11.5			12				16		
5	2.25						12			11.5				16		
6	1.75		1.75					6								
7	2						4.5						8			
8	12					16										

B. Verdcourt & P. Halliday

ADDITIONAL NOTES ON LACINIARIA COMMUNICATED BY M. BLOCK

The day after the Barnes Bridge expedition (18th. April 1966) the specimens retained for breeding were moribund probably due to condensation on the jar overnight but after being allowed to dry out and placed in 9" earthenware flower pot (filled with 3" of gritty soil and then filled nearly to the top with a synthetic material made of wood straw and cement known as "wood wool" which becomes green with algae and mosses on weathering) they thrived out of doors in conditions varying from snow, frost and rain to baking sun. Dead leaf material including nettles and occasionally rolled oats have been supplied as food. On 17th. June 1966 a large number of young were found in the pot including two sizes, globular ones of $\frac{1}{2}$ - 2 whorls and elongated ones of about 4 whorls which must have grown rapidly. During the winter of 1966-67 the pot was kept on the floor of an unheated green house. Growth and breeding continued during 1967 and they were moved into a wash house in December to avoid severe frosts. They undoubtedly withstood a slight frost. On 18th. February 1968 one of the juveniles was found to be just reaching maturity, i.e. at about 19 months old - a very much longer time than Miss Halliday found. It appears that there is a great deal of variation in this time needed to become adult. During the summer 1968 about 100 mature or nearly mature specimens were introduced into the crevices of a concrete wall but without much success since later only 1 could be found and during 1969 two were seen and one in March 1972. It would appear that most of the individuals had, in fact, migrated contrary to my supposition that the species tends to be gregarious. During the winter of 1969/1970 the others were left out of doors and very few survived and in 1971 they almost died out. On 11th. September 1972 three mature and five nearly mature ones were found. It is clear that they are not tolerant of severe frosts.

B. Verdcourt

FIELD MEETING - TO SOUTHPORT, S. LANCASHIRE, 14 APRIL 1973

Yet another meeting to Southport, this time by a party of nine members and visitors, produced a total of 43 species. It is not proposed to list the species obtained as most have already been recorded, but rather to draw

attention to some items of interest.

A long line of debris (mainly tubes of the worms Lanice conchilega Pallas and Pectinaria sp.) indicated that there had been submarine disturbance and this had also washed out the very numerous examples of living and recently-dead (still containing the dead animal) Spisula subtruncata (da Costa). The species must live somewhere in the neighbourhood but hitherto living specimens have eluded us. Tellina fabula Gmelin was also frequent, often with the dead animal within, but Tellina tenuis da Costa was quite scarce, and not taken alive. The two small curved species of Ensis (E. ensis (L.) and E. phaxoides van Urk) were both found, the former, as usual, represented only by occasional worn valves, but the latter by good fresh specimens.

Very fresh shells of Natica alderi Forbes were frequent, and a single specimen was obtained still containing the animal and operculum. Ocenebra erinacea (L.) was not uncommon, stained old shells only, and one wonders whence they have come? for there is no suitable habitat for many miles.

Nora McMillan

REPORT OF FIELD MEETING HELD AT CHIPPING, PRESTON, LANCASHIRE,

ON SATURDAY MAY 5th. 1973. LEADER MR. A. R. LORD

Several members and friends met at Preston Station at 1.30 p.m. and from there went on to Chipping, a small Lancashire village some 10 miles North-East of Preston, set in a farming area whose beauty is well known to Lancastrians. We were met in the village by Mr. Lord, our leader and host, himself a local farmer, our aim being to visit some marl-pits at nearby Leagram. Mr. Lord also provided some notes of geological and historical interest from which I have extracted the following information.

Chipping Valley is an eroded anticline exposing Carboniferous Limestone in the valley itself, whilst the surrounding hills are capped by Millstone Grit. There are also Glacial Period deposits and the boulder clay of the Lower Drift, containing much lime, has been dug out in places to use as marl on the farmlands.

At the time of the Norman Conquest the dry sites in the valley were settled and farmed, but the area north of the River Loud and east of Chipping Brook was declared "Forest" and reserved for the Royal hunting. It was part of the Forest of Bowland, but being in Lancashire, was termed "Little Bowland". Within Little Bowland the deer-park of Leagram was set up. Henry VII began to open up the Forests and in 1530, Leagram was leased to Thomas Shireburn of Stonyhurst. It was officially "disparked" in 1556 and in 1563 given by Queen Elizabeth to Robert, Lord Dudley who promptly sold it to the sitting tenant, Sir Richard Shireburn of Stonyhurst for £1608-10-0d. It later passed to the Weld family of Dorset and Leagram Hall was built in 1822 by George Weld. The present Hall was rebuilt in 1965, the earlier building having been demolished, and is now occupied by Mr. Charles Weld-Blundell.

But alas and lackaday, though the history of Leagram was so interesting, the natural history of its marl-pits was disappointing. It is always surprising that in a limestone area, and in fields surrounded by dry limestone walls, that the fields, ditches and ponds should appear so acid, but this was probably due to the overlying layer of the more acid clay of the Upper Drift and which is probably why the fields had had to be marled. Here then is the list of species taken and identified plus some still to be determined:-

a) Stone wall (limestone) by Home Field, Leagram Hall.

Balea perversa (L.)

Pyramidula rupestris (Drap.)

both on wall.

At foot of wall:

Hygromia striolata (C. Pfeiffer)

Discus rotundatus (Müller)

Oxychilus alliarius (Miller)

Retinella nitidula (Drap.) one shell

Arion circumscriptus s.s.

A. circumscriptus silvaticus

- b) First pond (marl-pit) by Home Field.

Pisidium sp. (not yet det.)

In trees and undergrowth around the pond, under rotting wood and stones, among nettles, all in a very damp situation.

Oxychilus cellarius (Müller)

O. alliarius

Vitrina pellucida (Müller), shell

Euconulus fulvus (Müller)

Cochlicopa lubrica (Müller)

C. minima (Siemaschko)

Hygromia striolata

Carychium minimum s.l.

Arion ater (L.) young spec.

A. hortensis Férussac

A. subfuscus (Drap.)

Agriolimax laevis (Müller)

Agriolimax reticulatus (Müller)

- c) Second pond (marl-pit) by Home Field.

In pond - nothing.

By the pond:

Arion circumscriptus silvaticus

Vitrea sp.

- d) Shallow pond covered with floating mat of grass, etc.

Lymnaea truncatula (Müller)

L. peregra (Müller)

Succinea cf. pfeifferi, 1 very young spec.

Agriolimax laevis, several, very bloated and dead-looking, but later found to be alive.

Pisidium, 2 spp. not yet det.

- e) Streamlet through woodland.

Lymnaea palustris (Müller) 1 juv. spec.

Pond in same woodland - nothing, but in wet ground beside it,

Carychium minimum s.l.

Oxychilus alliarius

- f) Last pond, very shallow, with clumps of Juncus, Equisetum, grasses, etc.

Lymnaea peregra, and on the bank - Discus rotundatus

An interesting fungus, looking like large blobs of brown jelly with blow-holes in the centre of each blob, was later identified as Peziza repanda Wahl. This was growing on old hay-bales on the side of this last pond.

The party was then rounded up and went on to the farm house of Mr. and Mrs. Lord and family, there to enjoy a sumptuous high tea, which after several hours in the fresh air, in an attractive country area, and on a mild Spring day with green-leaves a-burgeoning, made a very agreeable conclusion. Good Mrs. Lord, we thank you.

Wm. F. Edwards

INTERNATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE A.(n.s.)90

ANNOUNCEMENT

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.Nomencl. 30, part 1, 6th. July 1973).

2007 Type-species for Nipponaphera Habe, 1961 (Gastropoda)

2021 Type-species for Tutufa Jousseaume, 1881 (Gastropoda)

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.

Margaret Green, Scientific Assistant

The following items for review have been received by the Compiler of the Newsletter from 'Of Sea and Shore' Publications, Box 33, Port Gamble, Washington 98364.

What is a shell? by Tom Rice. 'Of Sea and Shore' Publications, 1972. 64 pp., 30 col. pls. Paperback. Price 2 dollars.

A Sheller's Directory of Clubs, Books, Periodicals and Dealers, by Tom Rice. 'Of Sea and Shore' Publications, 1972. 61 pp. Price 1 dollar.

These two booklets by the editor of the quarterly magazine 'Of Sea and Shore' are designed, in tandem, to whet the appetite of the incipient collector of shells by showing him something of their range of shape and colour, and by giving him some information on how he may contact other 'shellers', where he can buy shells and what books are available. Taking a 'sheller' to be one who is interested in collecting shells as an end in itself, and a conchologist one who is concerned with the implications of what he finds, Mr. Rice's book of sources could provide a stimulus to the consideration of a shell as a conch.

What is a shell? is illustrated with colour photographs reproduced on glossy paper. 207 species are portrayed as well as several on the front and back covers. They are arranged in systematic order, although only common names are given for the 'families', and each species or group has a few lines of text relating to some aspect of appearance, way of life or association with man. It must be supposed that, basically, such collections of coloured reproductions are intended visually to educate readers to the aesthetic pleasures to be obtained from shells. This is a legitimate purpose and the present booklet fulfils it for, generally, the quality of the photographs varies between good and very good, such falling away as there is being due more to the scale of the reproduction than the fault of the negative. They do not, it is true, reach the superb heights of those of the Italian work Conchiglie da Collezione but in making comparisons the reviewer was again struck by the fact that almost no photographs will produce the muted but profound pleasures to be obtained from monochrome or low-toned shells, with the same impact of visual delight as the hand-coloured illustrations to be found in such 19th. century works as Swainson's Exotic Conchology.

In A Sheller's Directory..... the compiler boldly attempts to include in the section on books 'all books still in print or commonly available from used book dealers ... that pertain in whole or part to mollusks.' Since it is a world guide, and he includes books for the beginner as well as such learned tomes as the Geological Society of America's Treatise on Invertebrate Palaeontology (Mollusca) (of which there are 6 parts - in 3 vols. - not 2 parts by 1972 as stated) it is inevitable that many items are left out, over a dozen being noted during a preliminary check. Nevertheless it is a very good guide, helpfully arranged under eight categories which include books for beginners, books on specific molluscan groups, general books and those on particular areas. Close on a hundred societies and clubs from most parts of the world are listed under the section on Clubs, but less than half have the extra information concerning subscriptions, meetings and publications, although all were circularized to supply these details, which are entered in full for the Conchological Society! Errors in these and in the listing of periodicals seem remarkably few, although one notes 'Basterotia' for 'Basteria', and 'Journal' of the Malacological Society of London instead of 'Proceedings'. Just over half its 60 pages are taken up with names and addresses of dealers, many of which add their own advertisements. Some 450 are listed and one can understand the fears now being voiced by some American shell clubs about the dangers of over-collecting certain favoured species. This is rubricated for English readers by a full page advertisement on p.33 inviting us to 'enjoy the wondrous treasures of mother earth' available from the four shops of the Collector's Cabinet and including for sale 'Jumbo striped urchins from the English Channel'. However if neither editor nor reader can do much about the sins of commission, those of

omission are referred firmly to the readers: the next edition is due in the fall of 1974 and we are asked to let Mr. Rice know of any information he has overlooked. The reviewer will be sending her contribution.

Stella M. Turk

GENERAL NOTES

The Compiler very much regrets that the author's name - A. E. Ellis - was omitted from the end of the article 'An Old English Riddle' in the June Newsletter, No. 45. However, many readers will probably have guessed the identity of the writer!

THE MALACOLOGICAL SOCIETY OF LONDON

The following meetings will form the programme for the session, 1973-1974:

- Thursday October 18th. 1973 - Symposium: details below.
Wednesday November 28th. 1973 - Lecture by Dr. Neville Williams (University of Salford)
Saturday February 9th. 1974 - A.G.M.
Wednesday April 3rd. and) - Colloquium on Molluscan Phylogeny arranged by
Thursday April 4th. 1974) The Palaeontological Association. Malac. Soc. members invited.
Saturday May ?? - Meeting to be arranged.

Joyce E. Rigby, Hon. Secretary; Dept. of Biology, Queen Elizabeth College, Campden Hill, London, W.8.

A SYMPOSIUM will be held in honour of Sir C. Maurice Yonge, F.R.S. and Dr. Nellie B. Eales, in The Meeting Rooms, Zoological Society, Regent's Park, London, N.W.1., on Thursday 18th. October 1973.

Programme:-

- 10.00 a.m. Reception and Coffee
- 10.30 Dr. R. H. Nisbet - Introduction by the Society's President
10.40 Professor A. Graham - Mantle Cavities in Molluscan Evolution
11.10 Professor G. Owen - Feeding and Digestion in Bivalves
11.55 Dr. J. A. Allen - The Biology of Deep Sea Bivalves
12.25 Dr. V. Fretter - Aspects of Pulmonate Relationships

Lunch

- 2.30 p.m. Professor A. Kay - Molluscs and Coral Reefs
3.00 Dr. H. Lemche - Choice of Food in Opisthobranchs
Molluscan Panorama

4.00 - 5.00 Tea

Please tear off and return this slip by Friday 12th. October, to:-
Hon. Sec. Malacological Society, Dr. Joyce Rigby, Biology Dept.,
Queen Elizabeth College, Campden Hill, London, W.8.

I shall attend the Symposium on 18th. October

I wish to order coffee - price 13p

I wish to order lunch - price £1.50*

I wish to order tea - provided

*I enclose a cheque for £1.50, for lunch, payable in advance to the Malacological Society of London.

NAME (Block Capitals)

ADDRESS

LINK WITH A GREAT CONCHOLOGIST.

"A Victorian Nursery", by Winifred Gwyn-Jeffreys (Hayman & Son (Printers) Ltd., Bennington Street, Cheltenham), 1970 (reprinted 1973) is by a granddaughter of the author of British Conchology. Miss Gwyn-Jeffreys, aged 97, lives at [REDACTED], Suffolk Square, Cheltenham. The family claims descent from Cradoc of the Strong Arm, Knight of the Dolorous Tower and one of King Arthur's Knights of the Round Table.

Snail hunters must be equipped with a snail-catcher's licence from January 1 before they can hunt edible snails in the Swiss canton of Vaud, officials have ruled. Nigeria Daily Sketch (quoted by Punch, 17 January 1973)

(from A. E. Ellis)

REPRINTS OF PAPERS ON MOLLUSCA BY HOYLE, TOMLIN, DEAN AND KENNARD.

There are surplus reprints available free to anyone interested. These include:

1. Papers by Hoyle mostly on Cephalopoda from Sudanese Red Sea, Antarctica, East Africa and Zanzibar, and Natal, deep sea cephalopods, catalogue of recent Cephalopoda, deep sea tow net, Octopus maculosus, Sepia burnupi and luminous organs of cephalopods. There is also an elementary article on pond life which deals with algae and protozoa.
2. Papers by Tomlin. Mollusca of Macquarie Island (Gastropods & Bivalves), shell sales, catalogues and collections and 'On Verticordiidae' (South African bivalves).
3. Paper by Dean. New species of Geomalaria.
4. Paper by Kennard. List of British non-marine Mollusca.

Please apply to:- Dr. J. Chatfield, Department of Zoology,
National Museum of Wales,
Cardiff, CF1 3NP

SHELLS FOR SALE.

Browse in baskets full of shells from all parts of the world - at Eaton's Shell Shop, 16 Manette Street, off Charing Cross Road, London, W1V 5LB (01-437 9391).

AUDREY HEATON, [REDACTED], Newby, Penrith, Cumberland, would like to sell a collection of marine shells from the Philippines. A list of species is available from the Compiler.

'MOLLUSCA OF CAMBRIDGESHIRE'; Dr. M.J. Bishop, University Museum of Zoology, Downing Street, Cambridge, CB2 3EJ, has copies of this reprint available and will be pleased to send one to anybody who is interested.

Dr. R. Hamond of C.S.I.R.O. (Cronulla, Australia 2230) writes that he would welcome specimens of parasitic or commensal copepods from previously identified mollusc hosts in British waters - or indeed any other part of the world.

FOR SALE. Molluscs & Brachiopods, by Cooke, Shipley & Reed, being Vol. III of the Cambridge Natural History. Original 1895 edn., green cloth, with small tear on spine, otherwise good condition. £4.50 post paid. Charles Pettitt, [REDACTED], Cheadle, Cheshire, [REDACTED].

M.D. Brown, [REDACTED], Acaster Selby, York, wishes to obtain Vols. I & III of 'The Journal of Conchology' in order to complete his set. Any offers, please?

Tom Iredale and his new names. The veteran zoologist Tom Iredale died on the 12th. April 1972 at the ripe old age of 92, and attention should be drawn to the obituary "The Life and Work of Tom Iredale (1880-1972)" by Gilbert P. Whitley (Australian Zoologist vol.17, pp.65-125, 1972). This gives a full account of the versatile Iredale, with a most useful bibliography of his 363 publications, followed by a list of all his new names. There is also a 6-page index to all biographical references to naturalists in his papers.

Nora F. McMillan

FIELD MEETING AT WEAVER GROVE FARM, NEAR WINSFORD, CHESHIRE

On 16th. June 1973, six members and one visitor attended a field meeting at Weaver Grove Farm, approximately 1 mile South of Winsford, Cheshire, by kind permission of Mr. and Mrs. Tomlinson.

Led by Mrs. E. Tomlinson, the party examined a number of varying types and despite unusually hot and dry conditions recorded a total of 33 species. Several were new records for the 10 Km. square 33/66, and of these the most interesting was the discovery by Mrs. Tomlinson of a specimen of Limax cinereoniger in Shaw's Wood, a piece of old native woodland. Other species noted were as follows:

Shaw's Wood

Carychium minimum Müller
Succinea putris (L.)
Columella edentula (Draparnaud)
Helix nemoralis L.
Arion ater agg.
Vitrea crystallina (Müller)
Oxychilus cellarius (Müller)
O. alliarius (Miller)

Retinella radiatula (Alder)
R. nitidula (Draparnaud)
Zonitoides excavatus (Alder)
Limax cinereoniger Wolf
Pisidium personatum Malm

Sandhole Pit

Planorbis albus Müller
Segmentina complanata (L.)

Sphaerium corneum (L.)
Pisidium milium Held

Eleven Acre Pit

Lymnaea peregra (Müller)
Planorbis vortex (L.)
Segmentina complanata

Cochlicopa lubrica (Müller)
Pisidium milium

Sandhole Marsh

Cochlicopa lubrica
Retinella pura (Alder)
R. nitidula

Agriolimax laevis (Müller)
Pisidium personatum

Farm Buildings and Garden

Arion hortensis Ferussac
A. subfuscus (Draparnaud)
A. ater agg.

Oxychilus cellarius
O. alliarius
Milax budapestensis (Hazay)
Limax maximus L.
Agriolimax reticulatus (Müller)

Bottom Flash

Bithynia tentaculata (L.)
Carychium minimum
Planorbarius corneus (L.)
Succinea pfeifferi Rossmässler
Arianta arbustorum (L.)

Arion ater agg.
Retinella radiatula
Zonitoides nitidus (Müller)
Agriolimax reticulatus

Succinea putris was confirmed by Dr. L. Lloyd-Evans, Columella edentula s.s. by Dr. C. R. Paul, Limax cinereoniger by Mr. A. E. Ellis and Pisidium spp. by Dr. M. P. Kerney.

We should like to thank Mrs. Tomlinson, both for leading the meeting, and also for her hospitality in entertaining its members.

Marjorie Fogan

No. 47

December 1973

Compiled by: P. E. Negus,

Chelsea Bridge Road,
London,

Produced by THE CONCHOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND

TWO MARINE PROSOBRANCHS FROM LYME BAY, S.W. ENGLAND

The purpose of this preliminary report is to bring to the attention of members a peculiar Patella and an Osilinus ('Monodonta') found in the littoral zone of Lyme Bay between Seaton, Devon and Golden Cap, Dorset. Both forms were initially collected some five or six years ago and it was then believed that the smooth Patella and the spirally-grooved Osilinus fell within the range of variation of Patella vulgata and Osilinus lineatus respectively. Collections from the southern coasts of England have now convinced me that these forms lie outside of the usual range of variation of these two species.

However, the small sample and insufficient information concerning their distribution does not give any clear idea of whether they are confined to Lyme Bay, nor whether they should be regarded as new local subspecies or varieties. It is clear that they are apparently not well known and by describing, but not naming, them members may discover examples in their collections which will extend the known geographical distribution.

Patella sp.

Shell. Large, up to 30mm. height and 72mm. along the antero-posterior axis, 68mm. wide. Apical angle between 90° and 100°. Exterior of shell smooth with concentric lines of growth only and no radial ornament, but occasionally a trace of radial ornament is seen beneath a growth halt where a short line of undulations extends for a few mm. before fading. Internal surface glossy, yellowish-buff with a grey 'head' scar. The horseshoe-shaped muscle attachment scar is broken up into oblong sections which are contiguous but discrete. Outline of aperture markedly oviform, the narrower end being anterior.

Animal. Similar to P. vulgata in having a yellowish-grey foot and head, and transparent palial tentacles. The radula showed no significant difference from that of P. vulgata. Rest of internal anatomy not yet examined.

Comparisons. This is probably a local subspecies of Patella vulgata Linne 1758, distinguished by its smooth shell in which it resembles Patella candeii d'Orbigny from the Canaries. Both lack radial ornament and have an Acmaea-like appearance. The following table of comparative shell characters lists the main differences between the Lyme Bay forms and typical P. vulgata.

Patella from Lyme Bay

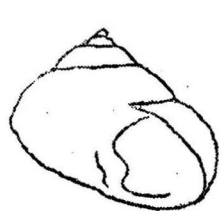
Patella vulgata Linne 1758

- | | |
|--|--|
| i) Height, up to 30mm., length 72mm. | up to 25mm., length 55mm. |
| ii) Apical angle 90° - 100° | 55° - 90° |
| iii) Shell not ribbed, smooth with concentric growth lines and growth halts. | Shell radially ribbed with bold primaries and secondary riblets. |

Internal surface yellowish-buff, grey 'head'-scar, muscle attachment scar in oblong sections.

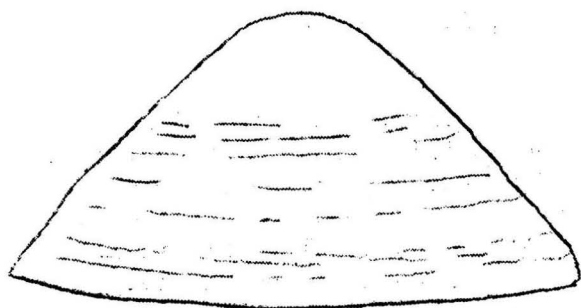
Greenish-grey with iridescent tinges of blue, 'head'-scar whitish, muscle attachment scar entire.

Occurrence. Several empty shells and a few live-collected examples from Pinhay Bay, Devon, west of Lyme Regis, Dorset, where they are apparently confined to the surface area of the Rhaetic formation. This outcrops to the west of the Blue Lias and supports a luxuriant growth of marine algae, which the

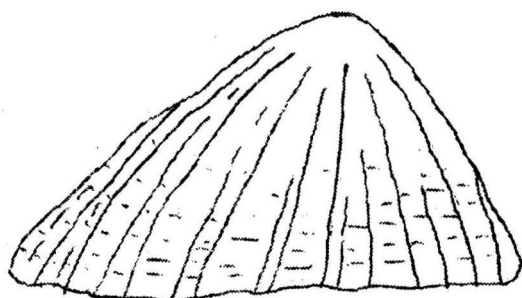


Osilinus from Lyme Bay

O. lineatus (da Costa 1778)



Patella from Lyme Bay



P. vulgata Linné 1758

Blue Lias does not. Also one beach-rolled shell from Seaton Hole, Seaton, Devon.

Discussion. It might be objected that these smooth patellids are only very eroded shells resulting from exposure on a rocky shore. This is not the case since Lyme Bay is relatively sheltered and the 'normal' P. vulgata, with which these are always associated, show no sign of erosion. Both forms are often coated with calcareous algae which would be removed by erosion.

Osilinus sp.

Shell. Height up to 22mm., breadth 22mm. Apical angle between 65° and 75° . Whorls tending to be subquadrate in outline and to develop a distinct shoulder in some, this, together with the impressed sutures, gives the shell a distinctly turreted appearance. Outer surface is a dark brownish olive-green with irregular patches of small purple zig-zag pattern. About 30-35 spiral grooves extend from the apex to the aperture in most, and down on to the base in many.

Animal. It superficially resembles that of Osilinus lineatus (da Costa 1778), particularly in the black-banded tentacles, but the rest of the internal anatomy has not yet been examined.

Comparisons. This is clearly related to O. lineatus but is readily distinguished from the typical Cornish and Welsh forms of that species by its more obtuse apical angle, turreted appearance, and the presence of spiral grooves. The colour, though variable, tends to be more olive-green than the essentially brownish-purple of typical O. lineatus. The following table of comparative shell characters lists the essential points of difference between the Lyme Bay form and typical O. lineatus.

Osilinus from Lyme Bay

- i) Height up to 22mm.
- ii) Apical angle between 65° and 75°
- iii) Whorls subquadrate, often flat-topped, some turreted.
- iv) Sutures impressed
- v) Between 30 and 35 spiral grooves
- vi) Colour dark brownish olive-green with obsolescent zig-zag pattern.

Osilinus lineatus (da Costa 1778)

- up to 30mm.
- between 75° and 85°
- Whorls rounded, giving shell a turbinate appearance.
- Sutures adpressed
- No grooves seen
- Brownish-purple bold zig-zags in greyish background.

Discussion. Although the shells of the Lyme Bay Osilinus are distinct enough, the animal apparently differs in no significant way from typical O. lineatus so that this is provisionally regarded as a subspecies which is probably confined to Lyme Bay.

Occurrence. One specimen live-collected from upper mid-shore $\frac{1}{4}$ mile east of Charmouth, Dorset; several from Black Ven and Church Cliffs, empty shells only; and 12 from Pinhay Bay, west of Lyme Regis,

Concluding remarks. These two forms are not common where they have been collected, and intermediates between the variants and 'typical' forms also occur. However, neither the ribbed forms of P. vulgata nor the non-grooved O. lineatus are really typical. The ribbed forms of P. vulgata tend to have less bold and more regular ribbing than those from other regions, and the non-grooved O. lineatus are generally smaller, and more turreted in appearance, than typical forms. Both species present a more elegant appearance than the more rugged Cornish/Welsh forms. Thus, the evidence, though slight, seems to favour two local subspecies of P. vulgata and O. lineatus in Lyme Bay, the first with smooth elements and the second with spirally grooved elements.

Charles Philip Palmer, July 1973

COCHLEA LIBERUM: THE SNAIL IN OLD NURSERY RHYMES

Snail, snail, come out of your hole,
Or else I'll beat you as black as coal.
Snail, snail, put out your horns,
I'll give you bread and barley corns.

The somewhat disparaging appellation 'nursery rhymes' embraces at least three categories of versification: (1) traditional rhymes, such as the above, transmitted orally from antiquity and existing in many versions, dialects and languages; (2) verses not originally intended for children, such as political lampoons, which have been subsequently taken over by the young; (3) 'poems', using the word in a generous sense, expressly written for children. Verses of which the snail is a theme come in the first and third categories. For considerations of space only those earlier than the nineteenth century are referred to in this article.

The above quotation with its variants in this and other languages must be the most ancient nursery rhyme featuring the snail. Its first appearance in print was in our earliest book of nursery rhymes, "Tommy Thumb's Pretty Song Book" (1744). This is one of the world's rarest books, in fact it could not be rarer: volume one survives only as a unique reprint (Opie, 1973, No. 16), while the only known copy of volume two, in which 'Snail, snail', occurs, is in the library of the British Museum. The verse must be far older than this anthology. There is an echo in "The Merry Wives of Windsor", act 4, scene 2: "and so buffettes himsele on the for-head: crying peere-out, peere-out." Versions of the invocation exist from Denmark and Germany south to France, Spain and Italy, and east to Roumania, Russia and even China. For numerous local variants see Halliwell, 1849 (1970), Opie, 1951, and Nance, 1956, 1957. The first cites this version:

Sneel, snaul, robbers are coming to pull down your wall.
Sneel, snaul, put out your horn,
Robbers are coming to steal your corn,
Coming at four o'clock in the morn.

In Scotland the snail was invoked as a weather prophet:

Snailie, snailie, shoot out your horn,
And tell us if it will be a bonnie day the morn,

and in Somerset as a rain-maker (Newall, 1971a):

Snail, snail, put out your horn,
We want some rain to grow our corn.
Out, horn, out.

In parts of Cornwall the snail was apostrophised as Bul(h)orn, Malorn, Jin-jorn, John Jago, Jan-jake, Bull-jig, Buljinks and Hornywink:

Bulorn, Bulorn, put out your long horn, your father and mother is dead;
Your sister and brother is to the back-door, a-begging of barley bread!

Dodman, hodmandod and hoddamadod are East Anglian names for the snail:

Hod-ma-dod, Hod-ma-Dod, stick out your horns,
Here comes an old beggar to cut off your corns.

The clue to this nonsense is in the 'Sneel, snaul' verse.

Another nursery rhyme of some antiquity libels the sartorial profession:

Four-and-twenty tailors went to kill a snail,
The best man amongst them durst not touch her tail;
She put out her horns like a little Kyloe cow;
Run, tailors, run, or she'll kill you all e'en now.

This defamatory quatrain, other versions of which are cited by Halliwell, 1842 (1970), and Opie, 1951, first appeared in "Gammer Gurton's Garland or the Nursery Parnassus" (1784). It is not clear why tailors should have been singled out for this calumny, but in folklore they have long had a reputation for pusillanimity. Brewer's Dictionary of Phrase and Fable suggests a connection with the nine 'tellers' tolled for a death knell (whence Dorothy L. Sayers derived the title of her story, "The Nine Tailors"). Walters, 1912 (p. 156), states that "Most commonly 3 x 3 strokes are given at the death of a man, 3 x 2 for a woman, and 3 x 1 for a child....These strokes are called 'tellers', in Dorset 'tailers'; hence the saying, 'nine tailors make a man'. 'Tailor' is really the original form, referring to their being rung at the 'tail' or end of the knell." (see also Walters, 1908, p. 96; Smith, 1970, pp. 567, 797). Be this as it may, in our rhyme the number of tailors is 3 x 3 x 3 - 3: the number 24 must have some mystical significance - compare Numbers 7:88, Haggai 2:18, Revelation 4:4, and the 24 demons and 24 genii of the Zoroastrian creation myth (Newall, 1971b, p. 29). Hewson (p. 29; reference in Opie, 1973, No. 627) propounds a more anagogical interpretation. The slander dates back to at any rate 1630. North of the Border it is Highlandmen who were thus maligned (Montgomerie, 1964): one suspects some anti-Jacobite poetaster of being the perpetrator of this unmerited insult.

A nursery rhyme with a history of at least 400 years is "A Frog who would a-wooing go." This is probably the same as "The frog cam to the myl dur," one of the 'sueit melodius sangis' sung by the shepherds in "The Complaynt of Scotlande," 1549 (Opie, 1951); "A moste Strange weddinge of the ffrogge and the Mowse" is dated 1580; but the earliest surviving text is "The Marriage of the Frogge and the Movse," Melismata, Thomas Ravenscroft (1611). In Andrew Lang's rendering:

This frog he would a-wooing ride,
And on a snail he got astride.

An improbable writer of children's verses is John Bunyan: "A Book for Boys and Girls; or Country Rhimes for Children" was published in 1686. Subsequent editions were entitled, "Divine Emblems, or Temporal Things Spiritualized." This is another very scarce book: two copies of the first edition are known, one of which is in the British Museum library. A facsimile was issued by Elliot Stock (1890); the American Tract Society published the most recent edition (New York, 1928). It may come as a surprise that the puritanical author of "The Pilgrim's Progress" could have descended to such frivolity, but a pious moral or 'comparison' is appended to the poems, which makes it all right. There can be no more graphic illustration of the gulf separating the children of the seventeenth and twentieth centuries than this precious volume.

Upon the Snail

She goes but softly, but she goeth sure,
She stumbles not, as stronger Creatures do:

Her Journeys shorter, so she may endure,
Better than they which do much further go.

She makes no noise, but stillly seizeth on
The Flow'r or Herb, appointed for her food;
The which she quietly doth feed upon,
While others range, and gare, but find no good.

And tho she doth but very softly go,
How ever 'tis not fast, nor slow but sure;
And certainly they that do travel so
The prize they do aim at, they do procure.

Comparison

Although they seem not much to stir, less go,
For Christ that hunger, or from Wrath, that flee;
Yet what they seek for, quickly thy come to,
Tho it doth seem the farthest off to be.

One Act of Faith doth bring them to that Flow'r,
They so long for, that they may eat and live;
Which to attain is not in others Pow'r,
Tho for it a King's Ransom they would give.

Then let none faint, nor be at all dismayd,
That Life in Christ do seek, they shall not fail
To have it, let them nothing be afraid;
The Herb, and Flow'r is eaten by the Snail.

In line 8, 'gare' should be 'glare', and in the Comparison, line 3, 'thy' is obviously a misprint for 'they'.

Anyone delving into children's verse inevitably incurs a deep debt to Mr. and Mrs. Opie, facile principes in this realm of literature. To Mr. Opie I am under a more personal obligation for kindly consenting to read this article - "the first article on this subject that I can recollect;" his lack of criticism is highly gratifying to a trespasser on his domain.

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*I am indebted to Mrs. Stella Turk for kindly procuring photo-copies of these two papers.

WHO IS BRITANNIA - WHAT IS SHE LIKE?

Since my youth I have become familiar with the Virgin of the Netherlands. As a grown up I made Marianne's acquaintance and Uncle Sam's. However, Britannia is still puzzling me. Who is she? This question remained unanswered in the last article in the Newsletter which had this question as a heading.

You can love someone without knowing them. And if you know where the beloved is, you seize every opportunity to come nearer to her. Well, I was among the first group of Dutch N.C.O.'s to be sent to Britannia for primary training in the British Army shortly after the liberation of the Netherlands in 1945. I met Britannia for the first time at Dover and Wolverhampton. I saw her elegantly and decently dressed in her undulating flower-covered pastures of the Midlands, in her working dress at Sheffield, Manchester and Stockport, on holiday in Nottingham, Skegness, Sunderland and Ayr, naked in the mountains of Scotland on the steep bare rocks bordering the Lochs, armoured at Aldershot and at Maryhill barracks at Glasgow. But still I did not know her as a person, as I know Marianne, the Virgin of the Netherlands; Aphrodite rising from her clam shell and from the sea as Botticelli painted her, and Galatea in her shell as painted by Rafael. Their portraits have been depicted on postage stamps of France, Netherlands, Australia, Paraguay, Oman, Greece and Italy. I discovered Britannia on old British postage stamps (1912-1922; 1934-1936). She drives a chariot drawn by three dolphins, depicted as horses with a dolphin's tail on the waving sea, a trident in her hand. Was she Britannia? At first sight I identified the portrait as representing Poseidon, creator and tamer of horses, god of the sea, brother of Zeus, son of Kronos and Rhea, grandson of Uranos and Gea, by the trident, by the chariot made of clam shells in which the god made his wedding trip together with his bride Amphitrite and by Poseidon's horses drawing the chariot. However, on close examination the stamps do depict a Roman woman, not a "he"-god. She must be a close relation to Poseidon, being able to borrow the personal properties of the deity, so she must be a very attractive woman. She also appears on the postage stamps of Barbados, more modestly, the shell-made chariot being drawn by two horses only. She must be a goddess as she proved to be able to change her features and could take the shape of Queen Victoria and afterwards the shape of George V and George VI. Apparently the artist did not want to depict the British Queen as there exists an issue on which King George V has been depicted, the woman in the chariot, however, clearly shows the features of Queen Victoria. In some way Britannia would prove her identity: the figure in the chariot has changed the Roman helmet for the British Crown.

From the Barbados stamps it is also clear that Britannia is quite modern as she has made her chariot into a paddle boat, which is obviously a nuisance to one of the horses which is turning his head on the later issues.

At last I have come to know Britannia: an attractive and modern woman, a goddess who is able to appear in the shape of a queen, a king, a landscape or even a country, having her own special dress, crown and shield with the crosses, and maintaining most intimate relations with Poseidon.

L. J. M. Butot

THE CONCHOLOGIST: BY MISS WINIFRED GWYN-JEFFREYS

Conchology - the word is music to my ears.
Shells, and more shells, have been my heritage.
Five shabby volumes lie upon my shelf -
The paper frail and brittle with age.
Wherein a thin and yellow-pale inscription reads:
"For my dear Children, Howel and Edith,
"From the Author" Dated 1862.
The Title - British Conchology. Volume I.
The Author - John Gwyn-Jeffreys, F.R.S. and F.G.S. etcetera.
The pictures, delicately drawn, unfold
The wonder and the loveliness of Shells.

From boyhood days the study of Mollusca was to him
A source of inexhaustible delight.
And, as he older grew, so grew pursuit,
And appetite was served by ocean journeyings.
He had been trained for Law. As generations past
Had practised Law. But Law was not for him.
The dry-bone books were early cast aside.
He bought a yacht. His was the freedom of the seas!
Henceforth dredging operations would begin -
Research and consequent discoveries to follow.

Aged nineteen years, a Paper for the Linnean Society,
The Pulmonobranchus Mollusca of Great Britain,
Won approbation from the Scientists.

One deep-sea cast, of two miles depth,
Brought to the surface living organisms
Furnished with eyes. Again the Scientists were stirred.
Still more research, and five strange specimens
Before unknown, were brought to light.

A NEW SHELL FAMILY, JEFFRESIA, WAS BORN!

Later, a Paper to the Royal Society
Concerning "Deep Sea Explorations" spoke these words:
(And thereby throws a light on our Conchologist)
"Increase of knowledge must confirm our acknowledgement,
"with a reverential awe, of that Great Creator, whose
"wonderful works are dimly seen in every form of
"life, marine, terrestrial and especially in
 " All that glides
 " Beneath the waves, yea in the wave itself,
 " And mighty waste of waters."

He was my Grandfather! Small wonder then
The word "Conchology" stirs deep within the heart of me.

"WIN"

Note: The title of Jeffreys's first paper was:
"A Synopsis of the Testaceous Pneumonobranchous Mollusca of Great Britain".
Transactions of the Linnean Society of London, vol. 16, pp. 323-392 (29 May
1830).

EUROPEAN INVERTEBRATE SURVEY: 2nd. INTERNATIONAL SYMPOSIUM

This international meeting was held at Monks Wood Experimental Station,
Huntingdon, from 14th. - 18th. August 1973, to discuss mapping schemes and
biological record centres throughout Europe.

The meeting started with a review of progress of the European Invertebrate
Survey (E.I.S.) since its previous symposium in Germany last year. Reports
were given from many countries in Europe including Austria, Belgium, Finland,
France, Eire, Luxembourg, Norway, Spain, Sweden and United Kingdom. Some
verbal reports were given by delegates of other countries. Many of the
European countries are in the early stages of recording their fauna, and are
setting up record centres for the first time. In many of these countries
there are only a few malacologists compared with the larger numbers in the
U.K. where there is also a large number of amateur naturalists. Following the
national reports, the work of the Biological Record Centre (B.R.C.) at Monks
Wood was explained and the members of the meeting were taken on a tour of the
data bank and equipment. A demonstration was given to show the printing of
maps on a modified typewriter.

On the second day, four papers were given during the morning including
one on the British Marine Mollusc Survey (read by J. Chatfield) which explain-
ed the past history of recording by the Society and particularly the progress

made in the last 10 years. Some members of other countries expressed interest in our recording scheme, including the French who are running a survey of the littoral fauna. The second day was concluded by a field-excursion to Woodwalton Fen where mosquitos proved more numerous than molluscs!

Lectures were resumed on 17th. August with an account of new trends in cartography (map-making) and adapting maps for the use of biogeographers. This was followed by some work on rare species of insects with a view to conservation and judging priorities of the various cases when funds are not available for all projects and some choice has to be made. After lunch there was a committee meeting of E.I.S. New members were invited to join the committee for future work. Dr. M. P. Kerney serves as the representative of the U.K. since Mr. J. Heath now takes the post of Secretary General. The committee will continue to meet each year, but a Symposium is to be held every three years. The next Symposium will be in Sweden in 1976.

After tea the last two lectures to be given were on Codes of Conduct for collectors and the future of biological recording. At the end of the afternoon the non-malacologists went on a tour of the Monks Wood Nature Reserve whilst the malacologists held a committee meeting on mapping the molluscs of Europe. A pilot project was discussed for recording 4 selected species with a view to the production of some provisional maps to be presented to the Malacological Congress in Milan in September 1974. The species selected are:- Pomatias elegans (Müller), Eobania vermiculata (Müller), Discus rudersatus (Stud) and Margaritifera margaritifera (L.). Members of this Society should be able to help in this pilot project and in future mapping. Details will be available from Dr. Kerney soon. The Symposium concluded with a banquet on the Friday evening, followed by a field meeting to Wicken Fen.

J. E. Chatfield

A LIST OF COMMON NAMES OF EUROPEAN ANIMALS IN SEVEN LANGUAGES

The following letter from Dr. A. Gozmany of the Hungarian Natural History Museum, Budapest, is included for three reasons. Firstly it will let many conchologists know of the preparation of a mammoth work, presenting the common names (including colloquial ones) of European molluscs, both land and marine, as well as those of various other animal groups, in seven different languages. Secondly, because it shows the incredible plasticity of mind of a man who can cope with eight languages, presumably all with the same command of colloquialisms and scholarship - how many of us will have to look up 'apolaustic', I wonder! And thirdly, if we feel somewhat discouraged by how little we may do in comparison, we might then be heartened by the fact that Dr. Gozmany considers that the molluscs are a horrendous group of animals from at least one point of view!...

"Dear Mrs. Fogan,

Would if all zoologists were like you and your various friends when it comes to the aid of the party! I can hardly find words to express my gratitude for your zealous /nearly go-getter, if you will excuse this fine Americanism/ assistance. In all naivete I seem to have thrown a snowball and now it is an avalanche! - what with a number of distinguished English conchologists, who surely have better and more pressing things to do, sacrificing their time on my humble list of names...

...Of course, I am not very much interested in obsolete names, I only started with Donovan because he gave a name to every 'species', and working from his list, I hoped to get the 'modern', or more accurate, or generally accepted names - and if some were found to have no modern equivalent, then I could always fall back on Donovan's coinages. Also, please do not trouble yourselves with obviously 'tropical': I mean here extra-European/ species/ mostly, as you say, accidental introductions:. I need only the established species in European waters....

Finally, to let the whole cat out of the bag, I was commissioned by the Academy of Sciences to write a Dictionary of the Common Names of

European Animals in 7 languages /I understand 8/. I am in the final throes of this apolaustic composition, meaning the Molluscs - the most horrendous group of animals from the lexicographers point of view, both as to names and system! Anyway with your help I shall have finished with the whole project in a few months time now, and then I can sit back and watch the typists of the Academy's Press hammer away on the standard, applied and colloquial names in seven languages of the 20,000 European animals... It will take them a year!

/By the way, I, of course, have taken duly into consideration the Thomas-Janson List of the common names of British insects and other pests. As all the American, Canadian, South African, Australian, etc. lists and publications of a similar nature. They, too, are in English, so names have to be included. As e.g. South American, Central American, or Cubanese Spanish, or Canadian French:

In deepest gratitude,

A. Gozmany

25.6.1973

Zoological Dept. of the Hungarian Natural History Museum, Budapest VIII,
Baross utca 13

Marjorie Fogan

"LES LIMNOCARDIIDES ACTUELLES DU BASSIN PONTO-CASPIQUE",

PAR LE PROF. DR.DOC. AL. V. GROSSU

From the energetic Société Belge de Malacologie comes another of their duplicated "Informations", this being nos. 7/8 of Series 2, for July/August 1973. This is an account by Professor A. V. Grossu of the peculiar "cockles" (Limnocardiides) of the Black, Caspian and Azov Seas, Professor Grossu treats in detail of the Recent species only (8 spp. of Didacna and 13 of Hypanis*) but gives the fascinating history of the whole group, both Recent and Pliocene. In Miocene times a vast land-locked brackish sea extended from Vienna eastward to the Sea of Aral; during the succeeding Pliocene it became a series of great lakes and inland seas of which the Black, Caspian and Aral Seas are survivors. There are many Pliocene species but not many have survived; in the Black Sea, because of its connexion with the marine Mediterranean, the Limnocardiides survive only as relict species in lagoons, but the Caspian basin has remained closed and presents a true brackish Sarmatian fauna.

Professor Grossu concludes by saying that further investigations on the living species are needed; he suggests studies using a scanning electron microscope and also biochemical research ("electrophorèse des protéines"). Only then may it become possible to elucidate the relationships of the species and indeed of the whole group now called the Limnocardiides.

The paper is illustrated with numerous text figures (every Recent species and subspecies is figured) and in addition there are three really excellent plates of figures (on art paper).

*The genus Hypanis here includes three subgenera Hypanis s.s., Monodacna and Adacna, the two latter are often treated as genera.

Nora F. McMillan

PUBLICATIONS RECEIVED

Poirieria (Conchology Section, Auckland Institute & Museum, New Zealand),
Vol. 6, part 6, March 1973.

This issue contains, as so often, items of very general interest. A good example of this is the first article which deals with starfish as shell

collectors. This reports studies made on Astropecten polyacanthus which grow 8 - 9 inches across and which are capable of extruding the stomach and enveloping the victim which is held down in the arms while being digested. Several batches of the starfish were available from dredgings and the stomach contents were analysed; for instance one batch of 38 starfish yielded 399 molluscs, up to 60mm. long, of 27 species. Exceptionally spiny gastropods such as Murexsul octagonus were not rejected, nor were bivalves as small as Myadora bolteni of which 38 were found in one stomach.

There is a note on Xenophalium labiatum Perry, a beautiful shell and very rare. It is known to have come from rocky areas at moderate depths but only where there are enclosed sandy places and it has been established that these are its favoured localities. Most specimens are empty shells picked up on the beach and the writer J. R. Penniket, concludes that they could get there only through being transported by the common octopus.

'Egg Cases of Poirieria' by N. Douglas, a beautifully illustrated article dealing in particular with P. zelandica (Q. & G.) emphasises how little is known about how these molluscs lay their eggs or build the egg cases - or indeed, what the whole process really consists of.

Two articles on the squid Sepioteuthis bilineata by D. Edwards and N. W. Gardner provide some detailed behavioural notes and describe the egg-hatching process observed in an aquarium tank. All the young finally succumbed and it seems that nobody has yet established the full requirements for rearing these animals.

A newspaper report gives details of a determined offensive against the Crown of Thorns starfish by the inhabitants of Rarotonga. Large pits were dug by bulldozers at intervals and everyone worked all day long to achieve the destruction of 70,000 starfish: similar forays are planned at 2 monthly intervals. There are no Charonia or Cassis, nor have there been, anywhere in the district.

Terebra circumcincta Desh., principally Australian, seems to have been appearing in New Zealand. An illustrated note by N.W.G. mentions two live specimens discovered in 1971 and several more during the past two months, sent alive by Graham Clifford from the Bay of Islands. They live well in a marine aquarium. N.W.G. also writes a review of the genus Myadora Gray 1840 in New Zealand and the issue contains abstracts, reviews and collecting notes.

Editors: N. & N. Gardner, [REDACTED], Birkenhead, Auckland 10, New Zealand.

T.E.C.

[REDACTED]
Atherton,
Manchester, [REDACTED]

Dear Members,

I write again to remind all Members that the Annual Subscription of £3 (Family Members £4, Junior Members 50p) will be due on 1st. January, and should be forwarded to me without further reminder.

Your Council - and your Hon. Treasurer in particular - are disturbed by the fact that each year a number of Members must be deleted from the List of Members because of non-payment of subscriptions. 15 Members are still in arrears with 1972 subscriptions, and their names will be removed from the Members' List at the end of the year. A larger number are in arrears with the 1973 subscription; their names have been removed from the mailing-lists and if the arrears remain unpaid during 1974 they will cease to be Members at the end of the year.

Perhaps I may point out that these Members have been the occasion of a substantial expense to the Society. Before removal from the mailing-lists they had received copies of the Journal, the Newsletter and the Marine Concordance besides subscription reminders. Printing is now very expensive,

and postage is becoming increasingly so.

Rule 5 of the Conchological Society's Rules states: "If on December 31st. of any year a Member shall be more than one year in arrear with his or her subscription, the Council may erase his or her name from the list of Members, and may take whatever steps may seem desirable for the recovery of the arrears." I understand that it is true to say that the Society would have the right to take legal action for recovery of arrears. This is not regarded as a desirable procedure; it is nevertheless deplorable that the Society should suffer in this way.

It is, of course, always a source of regret when a Member is lost, but it is recognised that interests change and that these losses are bound to occur. If Members would notify the Hon. Secretary of their intention to resign, their courtesy would be appreciated and a considerable amount of trouble and expense avoided. Members may not always realise that all Officers of the Conchological Society give their services in a voluntary, part-time and unpaid capacity, and while they are willing at all times to assist Members in any possible way, they are grateful to be spared unnecessary labour.

Yours sincerely,

MARJORIE FOGAN (Hon. Treasurer)

A BRIEF REPORT ON THE DISTRIBUTION OF VALLONIA EXCENTRICA STERKI
AND PUPILLA MUSCORUM (L.) IN SOME NORTHERN SCOTTISH LOCALITIES

Very little work has been done on the distribution of the Helicid land snails Vallonia excentrica and Pupilla muscorum in the far north of Scotland. This prompted this brief note and it is hoped that it will be of some use to future fieldworkers in this area.

A survey carried out between August 1972 and May 1973 provided the following information on these two species. In the north of Scotland V. excentrica and P. muscorum are in general restricted to the coastal sand dune systems. Within these systems the habitat is invariably quite dry, short maritime turf or heath, usually in exposed areas. Within the habitat it can be said that if one species occurs it will only be a matter of time and patience before the searcher encounters its congener.

The following table shows the occurrences at thirteen localities on the north and north-east coasts.

North Coast (East to West)	Grid Ref.	V. excentrica	P. muscorum
Dunnet Bay Sands	ND39/27	x	x
Murkle Bay Sands	ND39/16	x	x
Reay, Sandside Bay	NC29/96	x	x
Melvich Sands, Halladale	NC29/86	-	-
Strathy Bay Sands	NC29/86	-	x
Armadale Bay Sands	NC29/76	x	x
Skerry, East of Torrisdale	NC29/66	x	-
Talmine Sands, Tongue Bay	NC29/56	x	-
East Coast (North to South)			
Freswick Bay Sands	ND39/36	-	x
Reiss Sands, Sinclairs Bay	ND39/35	-	
Portgower Sands	NC29/91	x	-
Ballinreach Sands, North Brora	NC29/90	x	-
Brora Sands South	NC29/90	x	-

From the list it may be seen that one or both species are unrecorded in some localities. In all probability this is due to the searcher overlooking these species, and it cannot be said that they are not present at that locality.

In future V. excentrica and P. muscorum will probably be found to occur in all coastal areas of Northern Scotland once typical habitats have been surveyed. Finally I wish to thank Dr. M. P. Kerney for his determinations on most of the material, and for his invaluable help on all Northern Scottish Land Mollusca.

R. G. Meiklejohn

GENERAL NOTES

MARINE RECORDING: ADDITIONS TO LIST OF AREA REPRESENTATIVES PUBLISHED IN NEWS-LETTER No. 46 (Sept. 1973)

SHETLAND (Area 1). Dr. J. D. Peacock, c/o. Institute of Geological Sciences, 19 Grange Terrace, Edinburgh, EH9 2LF
DUBLIN (Area 27). Dr. Brenda M. Healy, University College, Dublin, Zoological Dept., Belfield, Stillorgan Road, Dublin 4.
NORTH DONEGAL (Area 33). Mrs. E. Platts, [REDACTED], Quarry Road, Belfast, [REDACTED]; Mrs. Platts replaces Dr. Larch Garrad for this Area.

Stella M. Turk

MORE ABOUT GIANT ANODONTA CYGNEA

The largest British specimens of Anodonta cygnea are those taken from an old pond at Claughton Hall near Preston, Lancs. in 1892. (See Conchologists' Newsletter No. 29, p. 102; No. 34, p. 174, and No. 38, p. 228) Recently, however, I noted that in Mrs. Merrifield's book A Sketch of the Natural History of Brighton and its Vicinity (1864) it is stated (on p. 155) that "some years ago several (Anodonta cygnea NFMcM) were taken out of a decoy pond in Firle Park, measuring eight inches in length, and nine inches in circumference". A Mr. W. C. Unwin contributed to the volume the section on Mollusca; it would be pleasant to know if his collection survives and if it contains any of these "giants". (N.B. for comparison, 8 inches = 204mm. and 9 inches = 230mm.)

Nora F. McMillan

A GRISLY PEARL

"In the National Library in Bombay, there is an artifact of an ancient bit of mythology about the giant clam. A human hand was said to have been found within one great clam shell; it had become completely coated with mother-of-pearl. This relic, although extraordinarily beautiful, was believed to possess terrible powers of evil." J. B. Sweeney, "A Pictorial History of Sea Monsters" (Crown Publishers, New York, 1972), p. 207.

(from A. E. Ellis)

SHELL SURNAMES

I am indebted to Mr. R. M. Dixon for the following amusing list of names culled from the London Telephone Directory:- Artemis, Auger, Barnacle (not really valid), Bonnet, Buckie, Cockle, Cone and Conus, Harp, Lima, Mitra, Mussell, Oliva and Olive, Otter, Piddock, Rapa, Shell, Solen, Tun, Venus, Winkle. No doubt other members can supply further examples from their personal knowledge or local Telephone Directories.

P.E.N.

MOLLUSCA IN NORTH WALES

SNAIL AND SLUG Course at Drapers' Field Centre, Betws-y-Coed, Caerns. 13th.-20th. March 1974.

The course will include identification, ecology, population studies and behaviour. Field work will include visits to woodlands, marshes, mountain areas and alkaline flushes, and a few freshwater sites in Snowdonia and the Conway Valley. Tutor, Dr. June Chatfield.

BIOLOGICAL RECORDING WEEK at Drapers' Field Centre, Betws-y-Coed, Caerns.
22nd.-29th. May 1974.

This week will be a multidisciplinary week recording the flora and fauna around the field centre for the various mapping schemes. Molluscs will be included and there is a possibility of some recording on the coast. Organised by National Museum of Wales.

Further details for either of these from The Warden, Drapers' Field Centre, Rhyd-y-Creuau, Betws-y-Coed, Caerns.

DO SHELLERS LIVE LONG AND STAY YOUNG?

In a fascinating new book, edited by malacologist R. Tucker Abbott, a study of 1,000 living and 500 deceased shell workers shows that the mean life span of early American malacologists was 81 years! Five percent lived into their 90's! If you are listed, either as a professional or amateur conchologist, you are among 7 in every million Americans. 14 percent of you conchologists are college professors, 10 percent are homemakers and 7.3 percent are physicians.

Did you know that President Thomas Jefferson, an amateur paleoconchologist, had a scallop named in his honor? That the famous Christmas plant, poinsettia, was named after a shell collector, Joel Poinsett, who was Secretary of War in 1837? That Daniel Barnes who named *Cypraea eburnea* and many unios was a baptist preacher and was killed at 43 by falling from a New York stagecoach?

These and thousands of other fascinating facts appear in the new book, "American Malacologists", a biographical guide to all important shellers, with cross-indexing by occupations, research activities, and residences. Regularly \$12.50, the 425-page hardbound first edition may be bought at the pre-publication price of \$10.00 if ordered before January 15 1974, from American Malacologists, 6314 Waterway Drive, Falls Church, Virginia 22044.

SHELLS FOR SALE

Browse in baskets full of shells from all parts of the world - at Eaton's Shell Shop, 16 Manette Street, off Charing Cross Road, London, W1V 5LB (01-437 9391).

M. D. BROWN, [REDACTED], ACASTER SELBY, YORK, wishes to obtain Part 3, of Vol. 27 of the Journal of Conchology, and will be grateful for any offers.

APRIL 1974 MEETING

At the meeting next April Messrs. Pain and Oliver are scheduled to give a talk on books about shells. It is hoped that members who are attending will be able to exhibit as many appropriate books as possible. In order to avoid unnecessary duplication and to try to distribute 'the load' as evenly as possible, will anybody who would be prepared to bring books please let Mr. Oliver or Mr. Pain have a list of those they wish to bring. Messrs. Pain and Oliver will, from these lists, select who should bring which books and advise members accordingly. In order to get as many books exhibited as possible it is hoped members will respond generously with offers to participate.

INTERNATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE A.(n.s.)91

ANNOUNCEMENT. 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. Nomencl. 30, part 2, 10th. October 1973)

2010 Suppression of Tergipes adpersus Nordmann, 1845 (Mollusca, Opisthobranchia).

2030 Suppression of Calyptraea striata Gray, 1825 (Mollusca, Gastropoda).

2032 Designation of a type-species for Cerithium Bruguiere, 1789 (Gastropoda).

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. Those received early enough will be published in the Bulletin of Zoological Nomenclature.

October 1973

Margaret Green, Scientific Assistant

FIELD MEETINGS 1974

Programme No. 1

PLEASE NOTE: All future field meeting programmes will be published with the Newsletter, (when possible on the last page) and not as a separate sheet.

Saturday April 6th. Cusop Dingle, Herefordshire. Mr. S. P. Dance
(Boycott's locality for Vitrina major)

Friday May 3rd. to The Gower Peninsula, South Wales Dr. T. E. Thompson
Sunday May 5th. Pwll-du Bay (Marine)

For details please send S.A.E. to T. Pain,

██████████,
Millbank,
London, ██████████

A separate application must be made for each meeting.

T. Pain,
Field Meeting Organiser

CHRISTMAS 1973

The compiler sends the Season's Greetings and Good Wishes for the New Year to every reader of the Newsletter.

A. Walton, ██████████, Tulse Hill, London, S.W.2., wishes to borrow, for photocopying, the following numbers of The Conchologists' Newsletter: Nos. 2, 3, 4, 5, 6, 10, 12 & 14. All postage refunded. Any deposit demanded willingly paid. Would purchase any of these numbers if there are any sellers.

Cowries, cones, murex, strombus and other rare shells for collectors, send S.A.E. for lists of over 150 species: Kollecta-Shell, 4 Melrose Avenue, Bristol, BS8 2NG

The late Rev. H. E. J. Biggs

Members will be interested to know that the donations collected in memory of Mr. Biggs amounted to £16. Cheques for £8 each have been sent to Christian Aid and to the Church Missionary Society, the two charities particularly favoured by the Rev. Biggs.

Special Announcement

The Hon. Editor has tendered her resignation as from 22nd. November 1973. Until a successor is appointed, will all Members please send Editorial Communications to the Hon. Secretary.

BEAK MARKS ON CUTTLE 'BONES'

by John Cooper & Charles Philip Palmer

Phragmacones (Cuttle 'Bones') of Sepia officinalis Linné are common objects on British beaches. The carcasses of dead animals, with the phragmacones still in place but usually minus the head, are less common but still fairly frequent. By contrast the beaks of all cephalopods are rare and neither of us has ever seen one on a British beach. The following combined observations and ideas may go some way towards an explanation of these curious facts.

Many phragmacones have the marks of beaks on the ventral side, particularly at the anterior end. Two possible candidates for these triangular-shaped beak-impressions are cephalopods and sea birds. Both squids and cuttles are known to be cannibalistic, but sea birds are often seen pecking at carcasses.

During a 4 mile traverse of the shore west of Worthing pier and a similar walk west of Littlehampton, during June 1973, about 40-50 carcasses of Sepia were observed, and it was estimated that about twice as many detached phragmacones were seen. All but one of the carcasses had the phragmacone in place, but only one had the head still attached; no separated heads were seen anywhere along the combined 8 mile stretch of shore.

Nearly all the phragmacones, except those severely damaged, were removed from the bodies and examined for beak marks. Where these were present they were always either confined to, or concentrated at, the anterior end, and on the ventral surface. This is the position of the looped alimentary tract of Sepia and presumably the reason for the pecking.

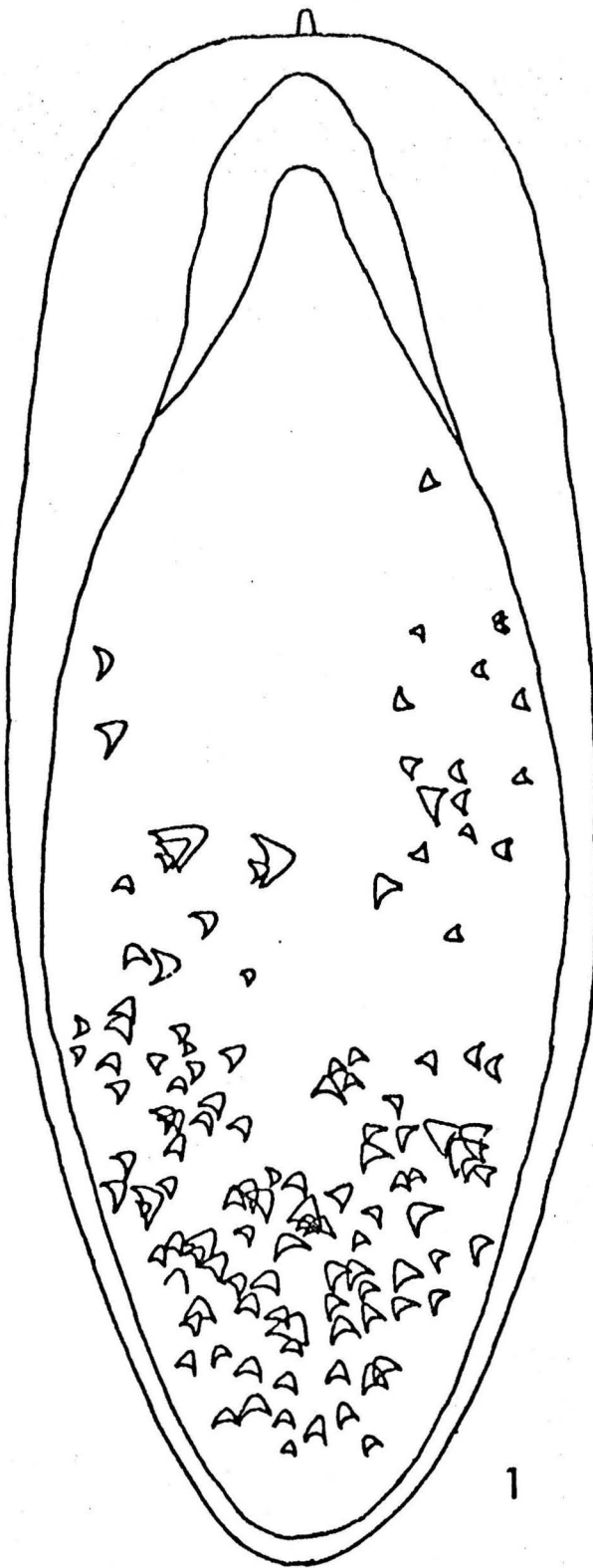
The absence of heads, both from the carcasses and separated on the shore, seemed to suggest that whatever was pecking at the gut was, at the same time, severing the muscular attachment of the head and causing it to drop off. Since the heads were not seen on the shore, it seemed likely that the pecking took place, soon after the death of the cuttle, off-shore and outside the Laminarian Zone.

To settle the question of whether it was cephalopods or sea birds causing the beak marks one of us observed that some of the marks had three grooves on the flat surface of the hole. Impressing the beaks of Sepia and two species of gull into plasticine revealed that the Greater Black-backed Gull, Larus marinus Linné, produced identical triangular impressions with triple grooving on the flat side. Impressions in plasticine from beaks of Sepia were unconvincing.

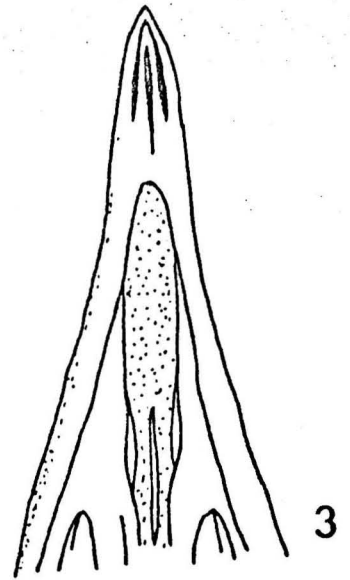
We conclude that dead cuttles are, by virtue of the phragmacone, still buoyant and are scavenged by gulls, and possibly other sea birds, for their gut-contents. This severs the muscular attachment of the head causing it to drop to the bottom. The carcass, with its buoyant phragmacone, is then washed ashore. It floats easily over the top of the Laminarian 'forest' which almost certainly impedes the shoreward movement of the head along the bottom. Hence, the phragmacones of cuttles are frequently deposited on the shore while heads and beaks are rarely so.

EXPLANATION OF PLATE

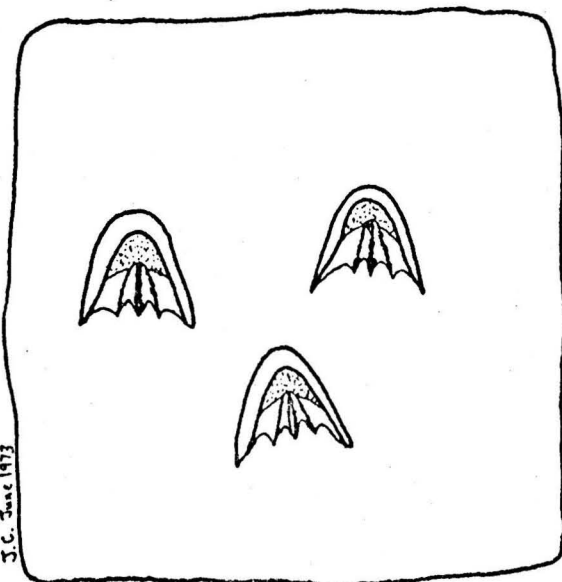
- Fig. 1. Ventral surface of phragmacone of Sepia officinalis Linné on which are superimposed (to a constant scale) beak marks from nine phragmacones (x 1).
 Fig. 2. Plasticine block with impressions taken from beak of bird skull shown in figs. 3 and 4 (x 2½).
 Fig. 3. Palatal view of bird skull (x 1).
 Fig. 4. Skull and mandible of Larus marinus Linné, showing the strongly curved upper beak and downcurving lower beak (x 1).



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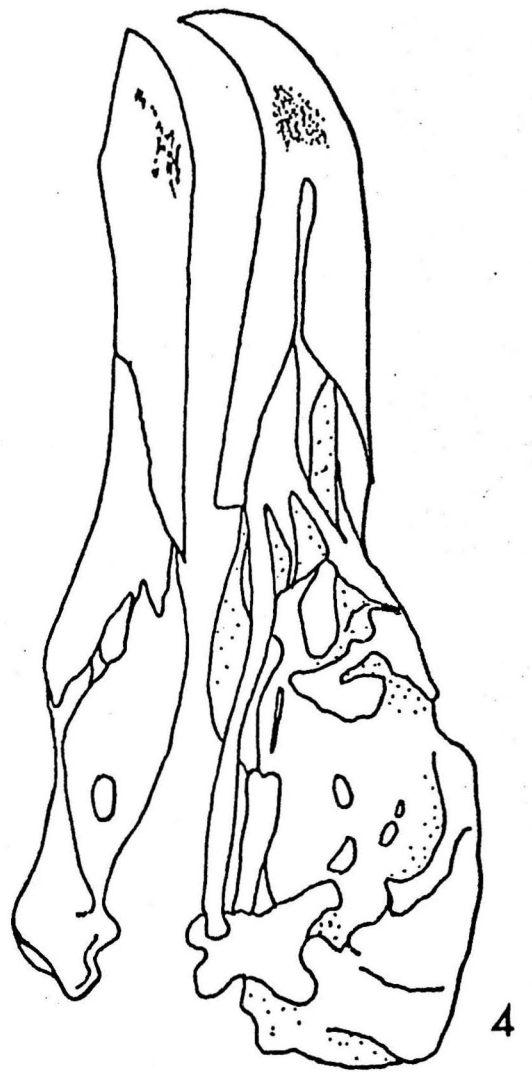


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J.C. June 1973

2



4

Cooper & Palmer

Beak marks on Cuttle 'bones'

No. 48

March 1974

Compiled by: P. E. Negus,

Chelsea Bridge Road,
London,

Produced by THE CONCHOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND

SHELLING IN SPITZBERGEN

We may deplore the insidious spread of tourism into countries on which the hand of man has hitherto lain lightly, but at least it does offer transport to remote areas and the opportunity of keeping ones eyes on the familiar yet subtly different sea shore of alien territory. This past summer I was able to spend three weeks in perhaps the most accessible sector of the true arctic - Spitzbergen - as a part-time and unofficial member of the Joint Universities Expedition from East Anglia and Nottingham. Having timed my arrival a week later than the main party, hoping, as I thought, to avoid the heavy labour of loading and unloading supplies, I soon found myself involved in typical British fashion manpacking food and tents across tundra swimming with water at the height of the summer thaw. The party was investigating glaciers in the neighbourhood of the former coal-mining settlement of Ny Ålesund, and the first place to be visited was Engelskbukta (English Bay) with the aptly named Comfortlessbre (glacier) nearby. After the heavens tipped down the worst summer storm in 10 years, according to the locals, it settled down for 10 days of peaceful fine typical arctic weather with the midnight sun reflected in a rosy glow from the peaks and snowfields.....

At first sight the largely gravel beaches of Spitzbergen appear barren to the eye of one used to sandy coastlines strewn with shell fragments, but careful examination of high water mark where Laminaria and Fucus are thrown up produces a surprisingly large number of shells, albeit few in species. At Engelskbukta, a broad westward-facing bay turbid with the water of glacial rivers (rather than homely sewage) many specimens of the arctic Venus, Gomphina fluctuosa were pocketed, together with an old friend, fresh periostracum-bearing Mya truncata thrown up by storm waves. Here however the latter shows all gradations to the arenaria-like form ovata, a characteristic assemblage in arctic seas. Several small, beautifully coloured bivalves turned out to be juveniles of the large cockle Serripes groenlandicus, and many somewhat worn examples of Margarites groenlandicus could be taken.

The rocky shores proved disappointing in the short time available for collecting, but this is to be expected in view of the severe conditions experienced by intertidal areas during the arctic winter. An ice foot formed from snow banks and sea ice develops on the upper part of the shore, which is therefore completely barren. The lower half of the shore sports a few hardy specimens of Balanus balanoides which must contend with glacially derived mud as well as the weather.

And so, back to the tourist boat plying between Spitzbergen and Bergen, and a further opportunity to try out a sparse knowledge of Norwegian and German as the only Britisher in the Second Class. A word of warning to intending arctic conchologists: wear a thick woolly hat, not on account of the weather, but as protection against those aggressive colonizers of the coastal tundra, the arctic terns!

I am indebted to Dr. Shelagh Smith for assistance in identifying some of the gastropods in the following collection, which was obtained from Ny Ålesund and Engelskbukta.

Margarites groenlandicus (Gmelin)
M. olivaceus (Brown)
Plicifusus kroeyeri (Müller)

Tridonta montagui (Dillwyn)
T. borealis Schumacher
Axinopsis orbiculata G.O.Sars

Colus cf. tortuosus (Reeve)
Buccinum glaciale L.
B. polare Gray
B. cf. tenue Gray
B. cf. sericitum Gray
Lora turricula (Montagu)
Retusa umbilicata (Montagu)
Musculus discors (L.)
Chlamys islandica (Müller)
Tridonta elliptica (Brown)

Serripes groenlandicus (Bruguiera)
Clinocardium ciliatum (Fabricius)
Gomphina (Liocyma) fluctuosa (Gould)
Macoma calcarea (Chemnitz)
Hiatella arctica (L.)
Cyrtodaria kurriana Dunker
Mya truncata L.
var. ovata Jensen
Lyonsia arenosa (Müller)

J. D. Peacock

EXTINCTION OF PHOLADS -- ? VICTIMS OF POLLUTION

Molluscs which bore into rock are particularly liable to local extinction should their burrows be overwhelmed with mud, and this was demonstrated recently at the island of Hilbre, Cheshire.

The group of three islands (Little Eye, Middle Island and Hilbre) lie about 2 miles off the NW corner of the Wirral peninsula of Cheshire, and have long been noted for the variety of marine life they shelter. Accessible on foot at certain states of the tide their Triassic rocks represent the only rocky bit of coast for many miles. On Hilbre, the largest island, the custodian (Mr. Bailey) and his family are the only permanent residents, though there are a few holiday bungalows. The two smaller islands are uninhabited.

The Oval Piddock, Zirfaea crispata (L.), has (or had) its sole remaining station in this part of NW England in the rocks of Hilbre, where it has been known for many years. Byerley (Fauna of Liverpool, p.34, 1856) gives the species as "Abundant at Hilbre Island imbedded in the sandstone rock; also between Hilbre and Hoylake impacted in clay". In 1910 Robert Standen found it at Hilbre, (Lancs. & Ches. Nat. vol.3, pp.114-115) but since then the colony seems to have dwindled, for when the late G. W. Fowler took living specimens in 1933 he wrote "near the lifeboat house on Hilbre and as the area is quite small it was easy to find. We had five good tides there, and right down to the bottom of the sandstone, but crispata is nearly extinct there, and what few there are were small...." (in litt. 20.10.1933). Since then no one has even found dead shells (although I saw pholad holes 20.vi.1940) until Mr. and Mrs. Ian Smith (in Oct. 1969) located two small colonies of dead shells in their borings. Finally in 1973 Mrs. Barbara Bailey after much arduous search, even conducted by torch-light during a February spring tide, found several small colonies about the NW corner of Hilbre, but all empty shells only. With them were shells of the White Piddock, Barnea candida (L.), hitherto unrecorded from Hilbre, and also in their holes. Later visits showed that mud had again covered up the colonies, and it seems most probable that increasing mud and pollution have been the cause of the species' extinction here.

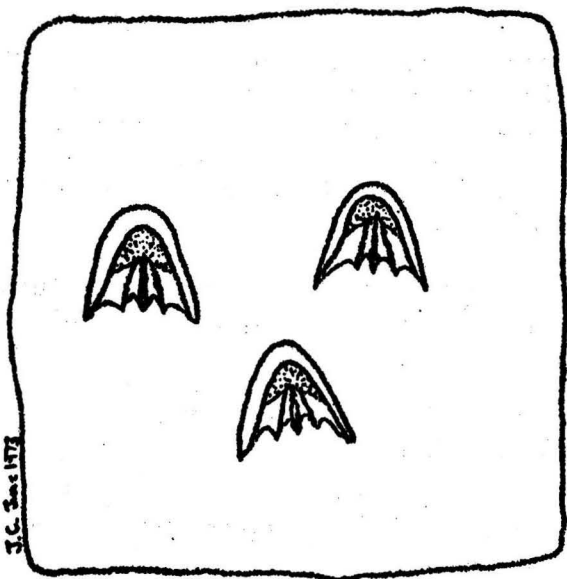
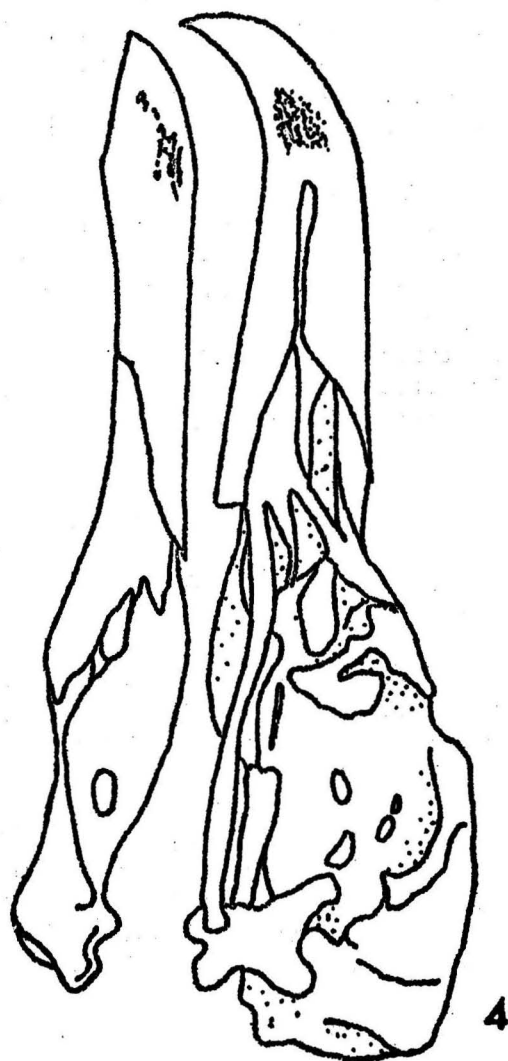
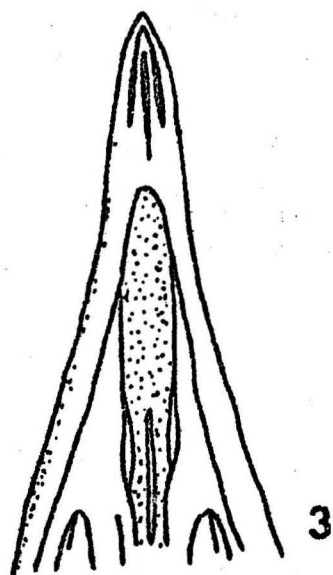
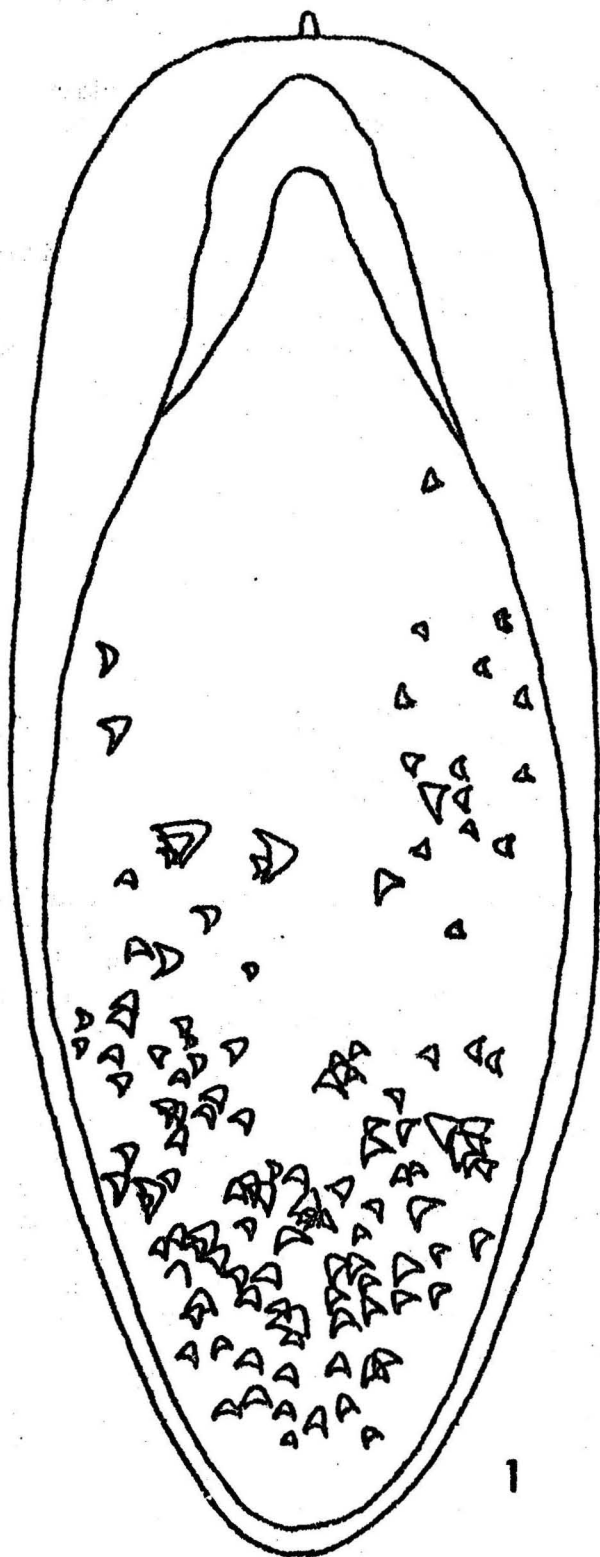
Barnea used to live, at least until the turn of the century, in peat on the Leasowe shore not far away, but we know of no recent records of live-taken examples.

It is clear that at one time Zirfaea and Barnea occurred plentifully about Hilbre and while one cannot say definitely that pollution and increasing muddiness have caused the extinction of both these species yet it seems highly probable that this is the case.

N. F. McMillan

BEAK MARKS ON CUTTLE 'BONES'

Phragmacones (Cuttle 'bones') of Sepia officinalis Linné are common objects on British beaches. The carcasses of dead animals, with the phragmacones still in place but usually minus the head, are less common but still fairly frequent. By contrast the beaks of all cephalopods are rare and neither of us



Cooper & Palmer

2 Beak marks on Cuttle 'bones'

has ever seen one on a British beach. The following combined observations and ideas may go some way towards an explanation of these curious facts.

Many phragmacones have the marks of beaks on the ventral side, particularly at the anterior end. Two possible candidates for these triangular-shaped beak-impressions are cephalopods and sea birds. Both squids and cuttles are known to be cannibalistic, but sea birds are often seen pecking at carcasses.

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The absence of heads, both from the carcasses and separated on the shore, seemed to suggest that whatever was pecking at the gut was, at the same time, severing the muscular attachment of the head and causing it to drop off. Since the heads were not seen on the shore, it seemed likely that the pecking took place, soon after the death of the cuttle, off-shore and outside the Laminarian Zone.

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John Cooper, Charles Philip Palmer

10-KILOMETRE SQUARE MAPPING SCHEME FOR NON-MARINE MOLLUSCA

Some 10,000 new records were incorporated during the 1973 field season, and I should like to thank everyone who contributed, often making long special journeys to reach "difficult" squares and so improve the coverage.

I hope that this will be the last report before the publication of a first edition of our Atlas, preparations for which are now well advanced at the Biological Records Centre. This year, therefore, a progress map is not published in the Newsletter, although I should be glad to send a photocopy showing the exact current situation to anyone specially interested, and who would like to do some "last minute" recording for the Atlas.

M. P. Kerney, Hon. Recorder for non-marine Mollusca,
Dept. of Geology, Imperial College, London, SW7 2BP

GENES IN GRID SQUARES - A PROGRESS REPORT ON THE TEN-KILOMETRE SQUARE SURVEY OF GENETIC VARIATION IN CEPAEA

In the September 1972 issue of the "Conchologists' Newsletter" (pages 276-

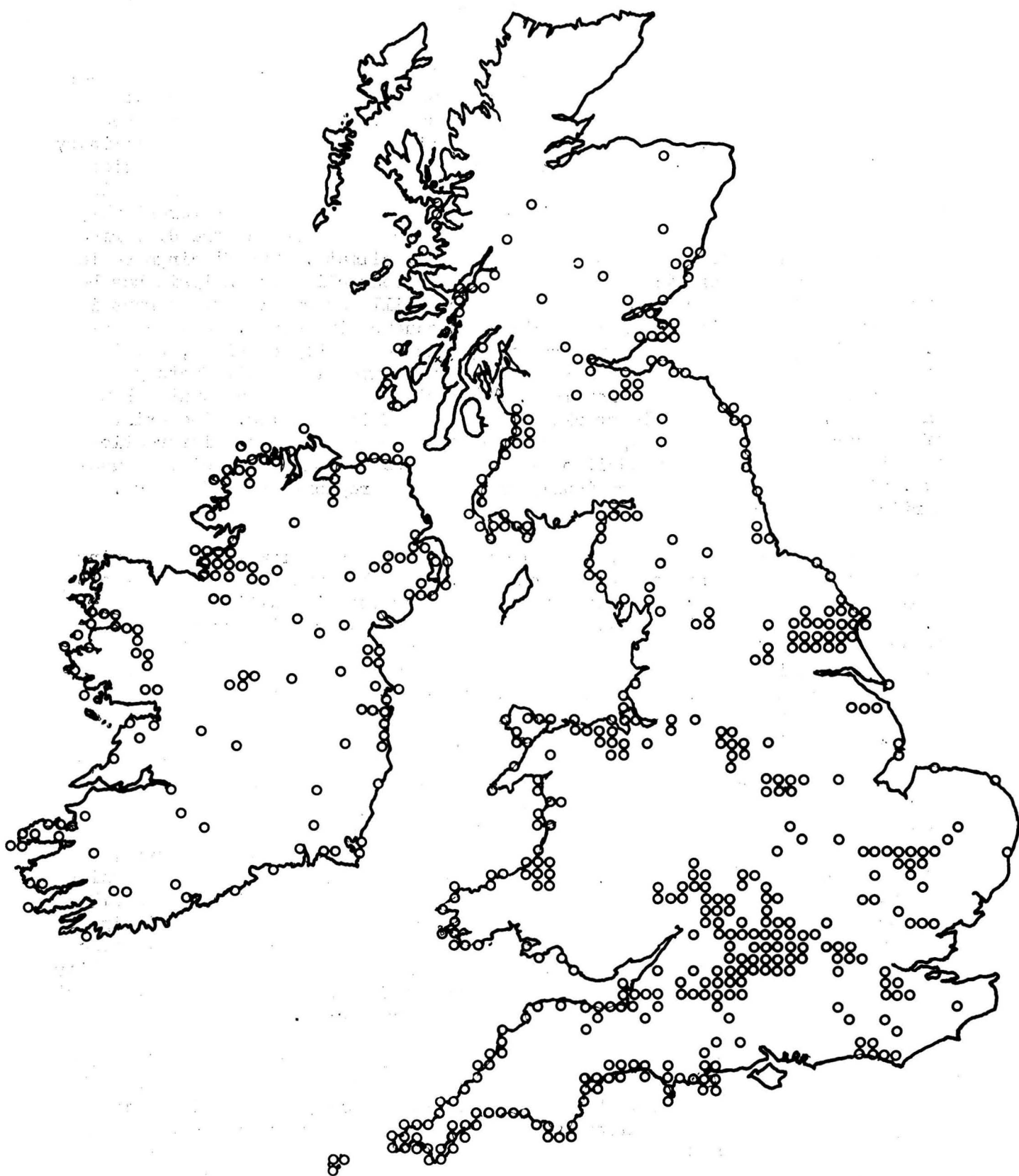
277), I published an appeal asking conchologists working on the ten-kilometre square survey of the distribution of British molluscs to collect random samples of Cepaea nemoralis and C. hortensis for use in a research project on the distribution of genetic variants in these species. Cepaea is, as is well known, the most variable of the British molluscs, and a large amount of research by professional and amateur scientists has been carried out on this variation throughout most of Europe. Professor M. H. Williamson of the University of York and I are in the process of collating all the data obtained during this research and collecting new Cepaea samples in Britain and on the Continent in an attempt to provide what may prove to be the most complete description yet available of genetical variation in relation to the environment in an animal genus.

Several members of the Conchological Society have sent us Cepaea samples, and these together with our own collections and those of other ecological geneticists now amount to more than 750,000 snails. The following map shows the distribution of C. nemoralis samples in Britain and Ireland. A preliminary analysis of the large scale distribution of gene frequencies in this species suggests that there is a strong tendency for yellow shells to be commoner in areas of high temperature, while white-lipped shells are found preferentially in cold wet places. The frequencies of other variants (such as the differing numbers of shell bands) cannot yet be related to climate. Our findings so far must be regarded as preliminary as only the simplest climatic analysis has been carried out and as, more important, there are still several important gaps in our data on geographical variation in gene frequency in Cepaea. Coverage of C. nemoralis populations in southern England is reasonably complete, but information on this species elsewhere in Britain is much less satisfactory. Information on genetic variation in C. hortensis is much less adequate than is that for C. nemoralis in almost all parts of the British Isles. The existence of a record on our sample map does not mean that we need no more information from that grid square; any additional data on Cepaea populations will be useful, although samples from previously investigated regions are, of course, particularly welcome.

We plan to extend our data on Cepaea during the next few years by making collections in new parts of the ranges of C. nemoralis and C. hortensis (notably in Portugal and Scandinavia) and by studying the high altitude species C. sylvatica in the Swiss Alps. The work on C. sylvatica will complement an investigation which has already been carried out on its close relative C. vindobonensis in Yugoslavia and Romania. We also hope to be able to obtain many more samples of C. nemoralis and C. hortensis from Britain and Ireland. It would be very helpful to this part of our research if conchologists mapping the distribution of British molluscs could collect Cepaea samples which could be used in the analysis of genetic variation. It is very important that there should be no selection by the collector of particular varieties, so that the sample collected gives an accurate picture of the proportions of the different varieties in the natural population. It is also preferable that samples should be collected from within a reasonably small area, perhaps 30 yards square, although this is not essential. Large samples (containing more than 50 snails) are particularly welcome as they enable us to examine the way in which shell characters such as colour and banding are associated with each other within a population, but even single shells are useful to our research. It would also be useful if samples could be accompanied by a full grid reference (or locality notes which would allow us to compute the grid reference) and a brief statement of the nature of the habitat in which they were collected.

I would be glad to score and return any samples sent to me, and will also send further notes on collecting and background information on the ecological genetics of Cepaea to anyone who may contemplate a survey of genetic variation in their local Cepaea populations. Any help which members of the Conchological Society could give would, of course, be fully acknowledged in our scientific publications.

Dr. J. S. Jones,
Department of Biology, Royal Free Hospital School of Medicine,
University of London, 8 Hunter Street, London, WC1N 1BP



British and Irish *Cepaea nemoralis* samples, mapped on the basis of
National and Irish Grid ten-kilometre squares

FIELD MEETING - TO MOSTON RUBBISH TIP, MANCHESTER, 14th. JULY 1973

Seven members and friends visited the tip and the adjacent golf course and recorded the following species:-

Beside the track at edge of golf course -

Discus rotundatus (Müller)
Arion hortensis Férussac
A. subfuscus (Draparnaud)
Vitrea contracta (Westerlund)
Oxychilus draparnaldi (Beck)
O. cellarius (Müller)

Oxychilus alliarius (Miller)
Retinella radiatula (Alder)
R. nitidula (Draparnaud)
Milax budapestensis (Hazay)
Agriolimax reticulatus (Müller)
A. caruanae Pollonera

In shallow pools -

Lymnaea peregra (Müller)

Pisidium casertanum (Poli)
P. personatum Malm

In marshy ground around pools -

Cochlicopa lubrica (Müller)

Arion intermedius Normand ... and
several lost golf balls

In a tributary of Moston brook -

Potamopyrgus jenkinsi (Smith)

Pisidium subtruncatum Malm (det.
M.P. Kerney)

On bank of brooklet -

Arion ater agg.

At head of valley, near gardens -

Arion circumscriptus Johnston

L. Lloyd-Evans

FIELD MEETING - TO DUDDON HEATH AND THE SHROPSHIRE UNION CANAL,
1st. SEPTEMBER 1973

Three members and a friend visited the above-mentioned sites, all in 10Km. square 33/56, and recorded the following species:-

Duddon Heath (wood edge and roadside bank) -

Carychium tridentatum (Risso)
Cochlicopa lubrica (Müller)
C. lubricella (Stabile)
Arianta arbustorum (L.)
Helix nemoralis L.
H. aspersa Muller
Hygromia hispida (L.)
Discus rotundatus (Müller)
Arion circumscriptus Johnston

Euconulus fulvus (Müller)
Vitrea contracta (Westerlund)
Oxychilus alliarius (Miller)
Retinella nitidula (Draparnaud)
Vitrina pellucida (Müller)
Milax budapestensis (Hazay)
Agriolimax reticulatus (Müller)
Arion intermedius Normand
A. ater agg.

Wharton's Lock - Ditch -

Potamopyrgus jenkinsi (Smith)

Pisidium personatum Malm

- Canal and bank -

Viviparus viviparus (L.)
Potamopyrgus jenkinsi (Smith)
Bithynia tentaculata (L.)

Hygromia hispida (L.)
Discus rotundatus (Müller)
Arion ater agg.

Bithynia leachi (Sheppard)
Carychium minimum Müller
C. tridentatum (Risso)
Lymnaea truncatula (Müller)
L. peregra (Müller)
Physa fontinalis (L.)
P. cf. heterostropha Say
Planorbis vortex (L.)
P. albus Müller
Succinea pfeifferi Rossmassler
Cochlicopa lubrica (Müller)
Helix nemoralis L.
H. aspersa Müller

Vitrea crystallina (Müller)
Oxychilus cellarius (Müller)
O. alliarius (Miller)
Retinella nitidula (Draparnaud)
Zonitoides nitidus (Müller)
Agriolimax reticulatus (Müller)
A. laevis (Müller)
Anodonta cygnea (L.) - dead shell
Sphaerium rivicola (Lamarck)
S. corneum (L.)
Pisidium nitidum Jenyns
Dreissena polymorpha (Pallas) - dead shell

Overgrown pond in pasture beside canal -

Vertigo antivertigo (Draparnaud)

Vertigo substriata (Jeffreys)

L. Lloyd-Evans

FIELD MEETING - TO BURNHAM BEECHES, BUCKS., 21st. OCTOBER 1973

LEADERS: Dr. M. P. Kerney and Dr. A. J. Rundle

Six members met at Slough Railway Station at 11.05 a.m. for the annual Autumn Slug Foray. The party was first taken by car to the small car park at the S.W. end of Victoria Drive, Burnham Beeches (SU(41)944846). Burnham Beeches is a well-known locality for several western and northern species, including Vertigo substriata, Acanthinula lamellata and Zonitoides excavatus, which are otherwise rare or absent in S.E. England. Burnham Beeches is also a locality for the very local slug Limax tenellus which is restricted to old woodlands and is one of the original localities for the very local snail Vitrina major in Britain. It was hoped to find at least some of these interesting species on this visit.

The party set off N. Eastwards along the Drive to a hollow on the south side of the Drive (SU(41)947848) known to contain abundant Acanthinula lamellata and frequent Acme fusca in the deep beech leaf litter that had collected there. This litter was sieved and A. lamellata easily found but A. fusca was not found until sieved samples were sorted at home. The following species were found in the leaf litter:

Acme fusca (Montagu)
Carychium tridentatum (Risso)
Cochlicopa lubrica (Müller)
Acanthinula aculeata (Müller)
Acanthinula lamellata (Jeffreys)
Punctum pygmaeum (Draparnaud)

Discus rotundatus (Müller)
Euconulus fulvus (Müller) seg.
Vitrea crystallina (Müller)
Retinella pura (Alder)
Retinella nitidula (Draparnaud)

A few comments on the distribution of Acanthinula lamellata in Burnham Beeches would be worth while here. Various people have independently informed the writer that this species is restricted to a single hollow in the woods. Several visits to the southern end of the Beeches this year has revealed it in over a dozen sites in the vicinity of Victoria Drive. The species is not even restricted to hollows but is found in most places where the habitat is right. It seems to favour deep beech leaf litter with a damp but friable base often in association with brambles (Rubus fruticosus Linnaeus agg.) and stinging nettles (Urtica dioica Linnaeus). It is often associated with Acme fusca which likes the same conditions.

The next two hours were spent in searching for slugs under logs and pieces of wood in the vicinity of Victoria Drive with a fair degree of success. The following molluscs were found in this way:

Discus rotundatus (Müller)
Arion intermedius Normand
Arion circumscriptus Johnston agg.

Oxychilus alliarius (Miller)
Retinella radiatula (Alder)
Retinella nitidula (Draparnaud)

<u>Arion hortensis</u> Férussac	<u>Zonitoides excavatus</u> (Alder)
<u>Arion subfuscus</u> (Draparnaud)	<u>Limax tenellus</u> Müller
<u>Arion ater</u> (Linnaeus) agg.	<u>Limax maximus</u> Linnaeus
<u>Vitrea crystallina</u> (Müller)	<u>Limax cinereoniger</u> Wolf
<u>Vitrea contracta</u> (Westerlund)	<u>Agriolimax reticulatus</u> (Müller)
<u>Oxychilus cellarius</u> (Müller)	

The two L. cinereoniger were found at SU(41)948849 and the single L. tenellus at SU(41)954853. In addition to the species listed above Hygromia striolata (C. Pfeiffer) and Oxychilus helveticus (Blum) were found on butterbur (Petasites hybridus (Linnaeus)) leaves and Lehmannia marginata (Müller) was found in deep slots on a beech trunk.

The party now returned to the car and had lunch.

After lunch the party proceeded by car to where the Alder Bourne (a stream) is crossed by a road about $\frac{1}{2}$ mile E.S.E. of Fulmer, just over a mile S. of Gerrards Cross (SU(41)008854). It was hoped to find Lauria anglica (Wood) which was recorded from "Aldbourn, Gerrards Cross" in 1918. Although this species was not found on this occasion 24 other species were found by searching the way-side verge and stream.

<u>Carychium tridentatum</u> (Risso)	<u>Discus rotundatus</u> (Müller)
<u>Lymnaea truncatula</u> (Müller)	<u>Arion intermedius</u> Normand
<u>Lymnaea palustris</u> (Müller)	<u>Arion hortensis</u> Férussac
<u>Acroloxus lacustris</u> (Linnaeus)	<u>Vitrea crystallina</u> (Müller)
<u>Cochlicopa lubrica</u> (Müller)	<u>Oxychilus draparnaldi</u> (Beck)
<u>Vallonia costata</u> (Müller)	<u>Oxychilus cellarius</u> (Müller)
<u>Ena obscura</u> (Müller)	<u>Oxychilus alliarius</u> (Müller)
<u>Helix hortensis</u> Müller	<u>Oxychilus helveticus</u> (Blum)
<u>Helix aspersa</u> Müller	<u>Retinella pura</u> (Alder)
<u>Hygromia striolata</u> (C. Pfeiffer)	<u>Vitrina pellucida</u> (Müller)
<u>Hygromia hispida</u> (Linnaeus)	<u>Agriolimax reticulatus</u> (Müller)
<u>Monacha cantiana</u> (Montagu)	<u>Pisidium personatum</u> Malm

The habitat of Pisidium personatum deserves some comment. It was abundant in damp oak leaf and twig litter in the bottom of a ditch on the E. side of the road and was associated with Carychium tridentatum (common), Lymnaea truncatula (a few) and Cochlicopa lubrica (a few). This species of Pisidium is at times about as terrestrial in habitat as a bivalve can be and frequently turns up in such surprising places. This particular leaf and twig litter was also interesting on account of other items present in it. It contained a great many discrete oak leaf spangle galls of three types - Smooth Spangle Galls (produced by the gall wasp Neuroterus albipes) were very common, Common Spangle Galls (produced by N. quercus-baccarum) and Silk-Button Spangle Galls (produced by N. numismalis) were frequent. The leaf litter also contained several louse pupae, probably originating from animals from the nearby farm.

The party next travelled to Penn Wood, about 1 mile E. of Hazlemere, which is another site for Limax tenellus. A stop was made on the E. side of the wood but as this consisted of relatively newly planted trees, mostly birch, the search was quickly abandoned as it was most unlikely to find tenellus there. A very shallow roadside pond (SU(41)923960) with a leaf-covered muddy bottom was examined, however, and the following species were found in and around it.

<u>Carychium tridentatum</u> (Risso)	<u>Planorbis carinatus</u> Müller
<u>Lymnaea stagnalis</u> (Linnaeus)	<u>Oxychilus helveticus</u> (Blum)
<u>Planorbarius corneus</u> (Linnaeus)	<u>Sphaerium corneum</u> (Linnaeus)

Planorbarius corneus was abundant in the pond and the adults were quite large (up to 31 mm. maximum diameter). Many of the adult shells were deeply pitted and lacked the central juvenile whorls. In a few shells this pitting was very extreme and more than half the shell surface was affected. The pitting was most prominent on the ventral (concave) surface and frequently individual pits represented about 2 mm. of lost shell. Even so, the shells were relatively thin for the species and the external pits were represented by uneven swellings internally. One can only guess at the cause of this curious shell damage but it seems likely that the snails rasped each other's shells in an attempt to supplement the poor calcium supply.

The party finally went by car to the north edge of the wood and followed a public footpath into a longer established part of the wood. Molluscs were very hard to find here but after an intensive search the following were found:

Arion intermedius Normand
Arion subfuscus (Draparnaud)

Arion ater (Linnaeus) agg.
Limax cinereoniger Wolf

The party returned to Slough Station at about 5.00 p.m. Although only about ten new records for the non-marine census scheme had been obtained, the day had been a most enjoyable and instructive one. The finding of ten species of slugs had also justified its title of slug foray.

A. J. Rundle

CUTTLEFISH AND THUNDERSTORMS

In conversation with fishermen and sailing enthusiasts, at Felpham near Bognor, Sussex, during June 1973, I remarked that there were many headless cuttlefish carcasses and 'bones' on the beach. It came as a surprise to learn from them that this was a common occurrence after a thunderstorm. Three different people confirmed that "-after a good (i.e. local) thunderstorm the sea is often littered with dead or dying cuttles which can be picked up by the dozen".

This was new to me and also new to several conchologists to whom I subsequently mentioned it, but it seemed probable that there might be some truth in their idea that "-thunderstorms kill off cuttlefish". There had, in fact been several severe local thunderstorms along the south coast during the previous 5-6 days so that it was not easy to dismiss these statements as just 'folklore'.

If the fishermen are correct in their observations and there is a connection between thunderstorms and many dead cuttlefish, then the following hypothesis may account for it. Lightning strikes are, at close quarters, about as loud as a small (500lb) bomb exploding. There is no shock-wave but the report, transmitted through water, may selectively stun cuttlefish more than fishes. The central nervous system of cephalopods, unlike that of fishes, is not enclosed by a bony covering, and this may make them more vulnerable to loud reports.

The explanation offered by the fishermen was that the cuttlefish were electrocuted, but this seems unlikely and would not account for the numbers since the area of a lightning-strike is small compared with that covered by the loud report.

It would be interesting to hear from any member who has heard of this from another part of the country, or who has had personal experience; and also anyone who can offer a better explanation. Perhaps the matter could be kept in mind for the coming summer.

C. P. Palmer

NEW SHELLS FOR OLD IN A STATELY HOME

When my son and I attended an Auction of Veteran Cars at Ragley Hall, one of the Stately Homes of Warwickshire, in August 1972, I never dreamt that it would lead to a most interesting cleaning job for me. The task was that of cleaning a large number of tropical shells which had been in the possession of the Hertford family for many years, possibly for as long as a century and a half. Whilst my son was busy with the auction, I took the opportunity of looking over the beautiful home of the Marquess of Hertford and was naturally rather thrilled to see that the new mural in the Great Hall included some very good paintings of seashells. The end of the tour brings one out by the tea-rooms, and there were several cupboards full of large shells. The cupboards were mostly in dark corners and the shells so dirty and dusty, that they really looked quite uninteresting apart from their size and shape. I could see that there were some really good shells such as Haliotis fulgens, Charonia tritonis, Murex brassica and Pleuroploca gigantea and that they could be made to look as

they ought to, if someone would take the trouble to give them a wash and brush up! My conchological fervour was roused, and as soon as we reached home, I sat down to write to Lord Hertford and ask if I might do that, and also try to identify the shells.

Almost immediately I had a reply saying that I might, providing some respectable person vouched for me - which our President, Mr. Crowley, kindly agreed to do! As the Hall was to be closed for the winter whilst builders and decorators moved in, I was to drive over and collect the shells and keep them at home for several months.

One fine day in October (1972) I went to Alcester and found that apart from the shells I had already seen, more had been found, put away in boxes. All the shells were counted and loaded in large cartons into my car - there were about 150 large shells and they just about filled every space except for the driver's seat! I can tell you that I drove home most cautiously, terrified in case some lorry should crash into the back of my car and break the shells!

On arriving home, the first problem was to get the worst of the dirt off the shells. This was not as easy as I thought. First of all, many of the shells were so large that two of them would have filled the sink. It would obviously take too long to do it that way. I therefore decided to give the large ones a bath. I filled the bath with very warm water and detergent, put an old sheet on the bottom so that the shells would not scratch the enamel, and then started to put some of the shells in. Of course the sheet kept billowing up under the foam until I had put enough shells round the edges to hold it down. When I had a bath full, I had to leave them to soak for about 4 hours as the dirt was really ingrained grime. Talk about dust of ages! Then I took them out one by one, scrubbed them with a nailbrush and sometimes with some Chemico as well, and put them into a laundry basket lined with a bath towel, since they had to be carried downstairs to the garden to be dried, and we didn't particularly want drips of water all down the stairs. I suppose it took about 3 or 4 baths to clean the largest shells, such as Cassis madagascarensis and C. tuberosa and the various large Murex, and the other smaller shells could be done in bucket or sink as time permitted. Luckily we had a gloriously sunny week, so that drying was no problem. Some shells had to be soaked in a solution of bleach as well, but finally they were all clean and dry. I put them in the study and it was just like walking into a miniature Shell Museum. I had some lovely surprises. On the whole I knew what to expect, but even I was surprised when, for example, some of the Murex turned out to be radix and nigritus.

In order to preserve the colouring, I oiled the shells lightly with mineral oil. Then at last I was able to start the fascinating job of identifying them. Lord Hertford thought that many of them were collected by one of his ancestors, Admiral Sir George Seymour, in the South Seas, in the early 19th. century; I found that although there was a good selection of shells from the Pacific area, many of them came from the Panamic Province, and it was a privilege for me to be able to handle shells from a part of the world which was unknown to me. Most of the shells were well-known collectors' items, but some were quite uncommon. A list of the shells is given at the end, in alphabetical order. This list does not cover the whole of the Hertford shell collection, since one cupboard with several drawers could not be opened, the key having been mislaid. It is to be hoped that this cupboard can be opened during this coming winter (1972-73) and promises to make interesting identification, since those shells that could be seen are of the Conus, Cypraea and Harpa genera.

Two things I noticed in particular - one was that there was no smell at all, and yet when I lifted some of the Cassis out of the bath, I was horrified to see a dark-brown stream of liquid run out, and also some black and brown lumps. In fact, one C. tuberosa was so bad that I almost despaired of ever getting it clean; I rinsed it day after day for quite a while until I was satisfied. So one might draw a moral from this and say "If you can't get rid of that nasty smell in your shell, leave it for 150 years!" The other thing was that the condition of the shells was perfect - obviously except for beachworn specimens - and that they looked as if they had been collected yesterday. If the shells are really over a century old, it just proves what a marvellous substance shells are made of, because how many other materials can stand up to over a century without any change in their appearance and condition?

It was also interesting to note that the periostracum on some of the shells, in particular the Pleuroploca gigantea, was perfectly intact. One of the Patella mexicana had quite a growth of moss on it, which would not come off even after a good soaking.

This is probably the only cleaning job in my life which I really enjoyed.

Mrs. H. H. E. Nash

List of Shells belonging to the Marquess of Hertford

Gastropods

<u>Aporrhais mainensis</u> C.W. Johnson	<u>Astraea undosa</u> Wood ?
<u>Cassis cornuta</u> Linné	<u>Cassis madagascarensis</u> Lamarck
<u>Cassis tuberosa</u> Linné	<u>Charonia tritonis</u> Linné
<u>Charonia variegata</u> Lamarck	<u>Concholepas concholepas</u> Bruguière
<u>Cymatium femorale</u> Linné	<u>Cymbium olla</u> Linné (juv)
<u>Cypraeacassis rufa</u> Linné	<u>Cypraea caputserpentis</u> Linné
<u>Cypraea caurica</u> Linné	<u>Cypraea arabicula</u> Lamarck
<u>Cypraea lynx</u> Linné	<u>Cypraea moneta</u> Linné
<u>Cypraea ocellata</u> Linné	<u>Cypraea pulchra</u> Gray (juv)
<u>Fasciolaria gigantea</u> Kiener	<u>Ficus ventricosus</u> Sowerby
<u>Haliotis cracherodi</u> Leach	<u>Haliotis fulgens</u> Philippi
<u>Haliotis rufescens</u> Swainson	<u>Lambis chiragra</u> Linné (1 juv.)
<u>Lambis truncata</u> Linné	<u>Mammilla sebae</u> Recluz?
<u>Melo aethiopia</u> Linné	<u>Melo amphora</u> Solander
<u>Melo melo</u> Solander	<u>Melongena melongena</u> Linné
<u>Murex brassica</u> Swainson	<u>Murex erythrostoma</u> Swainson
<u>Murex nirutis</u> Philippi	<u>Murex palmarosae</u> Lamarck
<u>Murex radix</u> Gmelin	<u>Murex ramosus</u> Lamarck
<u>Murex regius</u> Swainson	<u>Murex sauliae</u> Sowerby
<u>Murex triremis</u> Perry	<u>Nautilus macromphalus</u> Sowerby
<u>Nautilus pompilius</u> Linné	<u>Nerita polita</u> Linné
<u>Patella mexicana</u> Broderick & Sowerby	<u>Polinices helicoides</u> Gray
<u>Polinices limi</u> Pilsbry	<u>Purpura patula</u> Linné
<u>Pleuroploca gigantea</u> Kiener	<u>Sinum maculatum</u> Say
<u>Stigmaulax elenae</u> Recluz ?	<u>Strombus galeatus</u> Swainson
<u>Strombus gigas</u> Linné (damaged)	<u>Strombus lentiginosus</u> Linné
<u>Strombus luhuanus</u> Linné	<u>Strombus peruvianus</u> Linné
<u>Strombus juvenile</u> (possibly gallus?)	<u>Syrinx aruanus</u> Linné
<u>Trochus niloticus</u> Linné	<u>Tonna galea</u> Linné
<u>Tonna ringens</u> Swainson (1 juv.)	<u>Uber conicum</u> Lamarck
<u>Terebra maculata</u> Linné (juv.)	

Bivalves

<u>Arca multicostata</u> Sowerby ?	<u>Atrina rigida</u> Solander
<u>Callista chione</u> Linné	<u>Cardium elatum</u> Sowerby
<u>Cardium pseudolina</u> Lamarck	<u>Crista ericina</u> Linné
<u>Hippopus hippopus</u> Linné	<u>Mytilus planulatus</u> Lamarck
<u>Arca cuneata</u> Reeve ?	<u>Paphia euglypta</u> Philippi
<u>Pinctada margaritifera</u> Linné	<u>Pinctada maxima</u> Linné
<u>Pinna alternata</u> Reeve ?	<u>Placuna placenta</u> Linné
<u>Pitar lupinaria</u> Lesson	<u>Spondylus avicularis</u> Lamarck
<u>Tellina virgata</u> Linné	<u>Tridacna crocea</u> Lamarck

GENERAL NOTES

Possible shedding of the penis in Littorina saxatilis

The usual method of sex determination in Littorinidae seems to have been to accept the presence or absence of a penis as indicating the animal to be a male or female respectively. However, in 1969 John Grahame announced in Nature (221: 976) he had found that in Littorina littorea the penis could be shed whole, which placed doubt upon the use of the penis as a guide in 'sexing' L. littorea. Grahame considered it probable that L. saxatilis might have the

same habit, and three times recently I have found a whole, fully mature, free penis in the washings from some tidal aquarium chambers containing L. saxatilis only. All the animals in the chambers were apparently healthy, leading to the deduction that the organ had probably been shed in the same way as reported for L. littorea. A more detailed examination of this phenomenon in L. saxatilis is now being made, to establish that penis-shedding does take place in the normal course of events, and to investigate the histological mechanisms which must be involved. However, it was thought worthwhile to circulate this preliminary note as a further caution to intending Littorina 'sexers'.

Charles Pettitt

Essay Competition for Junior Members

We are pleased to announce that the winner of this competition is Peter Topley (age group 15 - 18). His essay entitled 'Some Observations and Notes on Helix (H.) pomatia L., Britain's Largest Land Snail' will appear in the June issue of the Newsletter.

Shell Dialect

I tried a bit of 'reet Lankysher' on some of the Members at a recent meeting and readers may be amused by this example - "Hoo skens lak a basket o' whelks" means "She has a very bad squint".

Marjorie Fogan

Books available

Journal of Conchology: Volume 25, No. 1 to 8 inclusive. 50p per issue.
Volume 27, No. 5/6 & 7. £1.00 each.
Volume 28, No. 1. £1.00

'Our Country's Shells' by W. J. Gordon (Simpkin Marshall, not dated). £1.00.
'Shells of New Zealand' by A. W. B. Powell (Whitcombe, 1954). £2.00.
'Indo-Pacific Tridacnidae' by J. Rosswater, 1965 (No cover). £1.50.
'Native Shells' (Nature in New Zealand) by R. K. Dell (Reed, 1960). £1.00.
'British Bivalve Seashells' by N. Tebble (B.M.N.H., 1966). £0.50.
'The Scallop', ed. Ian Cox, Shell Company, 1957. £1.50.

The above to be sold on behalf of a member with advantage to the Society.
Enquiries to: T. E. Crowley, [REDACTED], Church Street, Bampton, Oxford,
[REDACTED]

Land and Freshwater Mollusca Course

Leonard Wills Field Centre, Nettlecombe Court, Williton, Taunton, Somerset,
August 14 - 21, 1974.

This is a course on the identification and distribution of our non-marine molluscan fauna. Information will be given on the habitat requirements of the various species and the predictive value of such information tested in areas for which molluscan faunal lists are lacking.

Tutor: Dr. M. J. Bishop, University of Cambridge, Dept. of Zoology, Downing Street, Cambridge, CB2 3EJ

Fee for the week: £22.

(Anyone attending is expected to be an individual member of the Field Studies Council, and may enrol as such during his stay at the Field Centre, for as little as 50p per annum).

Details from the Warden.

Wanted

C. M. Yonge: Oysters, Collins, London 1960. The Cowry, Vol. 1, No. 3, 1962.
Please send offers indicating price and condition to: Dr. E. Sandor, [REDACTED],
[REDACTED], Woodford Green, Essex, [REDACTED], U.K.

Shells for Sale

Browse in baskets full of shells from all parts of the world - at Eaton's Shell Shop, 16 Manette Street, off Charing Cross Road, London, W1V 5LB (01-437 9391). We are interested in purchasing British Marine specimens - Gastropods & Bivalves, and also Fossils. Offers are invited.

Hellenic Shell Club

The Society was pleased to receive an attractive greetings card from this Club at Christmas. If any member is thinking of visiting Greece, they may like to contact our Secretary, Mrs. Rands, for the address.

FIELD MEETINGS 1974

Programme No. 2

Sunday May 5th.	Northants N.H.S. Meeting at Walton-on-Naze, Essex. (Conch. Soc. Members will be very welcome)	Mr. T. Pain
Friday May 10th. to Sunday May 12th. <u>NOTE CHANGE OF DATE!</u>	The Gower, S. Wales. Pwll-du Bay (Marine)	Dr. T. E. Thompson
Saturday June 15th.	Leicestershire. (A non-marine census survey)	Mr. I. M. Evans
Saturday July 13th.	Cassiobury Park, Watford, Herts. (Fresh-water Mollusca for juniors and beginners)	Mr. D. Worth
Saturday August 17th.	Dungeness, Kent. (Survey of marine census area 14)	Mrs. C. J. Pain

For details of the above meetings, send S.A.E. to:

T. Pain, Field Meetings Organiser, [REDACTED], Millbank,
London, [REDACTED]

A separate application must be made in respect of each meeting.

YORKSHIRE CONCHOLOGICAL SOCIETY

Members of the Conchological Society will be welcome to attend any meetings; details from the Secretary, E. Dearing, 14 Nowell Grove, Read, Burnley.

Indoor Meetings in City Museum, Leeds:

March 9 - Mr. A. Norris - "Continental Molluscs".

October 26 - Annual General Meeting and Presidential Address.

Field Meetings - at 11 a.m.:

April 6 - Bridestones and Ellerburn Park.

May 4 - Rodley Canal and Low Wood Reserve.

Sept. 7 - Ashberry Pastures and Garbutt Wood.

Oct. 5 - Askham, Strensall and Moorlands.