

THE CONCHOLOGISTS' NEWSLETTER

Index to Numbers 81 to 100 (1982-87)

Abalone, development of culturing techniques	53	Asham Quarry, fossil mollusca data from	131
Abbott, R.T., 'Collectible (sic) shells of South-eastern U.S., Bahamas and Caribbean' (review)	279	Ashfordia granulata, helps to defeat planning application	366
Abbott, R.T. & Dance, S.P., 'Compendium of Seashells' (notice)	57	ASKEW, P.S.A., A molluscan fauna with Pomatias elegans from an archaeological site in the City of London	65
Achatina lactea, live in Somaliland	196	Astraea rugosa, figure	162
Aequipecten opercularis, figure	103	ATKINSON, N.K., The non-marine mollusca of the Isle of May, Fife, Scotland	197
Afropunctum seminum, in greenhouse in Holland	437	Australian cowries (rare species available)	18
Akera bullata, figure	106		
Alcock, A., extracts from his 'A naturalist in Indian seas'	13		
ALEXANDER, K., Dowrog Common, Pembrokeshire	345	Baker, S.W., collector in East Africa	111
Allorossia glaucopsis, figure	241	BANK, R.A., winner of contest	48
Alloteuthis media, figure	243	Barber, L., 'The heyday of Natural History' (extract)	137
Alloteuthis subulata, figure	243	Barnea candida (L.), found alive on Merseyside	71
Alpana and the Sacred Conch	414	Basildon House, shell collection at	383
Alvania punctura, figure	166	BEBBINGTON, A., Rare shells crushed	222
Ammonite capitals (architecture)	87	BELL, M., Mollusc analyses of two Neolithic sites on the Cotswolds	130
ANDERSON, R., A molluscan weekend in the Dublin area, Sept. 1981	25	Bivalve shells, mathematics of patterns	380
Andrews, M., 'The flight of the Condor' 1982 (notice)	33	Blood-mouth, artifacts made from the	357
Angell, S. (architect) (quotation from)	87	Books on molluscs, a criticism of	22
Angiostrongylus vasorum, a nematode parasite of dogs and slugs	145	Bosch, D. & E., 'Sea shells of Oman' (edited by K. Smythe) (notice)	38
Angiostrongylus vasorum, life-cycle	145	Brachioteuthis riisei, figure	267
ANON, Molluscs in Oman	129	British Chitons, guide to shell characters	259
Aplexa hypnorum, occurrence in polluted lake in Lancashire	410	British Marine Bivalves, collection by W.H. Pocock	98
Archaeological deposits, the interpretation of Molluscan assemblages from	131	British Marine Workshop, report of Bivalve mollusca, larvae of	336
Archaeological sites in Greece and Cyprus, bibliography on shells from	126 & 128	British Museum, 'A century of Zoology' (review)	298
Archaeological site, molluscs from one in the City of London	65	British Wildlife Appeal	11
Arctic analogues of Devensian fossil assemblages, possibility of their existence	132	Brown, C. Barrington, 'Canoe and camp life in British Guiana', 1876 (extract)	349
Archer, F. & Archer, S., collections of	366	Brown, D.S., notice of section on freshwater mollusca in 'The Biogeography and ecology of Southern Africa'	92
Argobuccinum argus, correction	66	Brown, Capt. T., some works of	187
Argobuccinum proditor tristanense Dell, found in Cornwall not A. pustulosum (=A. argus)	66	Brown, Capt. T., 'Popular natural history and characteristics of animals' 1869 (notice)	35
Arlington Court Shell Collection	285	Buccal regurgitation, in Ascoglossans	35
ARTHUR, A., Further notes on Jan Light's unusual find from Cornwall	66	Budapest, International Malacological Congress	84
			81

Bude Canal and Marsh, mollusca list	175	Cockle recipes	223
Bull. Malac. Soc. London No. 5		Collectors in East Africa	67, 111, 112
(notice)	366		138, 141, 215, 369
BURN, R., Unpublished comments from		COLVILLE, B. & COLES, B., A week's	
William MacGillivray	390	snail collecting in Ireland	192
BUTOT, L.J.M., 14th European Philips		COMFORT, A., Shells as line automata	380
Contest for young scientists and		Conchological Society, anonymous	
inventors May 10-14 1982	48	donation to	97
Caecum glabrum, figure	166	Conchological Society, proceedings	
<u>Caliphylla mediterranea</u> (Ascoglossa)		of meetings,	956th 15, 957th 16
buccal mass of	85		958th 16, 959th 34
Calliteuthis reversa, figure	267		960th 34, 961st 72
CAMBRIDGE, P., A plea to authors,			962nd 73, 963rd 92
publishers and reviewers	22		964th 93, 965th 94
CAMBRIDGE, P., Where time stood			966th 114, 967th 115
still; a portrait of Oman	129		968th 154, 969th 155
CAMERON, R., Witcombe Wood revisited	227		970th 156, 971st 180
Celebrities in shells (Dutch dolls			972nd 181, 973rd 182
in historic costumes made of			974th 232, 975th 233
shells)	9		976th 253, 977th 254
Cepaea nemoralis, food of pheasants	252		978th 254, 979th 282
Cephalapod keys	264		980th 283, 981st 301
Cerithiopsis fayalensis?	168		982nd 301, 983rd 303
CHATFIELD, J., A biological weekend			984th 339, 985th 340
near Selborne, Hampshire	88		986th 341, 987th 363
CHATFIELD, J., Conchology starts at			988th 364, 989th 365
home	350		990th 386, 991st 388
CHATFIELD, J., Eighth International			992nd 389, 993rd 434
Malacological Congress, Budapest,			994th 436
1983	147	Conchological Society, programme	
CHATFIELD, J., Engravings of molluscs	31	for 1000th meeting	429
CHATFIELD, J., Extracts from 'The		Conchological Society, views on the	
Field'	252	Agriculture Bill	362
CHATFIELD, J., Literature on		Conchological Society, views on SSSIs	362
Hungarian molluscs recent and		Cones (Conus species), interesting	
fossil	148	specimens in Zoological Museum,	
CHATFIELD, J. & KUIPER, J.G.J.,		Cambridge University	89
Preliminary visit to Budapest in		Conservation and non-marine mollusca	183
connection with International		Conus antiquus Lamarck, 1810,	
Malacological Congress 1983	81	validation of rediscovered	
CHATFIELD, J. & STEVANOVITCH, C.,		original specimen	75
Collecting molluscs around Reims,		Corals in Weymouth Bay	425
France	351	Corrections to Newsletter 79 & 80	17
CHIBNALL, C.J., Dredging from		Cotswolds, mollusca from Neolithic	
Weymouth, June 16th 1985	315	sites in	130
Chitons, shell characters of British	259	Cottage gardens, seashells used as	
Chiroteuthis veranyi, figure	248	ornaments in	64
Chlamys varia, proposed study	368	Courses on molluscs at the Field	
Cingula cingillus, figure	104	Studies Council	158
Cirroteuthis muelleri, figure	269	Craven, A.E., specimens in Arthur	
Clachan Sound, mollusca found in	316	Blok collection	77
Clam bake, description of prepara-		Crenella decussata, figure	164
tion of	252	Crete, some marine molluscs from	61
Clausilia dubia, rediscovery at		Crete, some terrestrial molluscs from	62
Dover Castle	153	CROSS, I., A note on the discovery of	
Cloth of Gold	39	Hygromia cinctella in Dorset	177
Cochlicella acuta, on Pewley Down,		CROWLEY, T.E., Cottage garden	
Surrey	45	seashells	64
Cochlodina laminata, records from		CROWLEY, T.E., Helicostyla	149
Scotland	174	CROWLEY, T.E., Shells at Basildon	
		House	383

Crowley, T.E. & Campbell, J.M., 'An atlas of Oxfordshire freshwater mollusca' (notice of)	231	Eighth International Malacological Congress (notice)	17
Cuthbertson, A., Potential for scallop culture in Tasmania (from 'Australian Fisheries')	409	Eighth International Malacological Congress Budapest, 1983 (report)	147
<u>Cymatium argus</u> , in British waters	27	<u>Eledone cirrosa</u> , figure	269
<u>Cypraea aurantium</u> , (sale prices)	304	ELLIS, C., Molluscan biostratigraphy of Flandrian slope deposits in the South Downs	130
<u>Cypraea broderipii</u> , two specimens for sale	326	ELLIS, A.E., announcement of the death of	96
<u>Cypraea guttata</u> , (sale prices, etc.)	305	ELLIS, A.E., Celebrities in shells	9
<u>Cypraea princeps</u> , (Holford and Denison sales)	304	ELLIS, A.E., Concerning Capt. Thomas Brown	35
Daiber, F.C., 'Animals of the tidal marsh' (review)	31	Ellis, A.E., correction to the obituary of	186
DANCE, S.P., Conchological cosmeticism	189	Ellis, A.E., letter to, from President, and reply	58
DANCE, S.P., God, man and the eye of innocence	327	Ellis, A.E., short biographical note	58
DANCE, S.P., Musical molluscs	250	ELLIS, A.E., Snippets from the late	257
Dandridge, J., brief notes on	234	Elsen, J., Taxonomy of some Cape Verde Conidae (notice)	180
Darlington, A., 'Ecology of walls' (review)	32	<u>Elysia hopei</u> , figure	172
Davies, M., Victorian naturalists in Tenby (availability of offprints of this paper)	97	<u>Elysia hopei</u> , evasive reaction of	1
<u>Desmoteuthis megalops</u> , figure	248	<u>Elysia splendida</u> (syn.)	171
Devensian fossil assemblages	132	<u>Emarginula rosea</u> , intertidal occurrence in Dorset	322
Devil's coach horse beetle, preying on <u>Testacella</u>	56	Engravings of molluscs in new edition of Gilbert White's 'Natural History of Selborne'	31
<u>Diadora apertura</u> , figure	166	Ensis spp., mobility of	334
<u>Discus rotundatus</u> , distribution in France	277	ERSKINE, K.S., Molluscs from a dis-used Norfolk railway embankment	177
<u>Discus rotundatus 'omalisma'</u> , figure	278	ERSKINE, K.S., Molluscs in high places	423
<u>Discus rotundatus omalisma</u> , occurrence in S. France	17	Ethiopian helicids, notes on	420
<u>Discus rotundatus</u> , variants of	273	European Philips contest for young scientists and inventors	48
<u>Divaricella divaricata</u> , figure	164	EVANS, J.G., The interpretation of molluscan assemblages from archaeological deposits	131
DIX, T., Life histories of bivalve mollusc larvae (reprinted from 'Australian Fisheries')	298	Extracts from old and new literature	32
Dogs, slugs as intermediate hosts of a dangerous parasite of	145	Fair Isle, non-marine molluscs of	80
Dorset, dredging in Weymouth Bay and Portland Harbour	207	Field meetings 75, 95, 117,	185
Dowrog Common, Pembrokeshire	345	Field meeting, Flitwick Moor	5
<u>Dreissena</u> , in Manchester reservoir water pipes	305	Field meeting, Folkestone	337
<u>Dreissena polymorpha</u> , fossil in N.W. England	407	Field meeting, Glatting Hanger, W. Sussex	360
Dublin area, Sept. 1981, a molluscan weekend in the	25	Flandrian tufa deposits, bio-stratigraphy of	134
Durmitor National Park, Yugoslavia, mollusca of	384	Flies bred from dead snails in Zambia (notice of paper in Ent. Mon. Mag.)	436
Eastham Country Park, Merseyside, mollusca of	9	Flint Jack (1812-1870s)	213
EDWARDS, W.F., Crime Lake	410	Flitwick Moor, Bedfordshire, field meeting to	154
Edwards, W.H., extracts from his 'A voyage up the R. Amazon'	12	Fogan, E. & Pain, C., Shell identification kits	36, 96
		France, mollusca around Reims (with species lists)	351
		FREEMAN, P.M., Abundance of <u>Theba pisana</u> (Müller) in Alderney	3

Gadow, H., 'Through southern Mexico' (extract)	55	Herm, map of	378
Gafrarium divaricatum, figure	126	Herm, marine mollusca of	377
Galeodea rugosa (L.), live off the Irish Coast	307	Heteroteuthis dispar, figure	241
Galiteuthis armata, figure	248	HIGHFIELD, R., Putting the mussel into glues (reprinted from 'The Observer')	333
GASCOIGNE, T., A tale of name-changing in the order Ascoglossa	171	Hildebrandt, J.M., a collector in East Africa	141
GASCOIGNE, T., Buccal regurgitation (Opisthobranchia: Ascoglossa)	84	Histioteuthis bonelliana, figure	267
GASCOIGNE, T., The evasive reaction of Elysia hopei (Opisthobranchia: Ascoglossa)	1	HOLME, N.A., A marine nature reserve on the Lizard	218
Gibraltar, notes on Mollusca	393	HOLYOAK, D.T., Are there modern arctic analogues for the mollusca of the Devensian	132
Glamorgan Canal Nature Reserve, land and freshwater mollusca of	121	HOLYOAK, D.T., Report on symposium on Quaternary non-marine mollusca	130
Gloucestershire, outing to	403	April 1983	17
Glue, for use underwater	333	Hong Kong nudibranchs - a correction	19
God, man and the eye of innocence	327	House repairs and alterations	174
Goldney House grotto, damaged by vandals	222	HUMPHREYS, J., A visit to the Bude Canal and adjacent Bude Marshes	30
Goldney grotto, restoration of	306	HUMPHREYS, J., Molluscs in the news	87
Gonatus fabricii, figure	265	HUGHES, M.R., Occurrence of Limax tenellus Müller near Kidmore End, S. Oxfordshire	121
GORDON, D., Applications of biological statistics to fossil mollusca data from Asham Quarry	131	HUGHES, M.R., The land and freshwater mollusca of the Glamorgan Canal Nature Reserve	56
Goulding, M., 'The fishes and the forest - explorations in Amazonian natural history' (notice)	34	HUMPHREYS, J., Ocypus olens preying on Testacella maugei	134
Gregory, J.W., collector in East Africa	112	Hutson, S., 'Slugs' (review)	177
Grimpoteuthis sp., figure	269	Hygromia cinctella, in Dorset	383
Gunther, A.E., 'A century of zoology at the British Museum through the lives of two keepers 1815-1914' (review)	11	Iliffe, collection of Lady Illex illecebrosus, figure	245
HAMMOND, N., How do I know what to ask for unless I know what to ask for?	176	Index to mollusca described between 1850 and 1870	10
Hancockia uncinata, occurrence in S. Devon	79	Indian chank	59, 73
HARRIS, L., Taphonomy of mollusca in an alpine river	132	International Commission on Zoological Nomenclature Cases:	
Hawaiian Shell News, notice of	180	872, 368; 1049, 157; 1212, 391; 1987, 2151 & 2152, 157; 2237, 233; 2325, 74; 2331, 285; 2332 (Mactra sachalinensis), 139; 2340, 285; 2408, 391; 2420 & 2432, 157; 2460 & 2512, 412; 2476 & 2477, 233; 2479, 368; 2507, 391; 2571, 438; conservation of Mactra sachalinensis, 347;	
Hedgehog, eating crushed but not whole Helix aspersa (presumed)	37	Opinions: 1233, 74; 1251, 1253 & 1254, 140; 1275, 186; 1281, 256; 1292 & 1296, 285; 1306 (Ledella bushae), 325; 1315 (Eolis alderi), 325; 1331 (Sphaeridae), 1350 (Conus antiquus), 326; 1370 & 1372, 368; 1375 & 1376, 368; 1410 & 1414, 412.	
Helford River, map of	221	International Malacological Congress, 1983	81
Helicella itala, occurrence at Clwyd, N. Wales	367		
Helicostyla	149		
Helicodonta obvoluta, abundance in Glatting Hanger	360		
Helix aspersa (presumed), eaten crushed but not whole by hedgehog	37		
Helix omalisma Bgt., status of	272		
Helix pomatia, do birds eat it?	152		
Helix pomatia, food of birds	212		
Heppell, D. & Smith, S.M., 'Recent Cephalopoda in the collections of the Royal Scottish Museum' notice of	179		

Ireland, expedition to in April 1983	44	LIGHT, J., Report on the British	
Ireland, report of field trip to	192	Marine Workshop	336
Isle of Skye, report of field meeting	75	LINGWOOD, P., Notes on historical	
IUCN Invertebrate Red Data Book	99	Conchology	213, 234, 303
Janssen, A.W., 'Mollusken uit het		<u>Limax maculatus</u> , 19th century record	361
Mioceen van Winterswijk-Miste'		<u>Limax tenellus</u> , occurrence in	
(review)		Oxfordshire	87
Janus, H., 'The illustrated guide	338	<u>Limicolaria</u> , Diptera bred from	
to molluscs' (review)		dead specimens of	436
JACQUES, M., Testacella's lament	71	<u>Littorina littorea</u> , figure	168
(poem)		Lizard, The (Cornwall), possibility	
JESSE, G., Water reflections	78	of marine nature reserve	218
Juvenile shells, difficulties of	225	<u>Loligo forbesi</u> , figure	243
identification of		<u>Loligo vulgaris</u> , figure	243
Juvenile shells, figures of	161	LLEWELLYN-JONES, J.E., An extended	
several species (list)		book review - edible molluscs	49
KEEN, D., Stoke Goldington (Bucking-	170	LLEWELLYN-JONES, J.E., Uses of	
hamshire) - an Intra-Wolstonian		<u>Strombus luhuanus</u>	357
interglacial site		London, molluscam fauna from an	
Kenya, some non-marine records		archaeological site in the City	65
KERNEY, M.P., Correction of	133	LONG, D., An outing to Gloucester-	
Northumberland record of	331	shire, 26 April 1986	403
<u>Phenacolimax major</u>		<u>Loripes lacteus</u> , predatory	
KERNEY, M.P., Nineteenth century	389	gastropod borings on	295
record of <u>Limax maculatus</u>		<u>Lymnaea stagnalis</u> eating small fish	324
KERNEY, M.P., Non-marine atlas:	361	Macdonald, R., short obituary notice	305
important notice		MacGillivray, W., unpublished	
KERNEY, M.P., Note on <u>Cochlodina</u> in	99	comments by	390
Scotland		MCMILLAN, N.F., A pack-slug	286
KERNEY, M.P., The ammonite capital:	174	MCMILLAN, N.F., An ethnoconchological	
a Victorian comment		note	323
Kirk, J. Sir, collector in East	87	MCMILLAN, N.F., Do birds eat <u>Helix</u>	
Africa		<u>pomatia</u>	152
Kuiper, J.G.J., notice of honorary	215	MCMILLAN, N.F., John O'Neill Millot	406
degree bestowed on		MCMILLAN, N.F., <u>Monacha cantiana</u> in	
KUIPER, J.G.J., see Chatfield, J.	187	N.W. England and Wales	214
	81	MCMILLAN, N.F., Non-marine mollusca	
		new to Orkney	111
Lake Tanganyika Mollusca	308	MCMILLAN, N.F., 'Old Price' (John	
Lakshmi's basket (Indian mythology)	292	Price 1803-1887)	210
Land snails of north-east Italy, an		MCMILLAN, N.F., <u>Pisidium conventus</u>	
exhibit winning a young scientist		fossil in Ireland	346
award	48	MCMILLAN, N.F., <u>Pisidium vincentianum</u>	
Lauria, figures of East African		and the White Bog, Co. Down	346
species	399, 401	MCMILLAN, N.F., <u>Pomatias elegans</u> in	
Lee, J.K., 'The Nautilus and the		Cambridgeshire	153
gang of three' (review)	135	MCMILLAN, N.F., <u>Pomatias elegans</u> in	
<u>Leiostyla anglica</u> , old record		v.c. 69, Westmorland	390
from Kent	154	MCMILLAN, N.F., <u>Potamopyrgus jenkinsi</u>	
Lejeania spp.	420	(Smith) living in a coal-mine	37
<u>Lepidopleurus asellus</u> , intertidal		MCMILLAN, N.F., Shetland non-marine	
occurrence in Dorset	322	Mollusca	408
Le Roy, A., collector in East Africa	369	MCMILLAN, N.F., The Mollusca of a	
LIGHT, J., A South African species		country park (Eastham Country Park,	
living in British waters	27	Merseyside)	9
LIGHT, J., Dredging in Weymouth Bay		MCMILLAN, N.F., The shell collection	
and Portland Harbour, Dorset	207	of Gary Whitfield	55
LIGHT, J., Maerl - a coral that		MCMILLAN, N.F., The slugs and snails	
isn't!	424	of Fair Isle	80

MCMILLAN, N.F. & MILLOT, J.O'N., <u>Dreissena polymorpha</u> (Pallas) Fossil in N.W. England	407	NORRIS, A., Mollusca of Durmitor National Park, Yugoslavia	384
MCMILLAN, N.F. & WALLACE, I.D., <u>Theodoxus fluviatilis</u> in Anglesea	335	Northamptonshire, report of land and freshwater Mollusca (review)	319
<u>Maetra sachalinensis</u> , proposed for conservation	139	<u>Notirus iris</u> , figure	164
Maerl	424	<u>Nucella lapillus</u> , figure	104
<u>Margaritaria margaritifer</u> var <u>durrovensis</u> from Durrow	45	Nudibranchs, study of by John Price	210
<u>Margarites helycinus</u> , figure	106	NUNN, J., Dredging at Weymouth: species of mollusc collected on 21st June 1986	426
Marine recording, changes in area representatives	236	NUNN, J., Dredging in Weymouth Bay and Portland Harbour, Dorset (2)	310
May, non-marine Mollusca of The <u>Mastigoteuthis schmidtii</u> , figure	197	O'CONNOR, T., <u>Succinea oblonga</u> from 10th-century York	342
MENEZ, A., Notes on the Gibraltar Mollusca -1	248	<u>Octopoteuthis sicula</u> (figure)	265
Mice, caught in oyster shells	393	<u>Octopus vulgaris</u> , figure	
MIENIS, H.K., A.E. Craven and the Arthur Blok collection	30	<u>Ocypus olens</u> (beetle) preying on <u>Testacella</u>	56
MIENIS, H.K., An overlooked record of <u>Monacha obstructa</u> from S. Arabia	77	<u>Odostomia plicata</u> , figure	169
MIENIS, H.K., Further notes on molluscs in the diet of the song thrush	70	Of Sea and Shore 13 (1), notice of	180
Millot, J.O'N., obituary		Oman, molluscs in	129
Molluscs in high places		<u>Ommastrephes bartrami</u> , figure	246
Molluscs, production of sounds by <u>Monacha cantiana</u> , in N.W. England and Wales		<u>Ommastrephes pteropus</u> , figure	246
<u>Monacha obstructa</u> , occurrence in Saudi Arabia	321	<u>Onychoteuthis banksi</u> , figure	267
MORTON, N., Predatory gastropod borings on the bivalve <u>Loripes</u> <u>lacteus</u> at Molunat, Yugoslavia	406	<u>Opisthobranch</u> 16 (4) (1984) (notice of)	231
MORTON, N., Shell content of Recent shallow marine sand at Molunat, Yugoslavia	423	<u>Opisthoteuthis</u> sp., figure	269
MOSS, M.O., <u>Cochlicella acuta</u> on Pewley Down, Surrey	250	O'RIORDAN, C.E., Some observations on the occurrence of <u>Galeodia</u> <u>rugosa</u> (L.) off the Irish coast	307
MUUS, B.J., Cephalopod keys	214	Orkney Islands, Mollusca of	100, 111
Myers, H.M. & P.V.N., 'Life and nature under the tropics' (extract)	70	Orton, J., 'The Andes and the Amazon' (1870) (extract)	33
National Geographic Magazine, extracts on clams	295	Osborn, G., Pirie, J. & Wallis, M., 'A report on the land and fresh- water Mollusca of Northamptonshire'	319
Nature Conservancy Council booklets, notice of	202	(review)	
Nature Conservancy Council, 11th Report (review)	45	<u>Ovula costellata</u> , former use by natives in New Caledonia	323
Nature Conservancy Council, 12th Report (notice)	434	Owen, D.F., 'Animal ecology in Tropical Africa' (extracts from)	234
<u>Negulus kenianus</u> , figure	399	Oyster, dimensions of large one	253
NEGUS, P.E., 'The Newsletter then and now'	413	Oyster recipes	223
Newsletter then and now - 100 issues	413	Oysters, rodents caught in shells of	30
Non-marine atlas	99	PAIN, C., Field meeting to the Isle of Skye	75, 76
NORRIS, A., Cockles at a full moon: some 17th and 18th century molluscan recipes	223	PAIN, C., Hong Kong nudibranchs - correction	17
		Palaeontologists, world directory of, plans for 5th edition	346
		PALMER, C.P., Catalogue of genera in the class <u>Scaphopoda</u>	395
		PALMER, P., Corals in Weymouth Bay, Dorset	425
		PALMER, C.P., Guide to the shell characters of British chitons	259
		PALMER, P., On referring to Scaphopods	119

PALMER, P., Pax Carthaginis - a very old gamesmanship	176	<u>Pomatias elegans</u> in Cambridgeshire	153
<u>Paphies (Mesoderma) ventricosa</u> , the great decline of		<u>Pomatias elegans</u> in Ireland	44
<u>Pectinidae</u> , morphology and function of	116	<u>Pomatias elegans</u> in Westmorland	390
<u>Perforatella</u> , mention of	287	Porcupine Newsletter, notices of	179, 180, 231, 257, 320, 339, 366, 432, 433
<u>Perforatella (Monachoides) rubiginosa</u> (Schmidt), occurrence in Britain	406	Poore, A.S., collection in Greenwich Museum	343
<u>Perforatella rubiginosa</u> , occurrence in Kent	46	Postglacial history of British non-marines	133
PEURSEN, A.D.P. van, The Mollusca of the Orkney Islands	153	<u>Potamopyrgus jenkinsi</u> , living in a coal-mine	37
<u>Phaseolus caracalla</u> , the snail flower (note: the correct name for this is <u>Vigna caracalla</u> (L.) Verdc.)	100	Powell, A.W.P., 'New Zealand Mollusca' 1979 (notice)	32
Pheasants, eating <u>Cepaea nemoralis</u>		PREECE, R.C., an old record of <u>Leiostyla anglica</u> from Kent	154
<u>Phenacolimax major</u> , deletion of Northumberland record	347	PREECE, R.C., The Postglacial history of non-marine Mollusca in the British Isles	133
<u>Philbertia asperrima?</u> , figure	252	Price, J., biographical notes on	210
<u>Philbertia linearia</u> , figure	389	Publications received	116, 320
<u>Philine catena</u> , figure	168	Pulteney's Dorset Catalogues 1799, added to Official List	75
PHILP, E.G., <u>Perforatella rubiginosa</u> and <u>Clausilia</u> in Kent	105	Pupillids, some records from the Seychelles and Dependencies	331
PHORSON, J.E., House repairs and alterations	168	<u>Pupisoma</u> , figures of East African species	402
PHORSON, J.E., The trouble with those juvenile delinquents	153	<u>Pupisoma orcula</u> , occurrence in Nigeria	437
PINN, F., Alpana and the Sacred Conch	161	Pye-Smith, C. & Rose, C., 'Crisis in conservation' (notice)	360
PINN, F., 'And blew his conch--' (<u>Turbinella pyrum</u> [<u>Xancus pyrum</u>] sacred chank of India)	414	Quahog	29
PINN, F., Lakshmi's basket	59	Quaternary non-marine Mollusca, symposium on	130
<u>Pinna fragilis</u>	292		
<u>Pinna pectinata</u> (syn.)	39, 40	Railway embankment, Mollusca of disused one in Norfolk	177
<u>Pinna rudis</u> (syn.)	41, 42	RANDS, S., Irish expedition April 1982, personal narrative	64
<u>Pisidium conventus</u> , occurrence fossil in Co. Meath	41, 42	Rat, as limpet predator	36
<u>Pisidium vincentianum</u> , in White Bog marl deposits	346	Rat, caught in oyster shell	30
PITCHFORD, G.W., marine mollusca of Herm	346	Recipes, for cockles and oysters	223
Pitt, P., 'Surgeon in Nepal' extract from	377	Red Data Book	99
<u>Placostylus senilis</u>	366	Red-mouth, artifacts made from the	357
Plea to authors, publishers and reviewers	180	REESE, D.S., Bibliography on shells from archaeological sites in Cyprus	128
Plumstead Museum, notes on various non-marine species in	22	REESE, D.S., Bibliography on shells from archaeological sites in Greece	126
POCOCK, B., Report on the field meeting held in the Weymouth Area 21/22 June 1986	323	RÉKASI, J. & RICHNOVSZKY, A., Records of birds feeding on <u>Helix pomatia</u>	212
POCOCK, W.H., Collection of British marine bivalves	404	<u>Retusa truncatula</u> , figure	106
Poirieria, notices of various parts	98	<u>Revoilia</u> , types at Paris	346
116, 179, 180, 320, 339, 433		ROBERTS, E., Hedgehogs and snails	37
<u>Pomatias elegans</u> , from an archaeological site in the City of London	65	Rolan, E., 'Molluscos de la Ria de Vigo, Gastropodos' (review)	135
		Roseland marine nature conservation area	42
		<u>Rossia macrosoma</u> , figure	241
		Roth, A. Capt., 'Molluscan melange' (review)	49
		ROWE, M.W., Shells from the sky	230

Ruhoff, F.A., 'Index to the species of Mollusca introduced from 1850 to 1870' (review)	10	Shells, exploitation of for tourists, etc.	225
Sacred chank	59, 73	SHERIDAN, J.R., Report of stranding of gigantic squid in 1924	235
Sacred conch	414	Shetland, non-marine Mollusca of	408
SÁNDOR, E., Morphology and function in the molluscan family Pectinidae	287	Showers of shells	230
SAUNDERS, G.D., <u>Ensis</u> mobility observed	334	Silkworm of the sea	39
SAUNDERS, G.D., Notes on a field meeting held in the Weymouth area, 5th-8th February 1985	312	Skeneopsis planorbis, figure	106
Scallops, cultivation in France (from 'Australian Fisheries')	411	Slapton Ley Field Centre (notice)	17
Scallops, potential for culture in Tasmania	408	Slug, caught in mousetrap	252
Scaphopoda, catalogue of genera	395	Slug, on 15th-century misericord	286
Scaphopods, general notes on	119	Slugs, as intermediate hosts of a dog parasite	146
Schomburgk, R., 'Travels in British Guiana 1840-1844' (extracts)	91	SMITH, B.M., 'Ebb tide' (poem)	348
SEAWARD, D.R., <u>Emarginula rosea</u> and <u>Lepidopleurus asellus</u> living intertidally in Dorset with a note on <u>Truncatella subcylindrica</u>	322	SMITH, B.M., extracts from books etc.	12, 13, 32, 53 91, 137, 367
SEAWARD, D.R., First Conchological Society Weymouth Dredging Meeting, 24/25 March 1973	427	SMITH, S. & NUNN, J., Mollusca found in Clachnan Sound	316
SEAWARD, D.R., <u>Hancockia uncinata</u> from South Devon	79	Smythe, K., 'Sea shells of the Arabian Gulf' (review)	51
SEAWARD, D.R., Rat as limpet predator	36	Smythe, K., 'Seashells of the Sultan Qaboos Nature Reserve at Qum' (Oman) notice of	188
SEAWARD, D.R., Sea area atlas of marine molluscs of Britain and Ireland	97	Societa' Italiana di Malacologia, formation of by union of two former societies	76
SEAWARD, D.R., Shell sand and 'micromolluscs'	17	Song thrush, diet of	321
SEAWARD, D.R., The new gamesmanship	157	South Downs, molluscan biostratigraphy of Flandrian slope deposits	130
Selborne, footpath maps	54	SPALDING, B., Some rare and interesting cones	89
Selborne, report of recording weekend	88	Speke, J.H., collector in East Africa	138
Senegal, proposed book on marine shells of	411	<u>Spirula spirula</u> , figure	239
<u>Sepia elegans</u> , figure	239	Squid fisheries	237
<u>Sepia officinalis</u> , figure	239	Squid, report of giant one stranded in Co. Mayo in 1924	235
<u>Sepia orbignyana</u> , figure	239	Squids, keys and figures	238
<u>Sepietta oweniana</u> , figure	241	STEVANOVITCH, C., see CHATFIELD	
<u>Sepioidea</u> , key to and figures of N. Atlantic species	238	Stoke Goldington (Bucks) possibility of an Intra-Wolstonian interglacial site	133
<u>Sepiolo atlantica</u> , figure	241	Strawberry conch, artifacts made from the	357
<u>Sepiolo aurantiaca</u> , figure	241	<u>Strombus luhuanus</u> , artifacts made from	357
<u>Sepiolo pfefferi</u> , figure	241	Stone, V. & Deeble, M., 'Exploring underwater in a Cornish estuary' (review)	281
Seychelles and Dependencies, some non-marine records	331	<u>Succinea oblonga</u> , presence in 10th-century York	342
Sharabati, D., 'Red Sea shells' (review)	280	SUMNER, A.T., Some marine molluscs from Crete	61
Sharabati, D.P., 'Saudi Arabian seashells' (review)	51	SUMNER, A.T., Some terrestrial molluscs from Crete	62
Shell cure for snake bite	366	Syon Park, list of snails including <u>Perforatella</u> new to Britain	47
Shell identification kits for sale	36	<u>Taonidium pfefferi</u> , figure	248
Shells, artificial 'improvement' of etc.	189	Taphonomy of Mollusca in an alpine river	132

Tatlow, Mrs., maker of Dutch dolls from shells		Van Bruggen, A.C., notice of section on land molluscs in 'The biogeography and ecology of Southern Africa'	187
TAYLOR, M., Rediscovery of <i>Cochlodina laminata</i> on Kinnoull Hill, Perthshire	9		
Teddington Flow Proposal, public enquiry	174	<i>Venus mercenaria</i>	28
<i>Tellina fabula</i> , figure		<i>Venus verrucosa</i> , figure	103
<i>Testacella maugei</i> , prey of <i>Ocypus olens</i>	406	VERDCOURT, B., A 'new' snail to look out for in British greenhouses	437
<i>Testacella scutulum</i> , at Chiswick in 1885	162	VERDCOURT, B., Collectors in East Africa	67, 111, 112, 138, 141, 215, 369
<i>Testacella's</i> lament (poem)	56		
<i>Theba pisana</i> , abundance of at Alderney	252	VERDCOURT, B., <i>Discus rotundatus</i>	
<i>Theodoxus fluviatilis</i> , possible occurrence in Anglesey	78	<i>omalisma</i>	17
Thomson, J., a collector in East Africa	3	VERDCOURT, B., Field meeting at Flitwick Moor, Bedfordshire	154
<i>Thuridilla hopei</i> (syn.)		VERDCOURT, B., Mollusca of Lake Tanganyika	308
<i>Thuridilla splendida</i> (syn.)	335	VERDCOURT, B., Notes on an Ethiopian helcid	420
<i>Todarodes eblanae</i> , figure	67	VERDCOURT, B., Postscript to a note on non-marine Mollusca of Arabia	77
<i>Todarodes sagittatus</i> , figure	173	VERDCOURT, B., <i>Pupisoma orcula</i> (Benson) Valloniidae in Nigeria	437
<i>Toheroa</i> , the great decline of	172	VERDCOURT, B., Report on the field meeting to Flitwick Moor, Bedfordshire (v.c. 30), June 28th 1981	5
<i>Truncatella subcylindrica</i> , intertidal occurrence in Dorset	245	VERDCOURT, B., Some records from Kenya, Seychelles and Dependencies	331
<i>Truncatellina cylindrica</i> , record from Kinnoull Hill	245	VERDCOURT, B., Status of <i>Helix omalisma</i> Bgt. (Pulmonata, Discidae)	272
TUCK, J.U., A.S. Poore collection in the Greenwich Borough Museum, Plumstead	116	VERDCOURT, B., Thames Water Teddington Flow Proposal - public enquiry	406
TUCK, J.U., Notes from the Plumstead Museum	322	VERDCOURT, B., The occurrence of <i>Perforatella</i> (Monachoides) <i>rubiginosa</i> in the British Isles	46
<i>Turbinella pyrum</i>	174	VERDCOURT, B., Types of <i>Revoilia</i>	346
TURK, F.A., 'The subfossil fauna of Cornwall and the Isles of Scilly' (review)	431	VERDCOURT, B., Vertiginidae and Valloniidae from Holm's and Anderson's East African collections	397
TURK, S.M., A Japanese bivalve, <i>Gafrarium divaricatum</i> found on the North Cornish Coast	125	VERDCOURT, B., HEMMING, C.F. & HAYSLIP, C.E., <i>Achatina lactea</i> found alive in Somalia	196
TURK, S.M., Roseland marine nature conservation area	42	Vertiginidae, from East Africa	397
TURK, S.M., Short biographical note of A.E. Ellis	58		
TURK, S.M., Slugs as intermediate hosts of a dangerous parasite of dogs		WALLACE, I.D., <i>Helicella itala</i> from Clwyd, N. Wales	367
TURK, S.M., The silkworm of the sea, spinner of cloth of gold	145	WALLACE, I.D. & B., The white piddock <i>Barnea candida</i> found alive on Merseyside	71
TURK, S.M., The turn of the squid	39		
Turner, M., Fin and tonic (letter to the Guardian 23.8.1982)	237	Wampum	304
Ulster Museum catalogue of Irish non-marines		WELLS, S., International trade in ornamental shells	56
Underwater adhesives		Wells, W.V., 'Explorations in Honduras' (1857) (extracts from)	32
University of Bristol, shell collection at Goldney House, Clifton destroyed	98	Weymouth area, dredging reports from	310
Valloniidae, from East Africa	333	Weymouth area, report on field meeting June 1986 held	404
	187	Weymouth, first Conchological Society dredging meeting 1973	427
	397	Weymouth, list of molluscs dredged in June 1986	426

White, G., 'Natural history of Selborne' (notice of new coloured edition)	31
White piddock, found alive on Merseyside	71
Whitfield, G., shell collection of	55
WILLING, M., British wildlife appeal	349
WILLING, M.J., Conservation and non-marine Mollusca	183
WILLING, M.J., report on <u>Helicodonta</u> field meeting	360
WILLING, M.J., The biostratigraphy of Flandrian tufa deposits in the Cotswold and Mendip Hills	134
Witcombe Wood, Mollusca of	227
Woodward, S.P., annotations to his own copy of his 'Manual'	303
Woodward, S.P., brief notes on	234
Writing on shells	327
<u>Xancus pyrum</u>	59
Yemen Arab Republic, C ¹⁴ dating of a previously mentioned deposit	77
Yugoslavia, shell content of marine sand at Molunat	202
Zeebiologisch Museum, Scheveningen (notice of)	185

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THE EVASIVE REACTION OF ELYSIA HOPEI

(OPISTHOBRANCHIA : ASCOGLOSSA)

Introduction

Elysia hopei is a brightly coloured Mediterranean ascoglossan, found in rocky sublittoral regions at a depth of about 5 metres. Italian scuba divers have shown it is locally common around the coast of Italy.

When Grube (1861) discovered the species he gave it the apt name Elysia splendida. Bergh (1872), after examining its internal anatomy, placed it in a new genus, Thuridilla. About 1950, a search through the literature revealed that a collector named Hope had found the species eight years before Grube. By strict application of the Law of Priority the species name became Thuridilla hopei. This name appears in modern faunistic works such as those by Pruvot-Fol, Riedl, Nordsieck, and in the standard works of Grasse and of Hyman. In 1981 Thompson re-examined the species. He correctly concluded that the reasons given by Bergh for creating the genus Thuridilla were not valid and he restored the species to its former genus Elysia.

I welcome the change, not only because of Thompson's sound judgement, but because I have always thought that the genus-name Thuridilla (after Thurida, the daughter of a hero in a Nordic saga) was inappropriate for a Mediterranean species, and the name is easily mis-spelt.

Description

Elysia hopei has a remarkable evasive action and, as far as I can tell, this is the first account of what happens. When alarmed, the animal assumes an alert attitude, with tentacles held forwards and parapodia folded over the body. The median ventral part of the body posterior to the foot is raised clear of the substrate by about 1mm (Fig. 1A) (see next page). If its head is touched an evasive action takes place within a second. It changes shape by extending the parapodia laterally thus forming a parapodial cloak with a broad leading edge that tapers posteriorly. The change also conceals most of the bright colours. At the same time the neck is flexed ventrally through 180° so that the animal appears headless when viewed from above (Fig. 1B). Then it rapidly moves aside, assisted by undulations of the cloak. Occasionally, the neck is flexed in the reverse direction and the head and tentacles rest on the upper surface of the cloak (Fig. 1C). This position was depicted by Grube (1861), but not commented on. The evasive action takes place so swiftly that it must be successful - but sometimes not entirely so, for two or three Elysia hopei have been observed with the tip of a tentacle missing.

One looks for adaptations that assist the evasive action. The foot is short, about one third the length of the body (Fig. 1D). When it contracts strongly it

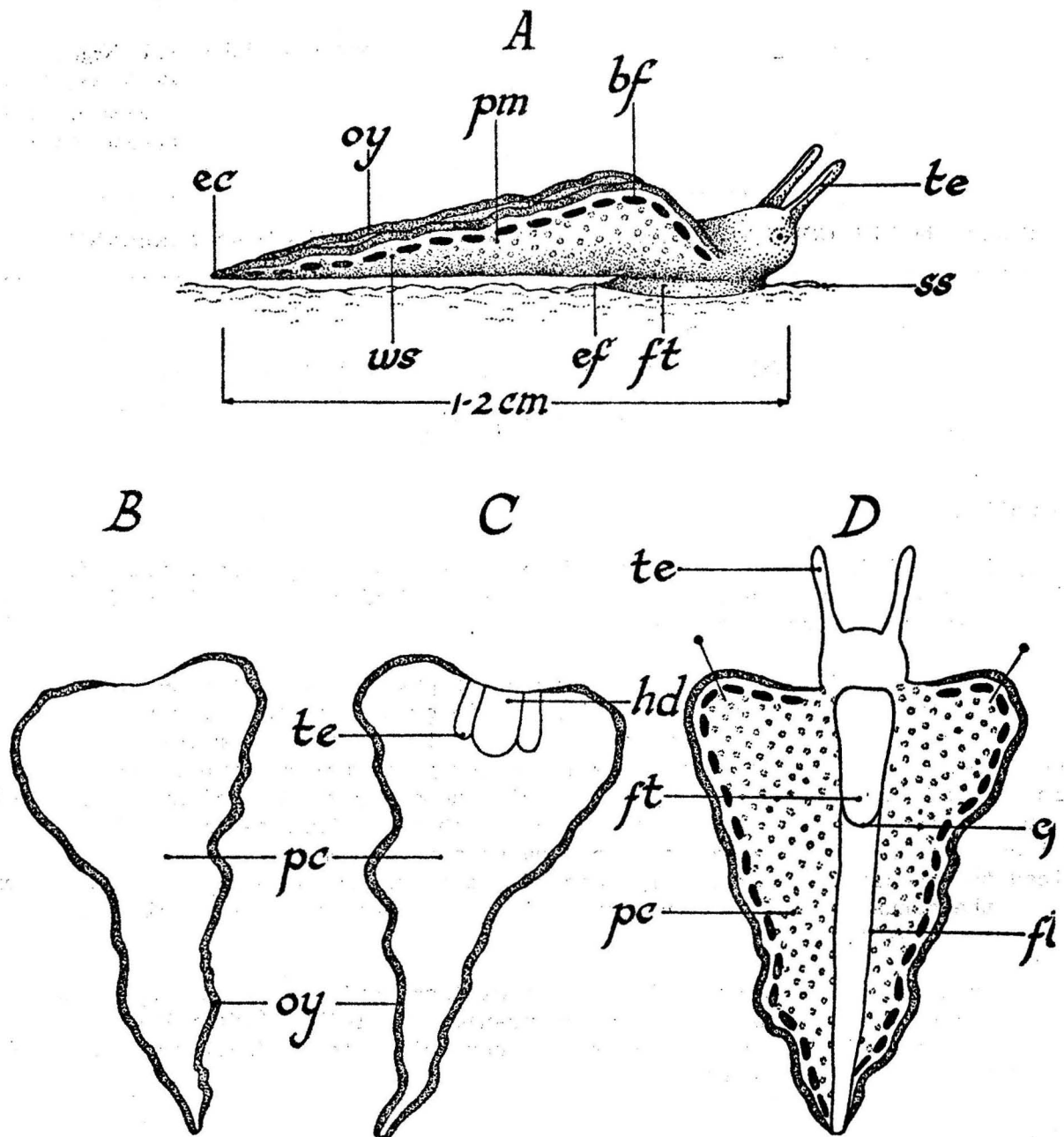


FIGURE 1 SKETCHES OF ELYSIA HOPEI

- A alert attitude
 B headless appearance
 C head reflexed on to parapodial cloak (after Grube, 1861)
 D ventral view

bf, blue fleck; ec, end of cloak; ef, end of foot; fl, fold line of parapodial cloak; ft, foot; hd, head; oy, orange yellow border; pc, parapodial cloak; pm, parapodium; ss, substrate; te, tentacle; ws, white spot.

The ground colour of the body is light purple. A semi-luminescent orange-yellow border runs along the parapodia and also around the foot. Populations vary in shape and intensity of colour of the markings, but the orange yellow border is usually present.

flexes only the overlying part of the body. The parapodial cloak extends beyond the foot by about two-thirds the body length. The shortness of the foot increases mobility, and the raising of the parapodial cloak reduces drag.

It is probable that a few other Elysia species have a similar evasive action. The genus is a large one with many species in tropical and sub-tropical waters. For example, Carlson and Hoff (1978) have identified 26 Elysia species for the Island of Guam.

Acknowledgements

I thank Ursula Salghetti-Drioli of the Centro Interuniversitario di Biologia Marina, Livorno, for providing me with living Elysia hopei; Martin Cook (Alleyn's School, Dulwich) for drawing Fig. 1; and Professor A. Graham, F.R.S. for reading the manuscript.

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Tom Gascoigne

ABUNDANCE OF THEBA PISANA (MULLER) IN ALDERNEY, 1981

Theba (=Euparypha) pisana has been under observation in Alderney since at least 1950 (Freeman, 1980) although the first published record is by Barrett (1978). There are small colonies at either end of Saline beach, and there was formerly one at Crabby beach; specimens have also been found at Longis beach.

Under normal conditions, the Saline beach colonies are restricted to a few plants of seakale (Crambe maritima) and to sea holly (Eryngium maritimum) and samphire (Crithmum maritimum) in limited areas (the numbers cannot be expressed as specimens/m² owing to the nature of the distribution). In the summer of 1981 the more westerly population increased greatly in numbers. The sketch map shows the approximate extent of the normal colony (outlined by a dashed line) and that occupied in August 1981 (outlined by a dotted line). The area inhabited had increased by about ten times and the number of snails had increased enormously; they clung to the vegetation in bunches. In addition to the normal food plants they were found on wild carrot (Daucus carota), sea beet (Beta vulgaris), curled dock (Rumex crispus), hogweed (Heracleum sphondylium) and several species of grass, although marram grass (Ammophila arenaria) bore very few specimens. Snails were conspicuously absent from bramble (Rubus sp.), which was the predominant plant above the beach west of the colony, and were not found on the dense carpet of freshwater plants marking the site of a former pond. Other pulmonates present were: Helix aspersa, Cochlicella acuta, Trichia hispida and Candidula intersecta; Barrett (1978) reported Vitrina pellucida also. None of these species showed any notable increase in population in 1981.

On a cold spring day Barrett (1978) found only a few immature specimens of Theba pisana clustered around the bases of plants at the eastern end of Saline beach. In April 1981 also only a few snails were visible, at both ends of the

beach. In August 1981 the number of snails in the eastern colony was not noticeably larger than normal. The presence of a concrete wall at the back of the beach may prevent the colony spreading. In the summer of 1980, both colonies had seemed to be of normal size. However, the high proportion of adult specimens in the expanded colony in 1981 suggests that the western population in 1980 must in fact have been larger than usual. Cowie (1980) states that Theba pisana takes two years to reach full size although they can breed when only half grown.

The Alderney situation makes an interesting comparison with the newly found colony at Treyarnon Bay in Cornwall, which I was able to visit in September 1981. Humphreys et al. (1981) give figures of up to 600 snails/m², and cite numerous food plants. The numbers and distribution of snails are similar to those in Alderney except that at Treyarnon they are found on more species of plants including water plants further up the valley. Another interesting point is that while the populations of other pulmonate species had not increased at Saline beach, at Treyarnon Bay in 1981 other molluscs were present in sufficiently large numbers to be noticed by local people; Cepaea hortensis and Arion ater were the only ones I could identify from their descriptions.

In Alderney and in Cornwall many Theba pisana were seen on open sand a considerable distance from the nearest plant. Although doubts have been expressed about their ability to return to vegetation in these circumstances (Humphreys et al., 1981), they are known to bury themselves in winter (Humphreys, 1976) and in Alderney in some years Theba pisana was seen burying eggs in the shell gravel about a metre from the nearest plant; they must therefore be able to move freely across loose sand.

Acknowledgments

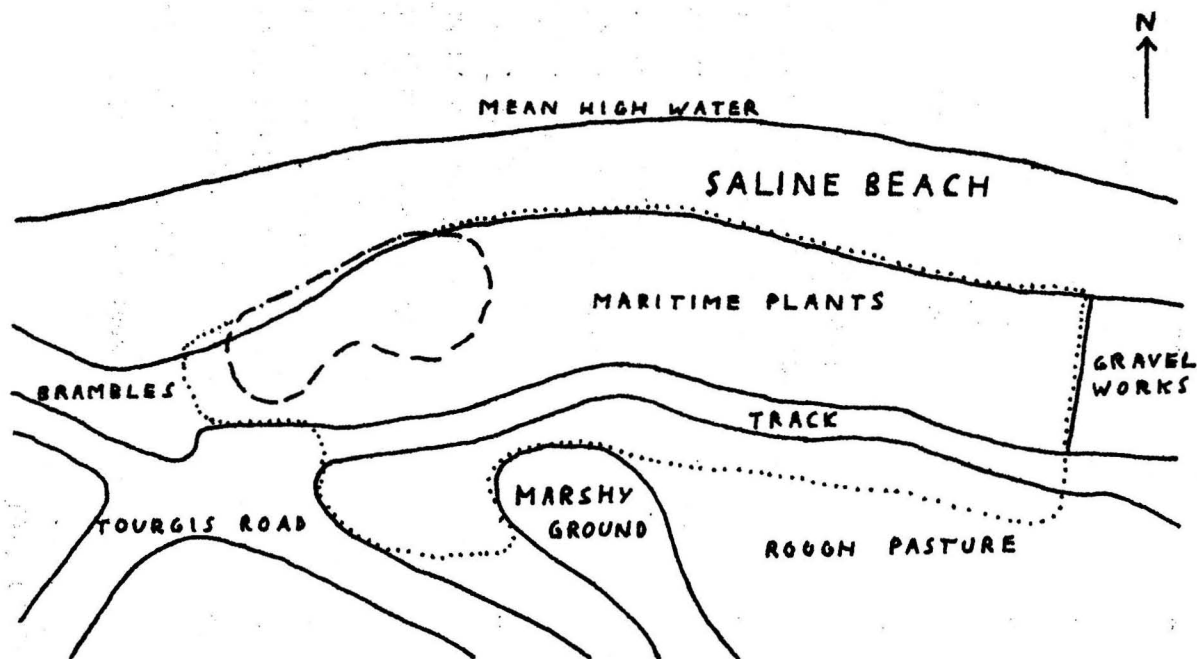
I am grateful to Mr. and Mrs. V. Mendham for help in identifying some of the plants, and to Mrs. Turk for telling me of the existence of the Treyarnon Bay colony and for allowing me to read the manuscript of Humphreys et al. (1981).

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Sketch map (see next page) of western end of Saline beach, Alderney, showing approximate extent of Theba pisana colony in summer of normal years (dashed line) and in August 1981 (dotted line). The length of the extended colony is approximately 250 m.

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Magdalen College, Oxford



REPORT ON THE FIELD MEETING TO FLITWICK MOOR, BEDS. (V.C. 30) 28 JUNE 1981

Dr. B. Verdcourt (leader) and seven others including B. and D. Rands, M. Sheridan and D. Guntrip visited Flitwick Moor on Sunday 28th. June. Flitwick Moor is a wooded ferruginous peat bog at 270 m. situated on the Lower Greensand of mid-Bedfordshire; it is a Nature Reserve run by the Bedfordshire and Huntingdonshire Naturalists' Trust. Extensive peat digging, once a prominent feature of the eastern part, has left scarcely a trace and once common marsh plants such as Potentilla palustris, Menyanthes trifoliata and Viola palustris are now sadly quite extinct. The moor has certainly become much drier since the leader fell into it up to his middle in 1945 or so! (and had to walk all the way back to Luton because the conductor would not allow him to get on a bus in such a condition). The meeting was a disappointment since not a single Vertigo was found, although during the previous field meeting on 15th. August 1965 three species were found in some numbers. It would of course be foolish to assume that they have totally disappeared although a very thorough search was made in the areas in which they were known to have occurred by people well versed in hunting for minute snails. The degree of wetness of the moor must have fluctuated very many times during the past; nevertheless the site where the Vertigos species were found has been irretrievably damaged by the dumping of several feet of spoil which has lifted the land-level too high for flooding. Despite the total lack of Vertigo the list for the day was 41 species, a good total for an acid area and almost as many species as has ever been found there during a single day. The total list for the area stands at 64 but is inflated by records of freshwater species based on dead shells probably brought down the stream from elsewhere. Lists made at various times are appended here using a modified system based on the numbers on the old recording cards. The original census record for Vertigo substriata merely states Ampthill and probably refers to Ampthill Marsh near the railway station, an area where I never found it despite much searching. Vallonia excentrica and Helix aspersa appear to be new records for the area and Euconulus alderi is confirmed; Monacha granulata was quite common.

TOTAL LIST

	B. Verdcourt (combined list) (17.4.1947; 15.4.1962; 17.5.1962)	Conchological Society (15.8.1965)	B. Rands (8.6.1969)	B.S. Nau (Flood debris 16.4.1979)	Conchological Society (28.6.1981)
3 Viviparus contectus		-			
6 Valvata piscinalis		-			
12 Potamopyrgus jenkinsi	-	-	-	-	-
14 Bithynia tentaculata	-	-		-	
17 Carychium minimum	-	-		-	-
18 C. tridentatum	-	-		-	
20 Lymnaea truncatula			-		-
22 L. palustris		-	-		
23 L. stagnalis	-	-			
25 L. pereger	-	-	-	-	-
33 Planorbis planorbis	-	-			
35 Anisus vortex	-	-		-	-
36 A. leucostoma			-		
38 Gyraulus albus	-	-		-	-
41 Bathyomphalus contortus	-	-		-	
42 Segmentina complanata	-				-
48 Succinea putris	-	-			-
49 Oxyloma pfeifferi			-		-
52 Cochlicopa lubrica	} -	-	-	-	-
53 C. lubricella			-		-
55 Columella edentula	-			-	-
C. aspera					-
59 Vertigo antivertigo	-	-		-	-
60 V. substriata	-	-			

TOTAL LIST

B. Verdcourt (combined
list) (17.4.1947;
15.4.1962; 17.5.1962)

Conchological Society
(15.8.1965)

B. Rands
(8.6.1969)

B.S. Nau (Flood
debris 16.4.1979)

Conchological Society
(28.6.1981)

61	<i>V. pygmaea</i>	-	-	-	-	-
67	<i>Pupilla muscorum</i>	-	-	-	-	-
68	<i>Lauria cylindracea</i>	-	-	-	-	-
73	<i>Vallonia costata</i>	-	-	-	-	-
75	<i>V. excentrica</i>	-	-	-	-	-
79	<i>Clausilia bidentata</i>	-	-	-	-	-
93	<i>Cepaea hortensis</i>	-	-	-	-	-
94	<i>C. nemoralis</i>	-	-	-	-	-
95	<i>Helix aspersa</i>	-	-	-	-	-
100	<i>Trichia striolata</i>	-	-	-	-	-
101	<i>T. hispida</i>	-	-	-	-	-
102	<i>T. liberta</i> (det. as <i>concinna</i> by Forcart)	-	-	-	-	-
104	<i>Ashfordia granulata</i>	-	-	-	-	-
106	<i>Monacha cantiana</i>	-	-	-	-	-
114	<i>Punctum pygmaeum</i>	-	-	-	-	-
115	<i>Discus rotundatus</i>	-	-	-	-	-
117	<i>Arion intermedius</i>	-	-	-	-	-
118	<i>Arion fasciatus</i>	-	-	-	-	-
118a	<i>A. silvaticus</i>	-	-	-	-	-
119	<i>A. hortensis</i>	-	-	-	-	-
122	<i>A. ater</i>	-	-	-	-	-
124	<i>Euconulus fulvus</i>	-	-	-	-	-
124a	<i>E. alderi</i>	-	-	-	-	-
125	<i>Vitrea crystallina</i>	-	-	-	-	-
126	<i>V. contracta</i>	-	-	-	-	-

TOTAL LIST

	B. Verdcourt (combined list) (17.4.1947; 15.4.1962; 17.5.1962)	Conchological Society (15.8.1965)	B. Rands (8.6.1969)	B.S. Nau (Flood debris 16.4.1979)	Conchological Society (28.6.1981)
128 <i>Oxychilus cellarius</i>	-	-	-	-	-
129 <i>O. alliarius</i>			-		-
130 <i>O. helveticus</i>		-	-	-	
131 <i>Nesovitrea hammonis</i>	-	-	-	-	-
132 <i>Aegopinella pura</i>		-	-	-	-
133 <i>A. nitidula</i>	-	-	-	-	-
135 <i>Zonitoides nitidus</i>		-			-
136 <i>Vittrina pellucida</i>		-		-	-
149 <i>Deroceras reticulatum</i>	-	-			-
151 <i>D. laeve</i>		-	-		-
159 <i>Sphaerium corneum</i>		-	-		
162 <i>Pisidium amnicum</i>		-			
163 <i>P. casertanum</i>			-	-	
165 <i>P. personatum</i>	-	-			-
167 <i>P. milium</i>				-	-
169 <i>P. subtruncatum</i>			-	-	
174 <i>P. nitidum</i>			-	-	
(66 species)	(33 species)	(42 species)	(34 species)	(32 species)	(42 species)

(perhaps as many as ten of these
are either no longer extant or
were never actually true
inhabitants of the Moor)

It is interesting to see that whereas individual workers produce lists of about 50% of the total, groups of people manage about 64% probably indicative of a particular habitat preference of the individual, apart from a difference in searching skill.

B. Verdcourt

CELEBRITIES IN SHELLS

This is the title of an illustrated article by A. B. Maguire in the Strand Magazine, April 1900. It concerns Dutch dolls, attired in historical costumes made of shells by Mrs. Tatlow, an enthusiastic conchologist. Her interest in this form of art was sparked off by seeing a doll clad in garments completely encrusted in shells, said to be over a hundred years old, in a shop in Guernsey. Having ascertained the method of making these garments, Mrs. Tatlow "determined to go and do likewise, and by the time she returned to England she had planned out the whole scheme for her historic dolls. Then the real preparation began, records of ancient dress had to be looked up, pictures, coins, effigies on old tombs in Westminster Abbey studied, and dolls of a suitable style selected. The dressmaking stock in trade consisted only of a large supply of shells, some Brussels net, and a glue-pot."

The first figure she made was Matilda of Flanders, consort of William the Conqueror, copied from the Bayeux tapestry, the costume being constructed of Helix acuta from Dundrum Bay, Co. Down. Then came King Arthur, in full armour, from the statue in Innsbruck Cathedral. Elizabeth Widville (Woodville), wife of Edward IV, was draped in Rissoas, Cerithiums, Odostomias and Trochus cinerarius, the bodice composed of Nucula nucleus, trimmed with Axinus flexuosus, the head-dress of cowries, and the veil of a great variety of tiny shells from Roundstone, Connemara. Richard Coeur de Lion was attired in shells from Malahide, Co. Dublin; the cross was of Phasianella pulla, the coat of mail of Nucula nucleus, the cloak of Pecten opercularis and Rissoas, and the helmet of Hydrobia ulvae. Edward I was clad in Littorina littorea and L. obtusata, with a belt of Nucula nucleus. Queen Elizabeth's gorgeous apparel was copied from a picture of her attending the thanksgiving at St. Paul's for deliverance from the Spanish armada; the shells, from Alderney, included Scalaria communis, Eulima polita, Marginella laevis, Arca lactea and Dentalium entalis. The future Queen Victoria, aged eight, was dressed entirely in Trochidae from Alderney: tumidus, cinerarius, montacuti, zizyphinus, millegranus, exasperatus, striatus, etc., the dress trimmed with Phasianella and the bonnet made of Arca lactea. Prince Albert was portrayed in the costume of Edward III, as he appeared at the Plantagenet ball at Buckingham Palace in 1842. The collection is "shortly to be placed in a public museum" - where?

A. E. Ellis

THE MOLLUSCA OF A COUNTRY PARK (EASTHAM COUNTRY PARK, MERSEYSIDE)

Country Parks were designed to act as "honey-pots" to draw visitors from more vulnerable areas, and therefore they have to withstand considerable pressure from the visiting public, its cars, children and dogs.

Eastham Country Park covers 76 acres of dry acid woodland, with some open grassland near the river edge where it borders the Cheshire side of the Mersey estuary. It lies on the inhospitable Trias (the Bunter Pebble Beds) and is not attractive to molluscs in consequence of the lack of lime. The woodland is partly native and not dense; during the last hundred years there has been much "amenity" planting and there are many alien species. In the last century, also, it was a popular "resort" with a bear-pit, lions, monkeys, fountains and so on, and (it is said) a boating-lake later replaced by a now-derelict and much overgrown bowling green.

The only freshwater habitat is a small recently-dug pond, as yet unpopulated by snails.

Visits over a good many years have resulted in the following list of Mollusca, collected under logs, from leaf-litter, etc..

<u>Discus rotundatus</u> (Müller) Frequent	<u>Arion ater</u> (L.) s.s. Fairly frequent, all black specimens
<u>A. lusitanicus</u> Mabilie det. Miss S.M. Davies. Several specimens on derelict bowling-green, May 1979. Miss Davies says that all are the "St. Cuthbert's form".	<u>A. distinctus</u> Mabilie det. Miss Davies. Collected with <u>A. lusitanicus</u> (q.v.)
<u>Oxychilus cellarius</u> (Müller) Sept. 1981	<u>A. intermedius</u> Normand May 1979
<u>Zonitoides excavatus</u> (Alder) Fairly frequent, with an occasional white-shelled example	<u>A. subfuscus</u> (Drap.) September 1981
<u>Deroceras reticulatum</u> (Müller) Common, a darkly-reticulated form	<u>O. alliarius</u> (Miller) Fairly frequent
<u>Helix aspersa</u> Müller About the garden of the Ranger's house, 1979	<u>Z. nitidus</u> (Müller) Several, May 1979
	<u>Limax maximus</u> L. Obtained several times, some of the specimens spotted
	<u>Cepaea nemoralis</u> (L.) A single yellow example, banding 123(45) taken 9 June 1977 near the boundary with the grass-land of Warren Farm (now playing-fields)

It is of interest to compare the Eastham list with that of Mollusca obtained, likewise on the Bunter beds, on the Lancashire side of the Mersey. This was at Mossley Hill on the outskirts of Liverpool in the 15-acre grounds of a large Victorian house, derelict since World War II (McMillan 1962). Fifteen species were obtained but the list differed quite markedly from that for Eastham; two species of Milax, Deroceras caruanae and Limax flavus s.l. all at Mossley Hill but not at Eastham. But neither species of Zonitoides at Mossley Hill!

One might suggest that Zonitoides excavatus and Z. nitidus are truly native at Eastham, but that the remaining species although some are native are either tolerant of mankind's works or else dependent upon him for shelter (Helix aspersa) or introduction (Arion lusitanicus).

There are two fairly fresh specimens of Truncatellina cylindrica in the Manchester Museums' collections, labelled "minutissima Eastham Wood J.R.H(ardy)" but in view of Hardy's known carelessness about localities (A.W. Stelfox pers. comm.) the record seems very doubtful and emphatically requires confirmation. According to Kerney & Cameron (1979, p.68) the species of Truncatellina all favour dry calcareous grassy places. J.W. Jackson (1919) however, took a single shell of T. cylindrica (sub Columella minutissima) in a sand-dune at Meols on the Cheshire coast. Such sand-dune shells may have been derived from older land-surfaces now covered by the dunes.

References

- Jackson, J.W. (1919) "Shell-Pockets" on Sand-Dunes on the Wirral Coast, Cheshire; and Notes on Ancient Land Surfaces. Lancs. & Ches. Nat. vol. 12; 9-14, 39-44.
- Kerney, M.P. and Cameron, R.A.D. (1979) A Field Guide to the Land Snails of Britain and North-West Europe. Collins, London.
- McMillan, N.F. (1962) Mollusca on Bunter Sandstone in a Liverpool suburb. J. Conch. Lond. vol. 25; 126-127.

Nora F. McMillan
Merseyside County Museums, Liverpool

REVIEW

Index to the species of Mollusca introduced from 1850 to 1870, by F.A. Ruhoff. Washington: Smithsonian Contributions to Zoology No. 294, 1980. 640 pp. Paper covers. No price given.

For anyone who has ever been frustrated by the lack of an index to molluscan species described between 1850 and 1863 this book provides the welcome solution. These dates respectively mark the end of the period covered by C.D. Sherborn's Index Animalium (1922-1933) and the start of the Zoological Record, and is

unfortunately part of a period particularly rich in molluscan descriptions.

The book, which covers the period 1850-1870, is published by the Smithsonian Institution (in the traditional blue paper covers) as part of their Contributions to Zoology series. It closely follows the format of Index Animalium and is similarly divided into three parts. The bibliography (117 pages) lists, by author, all works on recent Mollusca published during the period, including those which do not include descriptions of new taxa. This is therefore a most useful item in itself. The main section (456 pages) lists alphabetically each new species described, together with those trinomials (i.e. sub-species, varieties, etc.) which are obviously not infra-subspecific. This last device is useful to help clarify cases where subspecific names have been raised to specific level by subsequent authors. Each entry, of which there are approximately 35,000, includes the genus, author, and date, plus reference to any other contemporary redescriptions and illustrations. No attempt has been made to revise the nomenclature. The final section (165 pages) lists all the specific names under the appropriate genera.

There are, however, two criticisms which may be levelled at this book, both of points of format which are departures from those established by Sherborn. First, new generic names have been omitted on the grounds that these are amply covered by S.A. Neave's Nomenclator Zoologicus (1939-1965). This omission therefore involves the slight inconvenience of consulting an additional work rather than having all the information in one volume.

Secondly, and more importantly, only the author and date are cited for each entry and not the full (or abbreviated) reference, which is contained in the bibliography, to which constant reference must therefore be made. From a practical point of view, such reference would be greatly facilitated by an easy method of differentiating the bibliography from the rest of the text, e.g. by the use of coloured paper, or inset edges.

However these are minor points which scarcely detract from this very important publication, which is essential to anyone working on molluscan taxonomy. The usefulness of the book will depend on its completeness and accuracy; the thoroughness of the compilation is attested by the very small number of references which have not been viewed in their entirety by the author.

P. F. Lingwood

REVIEW

A Century of Zoology at the British Museum through the lives of two keepers 1815-1914, by A.E. Gunther. Dawsons 1975. 522pp., 33 pages of black and white photographs. Price: £30.00.

The two keepers of the title are John Edward Gray (1800-1875) and Albert Gunther (1830-1914). Gray is primarily known to Conchologists from a number of papers describing new species of shells and from his edition of Turton's Manual of Land & Freshwater Shells and as instigator of his wife Maria Emma's Figures of Molluscos Animals. She is perhaps better known as the person accused of mixing the labels in the Cuming shell collection, a legend which, although now regarded as untrue (Dawson, W.R., 1967, Journal of the Society for the Bibliography of Natural History, 4: 284-86), is interestingly not mentioned in this book. Gray's interests were extremely wide. His massive list of publications includes those on reptiles, mammals, fishes, sponges, crustacea, etc., as well as items on philately (he apparently proposed the penny post before Rowland Hill). He also had a keen interest in education and social reform and contributed to the adoption of the artificial respiration bandage, a replacement for the bellows which had been used up till then. This book, although giving due regard to these extra-curricula interests, is primarily concerned with Gray's career and achievements at the

British Museum. He was responsible for a considerable increase in the size of the collections and for initiating the highly successful series of catalogues which played such an important role in 19th. century natural history.

The other half of the book is concerned with Albert Gunther (1830-1914) who worked as Gray's Assistant and eventually succeeded him as Keeper. Gunther also published a considerable amount, but primarily on ichthyology and continued to augment collections and to write more and improved catalogues. Although Gray and Gunther's backgrounds were entirely different the pattern of their lives is very similar. Both surmounted inherent difficulties, both progressed slowly to keepership where they made a tremendous impression on the collection and both collapsed through overwork.

Each biography is treated entirely separately. It is divided into chapters which follow broadly chronologically certain aspects or periods. This format facilitates reference to particular subjects but makes reading the book from cover to cover a little disorientating by encouraging some duplication. Each chapter is followed by copious biographic and bibliographic notes; a witness to the undoubted scholarship of the work, and each biography is closed by a chapter reviewing the man, his life and his work. The authors style is eminently readable and the slight touches of humour do not seem out of place.

The material was originally envisaged as two quite separate biographies; the study of Gunther by his Son and Gunther and his grandson A. E. Gunther (the present author) and that of Gray by W. R. Dawson. There is no doubt that the book will remain a standard biography of the individual lives of these two men. However, the real importance of the book lies in an overall view of the material. It provides a fascinating personal insight into the working and development of the Natural History Departments in a period of considerable expansion from Montague House to Robert Smirke's new building to its present home at the British Museum (Natural History). The author puts forth considerable evidence that it was these two keepers who did much to raise the collections of the Museum to their present eminence. To anyone interested in these collections or in the development of 19th. century natural history this book is a joy to read and an invaluable source of reference.

P. F. Lingwood

"A VOYAGE UP THE RIVER AMAZON", by William H. Edwards, 1847. Published by John Murray

Chapter 3, p. 15, near Para.

"With our friend Captain Appleton, who is a most zealous conchologist and well acquainted with all the shell haunts in the vicinity, we used often to take this route, and upon the trees in various localities found as many specimens as we cared for. These were principally of three varieties: Bulimus regius, Bulimus glabra, and Auricula clausa."

Chapter 4, p. 24.

"From Vigia, and below towards the coast, crabs and oysters are brought at certain seasons in great abundance. --- The oysters, though of prodigious size, can in no way be compared with their relatives of the north. They are found in large clusters about the roots of the mangroves."

Chapter 6, p. 48.

"We had come to Caripé more particularly for shells, inasmuch as it was the most celebrated locality for them in the vicinity of Para. The bay so faces the channel that the tides create a great surf and collect large numbers of various shells. We were just in time for the spring-tides, when the water rises and falls fifteen feet; now foaming almost to the top of the bank, now leaving exposed a broad flat of sand, beyond which in shallow water is a muddy bottom. This latter was our shelling ground; and whenever the water would permit, all of our party and

the boatmen, were wading neck deep about the bay. Each carried a basket upon his arm, and upon feeling out the shell with his toes, either ducked to pick it up or fished it out with scoop-nets made for the purpose. In a good morning's work we would in this way collect about 150 shells. Those in the deeper water were of three varieties, Hyria corrugata (Sow.), Hyria avicularis (Lam.), and Anodonta esula (D'Orbigny), the last of which was extremely uncommon. Nearer the shore, and in pools left standing in the sand, were the Castalia ambigua (Lam.), always discoverable by the long trails produced by their walking. Of three other small species we found single specimens, all hitherto undescribed by conchologists. Two of these were of the genus Cyrena, and the third an Anodonta. In the crevices of the uncovered rocks were great numbers of the Neritina zebra (Lam.), which variety is often seen in the market of Pará, and is eaten by the negroes. About one hundred yards east of the house was a tide-stream extending into the woods. Here, and in similar tide-streams, were numbers of a red-lipped Ampullaria."

P. 49.

"Bulimus haemastoma was extremely common upon the land. Frequently we found their eggs. They were nearly an inch long, white, and within was generally the fully formed snail, shell and all, awaiting his egress."

Chapter 13, p. 124.

"Stopped in the woods upon the 2nd., and upon the roots of the large trees we collected a number of shells, the Bulimus piperitus (Sow.) entirely new to us. There were also many shells; three varieties common throughout the river region, Ampullaria crassa (Swain), Ampullaria scalaris (D'Orbigny), and Ampullaria zonata (Wagner), and usually found just above high-water mark. They crawl up there adventurously and are left by the retiring flood. Occasionally in these forests, we discovered dead shells of Achatina flaminea."

P. 127.

"The Senhor had been a frequent voyager upon the Madeira, and gave us interesting accounts of his adventures upon that river. What was quite as agreeable however, was a collection of shells which he had picked up along its shores, and of which he begged our acceptance. One of these was a remarkably large one of Ampullaria canaliculata (Lam.) which was used as a family cashaca goblet. The others were Hyria avicularis and Anodonta esula. The valves of the Anodonta had been used as skimmers in the Senhor's kitchen."

Betty M. Smith

"A NATURALIST IN INDIAN SEAS", by A. Alcock. Published by John Murray, 1902

Chapter 19, p. 277-282.

Of the Deep-sea Mollusca of the Indian Ocean.

"Between the depths of 100 and 2000 fathoms a great many species of mollusca have been dredged by the Royal Indian Marine Survey Ship, 'Investigator', and most of them have been described by E. A. Smith in various papers published in the Annals and Magazine of Natural History from the year 1894. They belong to the following groups: Gastropods 68 species, Scaphopoda 6 species, Cephalopoda 10 species, Lamellibranchiata 41 species.

Of the gastropods, the dweller in the remotest depths is Pontiothauma mirabile, a large blind species with a colourless shell, surprisingly like that of the common whelk of northern seas. A unique specimen of this large species, which has neither eyes nor radula, was dredged in the Laccadive Sea at a depth of 1250 fathoms, on a bottom of blue mud, the temperature being 36° F. Its shell was nearly 5½ inches long".

"Twenty-two per cent of Indian deep-sea gastropods belong to the genus Pleurotoma, which is also prolifically represented in the shallow waters of these

warm latitudes. Among them is Pleurotoma symbiotes first found off Cape Comorin at a depth of over a thousand fathoms, which invariably has its shell encrusted with a commensal zoophyte of the genus Epizoanthus. Turbo indicus which lives near the 600 fathom line in the same neighbourhood, is another hospitable species which gives lodging on its living shell to a sponge, and a barnacle (Scalpellum). This turbo is of further interest, because, according to E. A. Smith, it is possibly only a variety of Turbo peloritanius, a deep-water species of the Mediterranean and North Atlantic.

One of the commonest and most characteristic gastropods of the edge of the abyssal slope in the Bay of Bengal, is Rostellaria delicatula, a small and delicate, but very handsome species. It furnishes a good illustration of the fact that deep-water species as a rule have much thinner and lighter shells than their kindred of the shore.

A gastropod which is found in the Andaman Sea at almost every haul between 100 and 300 fathoms, is the Japanese Xenophora pallidula. This creature also has naturally a thin and translucent shell, which, however, it fortifies by building into it a sort of chevaux-de-frise, formed of the dead shells of other species, or bits of shingle, or even, should no other material be at hand, of bits of slag and cinder shot overboard from steamships."

"One of the handsomest of our Indian deep-sea gastropods is Astrarium bathyrapse, whose shell is not only exquisitely sculptured, but is also of a beautiful magenta colour rarely seen in the shells of the deep-sea. Astrarium, like Xenophora, is a type that was originally discovered in Japan.

The key-hole limpet, Puncturella asturiana has been taken off the West Indies in 390 fathoms, in the Bay of Biscay in 600 - 1100 fathoms, and at the southern end of the Bay of Bengal in 609 fathoms.

The Scaphopoda, or tooth shells, hitherto dredged, in deep water in Indian latitudes number six species all belonging to the genus Dentalium, and living on soft muddy bottoms in the neighbourhood of Ceylon. One of them, Dentalium magnificum from 600 - 800 fathoms, has a shell $4\frac{1}{2}$ inches long, while another, Dentalium profundorum from 675 fathoms, reaches a length of nearly $3\frac{1}{2}$ inches.

The bivalves dredged from the deep in Indian latitudes include a considerable number of forms whose shallow water sisters are characteristic of cold and temperate seas, such as Lima, Nucula, Nuculana, Yoldia, and Abra.

Lucina spinifera is found in the Bay of Bengal at a depth of 200 - 350 fathoms, where bottom temperature is 49° - 50° F. Lucina bengalensis from 410 fathoms in the Bay of Bengal is very closely related to, and Solenomya patagonica is actually identical with respective species dredged by the Challenger in Magellan Strait in 245 fathoms. Furthermore Linopsis indica, which is common in the Laccadive Sea at depths of 142 - 1200 fathoms is regarded by E. A. Smith as only a modification of, and Poromya tornata from 1997 fathoms in the Bay of Bengal, as identical with respective species occurring in the Mid Atlantic at 1850 fathoms. Lima indica from 430 fathoms off the coast of Travancore harbours a little crab, Pinnotheres abyssicola, in its mantle-chamber.

The characteristic deep-sea genus of scallops, Amussium, is represented in Indian latitudes by five species one of which, Amussium solitarium was dredged at the profound depth of 1803 fathoms. Amussium alcocki is a common species of the Laccadive Sea between 696 and 740 fathoms, and has been taken off the west coast of the Andamans in 561 fathoms.

One of the most beautiful and most characteristic bivalves of the Bay of Bengal on the verge of the abyssal slope is Nucula fultoni, the lustre of whose shell, when the outer protective epidermis is removed, is like that of the choicest pearls. Yoldia angulata, an elegant little shell covered with a shiny olive-green epidermis, shares the same habitat.

Five species of Cuspidaria, whose shell is produced to form a long tube, for the protection of the siphons, have been discovered by the 'Investigator'. Cuspidaria macrorhynchus from off the Laccadives in 636 fathoms, lives at the greatest depth."

Betty M. Smith

CONCHOLOGICAL SOCIETY OF GREAT BRITAIN & IRELAND

956th. (Ordinary) Meeting held on 16th. January 1982 at B.M.(N.H.)

In the Chair: Mr. T. Pain, with 34 members and friends present.

Nominations for Membership: 6 Full Members

Albuquerque de Matos, Dr. R.M., Centro de Genetica e Biologia Molecular, Ave. Prof. Gama Pinto 2, 1699 Lisbon Codex, Portugal.

Peursen, A.D.P. van, [REDACTED], 2317 AD Leiden, The Netherlands.

Quintana, M.G., Museo Argentino de Ciencias Naturales e Instituto Nacional de Investigacion de las Ciencias Naturales, Avda. Angel, Gallardo 470, 1405 Buenos Aires, Argentina.

Seddon, Miss Mary B., Dept. Geography, Reading University, 2 Earley Gate, Reading, RG6 2AU

Suer, F., [REDACTED], Rue, France.

Yiu, P., [REDACTED], Finchley, London, N.3.

Lecture: 'Photography of freshwater Molluscs' by Mr. Derek Rands.

Announcements and Correspondence: Mrs. Rands has been elected to Honorary Membership of the Society.

An additional Field Meeting will be held on Sunday 30th. May 1982, led by Mr. Derek Rands, with the aim of demonstrating techniques for photographing Mollusca. Meet at Luton B.R. Station, 11.00 a.m.

Letters have been received from two collectors wishing to exchange shells of marine Mollusca (European only; worldwide bivalves).

Letter received offering minibus/camper van for hire.

Exhibits requested for joint Meeting with Malacological Society on 20th. February 1982

Several books were auctioned for the Society's funds.

Meeting closed at 5.15 p.m.

Exhibits:

J. Llewellyn Jones - Species from the Sea of Galilee.

- Lacuna crassior.

T. Pain - Endemic 'thalassoid' thiarids of Lake Tanganyika (Thiaridae).

R. C. Preece - Margaritifera auricularia (Sprengler) from River Thames.

D. Rands - Equipment for photographing freshwater Mollusca.

E. Sandor - Family Mitridae, subfamily Imbricariinae (genera Cancilla, Subcancilla, Neocancilla and Ziba).

B. Verdcourt - Two of several exhibits depicting Mollusca from the Great Japan Exhibition.

- Sea-Snailly verse by P. Halliday.

- Identification kit for East African freshwater pulmonates likely to be concerned with transmission of bilharzia and various fluke diseases.

- Four peculiar freshwater gastropods from Lake Tanganyika.

- Faunus ater (L.), one of the most attractive Indonesian freshwater species.

957th. (Ordinary) Meeting held on 20th. February 1982 at B.M.(N.H.), jointly with
Malacological Society of London

In the Chair: Mr. J.F.M. de Bartolome and Dr. T.E. Thompson, with 46 members and friends present.

Death of Member: The death of Miss K.M. Cobley was announced.

Nominations for Membership: 7 Full Members

Hanley, Dr. J.H., Branch of Palaeontology & Stratigraphy, U.S. Geological Survey,
Mail Stop 919, Box 25046, Denver Federal Center, Denver, Colorado 80225, U.S.A.
Lamont, Mrs. J.M., [REDACTED], Salcombe, Devon.
Palfrey, Mrs. G.A.T., A.V.C.M., [REDACTED], Dorking, Surrey.
Shand, P., [REDACTED], Wick, Caithness, Scotland, [REDACTED]
Smith, A.P., [REDACTED], Rabaul, East New Britain, Papua New Guinea.
Tween, T.C., B.A.(Hons., Cantab), [REDACTED], Luton, Bedfordshire, [REDACTED]
Wilson, Miss A.L., [REDACTED], Hall Green, Birmingham, [REDACTED]

2 Family Members

Peterson, Mrs. J.M., [REDACTED], Brighton, Sussex.
Walton, J., [REDACTED], [REDACTED], Nr. Atherstone, Warwickshire.

1 Junior Member

Asbury, Andrew Howard, [REDACTED], [REDACTED], Tamworth, Staffs., [REDACTED]

Elections to Membership: 6 Full Members

Albuquerque de Matos, Dr. R.M., Centro de Genetica e Biologia Molecular, Ave. Prof.
Gama Pinto 2, 1699 Lisbon Codex, Portugal.
Peursen, A.D.P. van, [REDACTED], 2317 AD Leiden, The Netherlands.
Quintana, M.G., Museo Argentino de Ciencias Naturales e Instituto Nacional de
Investigacion de las Ciencias Naturales, Avda. Angel, Gallardo 470, 1405 Buenos
Aires, Argentina.
Seddon, Miss Mary B., Dept. of Geography, University of Reading, 2 Earley Gate,
Whiteknights Road, Reading, RG6 2AU
Suer, F., Saint-Jean 80120, Rue, France.
Yiu, P., [REDACTED], Finchley Central, London, N.3.

Announcements: The Hon. Treasurer will be happy to receive subscriptions from
Conchological Society members who have not already paid.

Members of the Malacological Society were welcomed to the Meeting.
Numerous exhibits were presented by members of both societies.

Meeting closed at 4.50 p.m.

Exhibits: A. Bebbington - Shells of Aplysiomorpha.

J. Chatfield - British marine molluscs.

T. Crowley - The Illustrated Natural History of Selborne.

J.D.R. Fryer - Fossilized marine bivalves from the Upper Pliocene of Valleandona,
northern Italy.

D.T. Holyoak & M.B. Seddon - Freshwater Mollusca of Banks Island, Arctic Canada.

W. Karo - Shells from Western Australia.

P.B. Mordan - Arabian land snails.

N. Morris - Evolution in the Pectinacea.

P.E. Negus - A selection of Jurassic molluscs.

T. Pain - Breathing devices in tropical land operculates.

F. Pinn - The living mollusc.

E. & R. Platts - Photographs of nudibranchs.

R.D. Purchon - Orbicularia orbiculata, a bivalve which inhales air in order to
achieve buoyancy and lift out of the mud on a rising tide.

E.B. Rands - Boettgerilla pallens.

E. Sandor - Family Mitridae, Genus Mitra s.s.

J. Taylor - Predatory gastropods.

B. Verdcourt - Colour in land snails.

Wen-Lung Wu - Receptor structures on the mantle of Anodonta cygnea (L.)

GENERAL NOTES

Shell sand and "Micro-molluscs"

In a note in Newsletter No. 78: 241 (1980), I floated a suggestion of Norman Hammond's (marine area representative for Solway), that there may be members who are unable to do much marine field work but who would welcome the opportunity to sort out gravel and dredgings, etc.. I don't know how much response there has been, but I have recently heard from another member who is both keen and well qualified to do so. He is Dr. J.J. van Aartsen, [REDACTED], [REDACTED] Dieren, Holland, interested in the smaller molluscs, particularly the difficult groups of Rissoidae, Pyramidellidae, Erycinidae and Galeommatidae, and wishing to see more British material. He has recently published a "Revision of the East Atlantic and Mediterranean Caecidae" (Basteria (1977) 41:7-19). Any members interested should contact Dr. van Aartsen direct.

D. R. Seaward (Marine Recorder)

Hong Kong Nudibranchs - Correction

This publication is NOT available from the Hong Kong Government Office Library as stated. It IS available from: Information Officer (Sales), Urban Council Publications Centre, Club Lusitano Building, 1st. Floor, Ice House Street, Hong Kong. The book may be obtained by prepayment of 17 Hong Kong Dollars plus postage, by Hong Kong Dollar cheque or bank draft, made payable to the Hong Kong Urban Council.

Celia Pain

Discus rotundatus omalisma (Bgt.)

In various localities in S. France a very flattened race of Discus rotundatus occurs. I first noticed this near Cahors in 1968 and, in 1980, returned to the same area to collect more material. This was compared with authentic specimens of Helix omalisma kindly loaned to me from the Muséum d'Histoire Naturelle, Geneva. A paper on this race is in preparation but information on its distribution is required. I hope to examine the collections in the Muséum National d'Histoire Naturelle, Paris in early 1982 but many collectors in Great Britain may have records. Curiously no specimens could be found in the extensive collections of the British Museum (Natural History). I would be grateful for any records from Europe which members may have. The epithet omalisma from 'ὁμαλός' even level and thus 'ὁμαλίζω' to make equal, must be treated as a noun in apposition. The omission of the initial 'h' would be natural for a Frenchman!

B. Verdcourt

Corrections

Newsletter 79, p.344. The third paragraph of the article on J.S. Gibbons has been misplaced and is actually an addendum to the article on A.E. Craven which appeared in the next newsletter.

Newsletter 80, p.359, paragraph 2. The abrupt reference to Mr. D.B. Janson was unintentional.

p.363 for 'hegociante' read 'negociante'

p.365 mid for 'malheureuse' read 'malheureux'

p.366 for 'Mikedotrochus' read 'Mikadotrochus'

B. Verdcourt

The Eighth International Malacological Congress, sponsored by the Unitas Malacologica, will be held in Budapest, Hungary, in 1983, in the period August 29-September 3. Further information can be obtained by writing László Pintér, Natural History Museum, Baross u. 13, H-1088 Budapest, Hungary.

Slapton Ley Field Centre, Slapton, Kingsbridge, Devon, TQ7 2QP Telephone: Kingsbridge (0548) 580466. Warden and Director of Studies, Tony Thomas.

The Field Centre will be open from February to November. The programme is subject

to amendment: courses may be added (the Warden welcomes suggestions) or cancelled, according to demand. All courses run from Wednesday to Wednesday unless otherwise indicated. Duvets and/or sheets will be provided, and there will be no extra transport charge for any course in this programme. Two fees are shown for each course, the one in bold type being that for members which takes into account a £2 reduction; it is hoped that all new visitors will become members of the Field Studies Council (see Booking Form for details).

18-25 August: Teaching Ecology and Biology using Snails - Adam Cade (Advisory Teacher in Biology, Norwood Hall Institute) - snails are easily collected, kept, measured and observed, thus making ideal animals for investigating. The garden snail will be collected and used for most of the course, but other common terrestrial and marine species will be used. They will be used for a wide variety of ecological, genetic, behavioural and physiological investigations. This course is primarily designed for A-level teachers, but many of the practical techniques and ideas could be used in lower secondary and middle schools. £89, £87.

WANTED (by the Marine Recorder!)

Alder & Hancock, 1854-1855. A monograph of the British Nudibranchiate Mollusca, and Jeffreys, 1862-1896. British Conchology. Condition immaterial so long as legible and whole. Please write quoting price, to D. R. Seaward, [REDACTED], Yeovil, Somerset, [REDACTED]

EXCHANGES WANTED

Ossie and Joy Rippingale, [REDACTED], Margate Beach, Queensland, Australia have many marine bivalves available for exchange and would be interested to hear from members.

Jean Paul Kreps, [REDACTED], 8300 Knolle-Heist, Belgium, a new member of the Society, is keen to contact members and to exchange shells. He wants many British marine bivalves and gastropods (list with Newsletter Editor) and has about 600 European marine shells available for exchange.

We have a large stock of Conchological Journals and Books. Please send your wants or your offers if you want to sell, to: Elsevier Antiquarian Department, General Manager Dieter Schierenberg, 4 Lippijnstraat, Amsterdam, Netherlands. Tel.20-861541

AUSTRALIAN COWRIES

C. friendii vercoi, C. venusta, C. rosselli, C. marginata, C. reevei. We are divers not shell dealers so reasonable prices apply. Underwater photos of shell bought can be supplied. For list and details contact, J. Chandler, [REDACTED], Lower King, Albany B 6330, West Australia.

FOR SALE. We are suppliers of tropical sea shells, land snails, coral and sea curios to collectors, schools and colleges. S.A.E. for lists.
Nature of the World, 19 Bell Lane, Fetcham, Leatherhead, Surrey.

URGENT - 1982 SUBSCRIPTIONS - My thanks to those of you who have sent the balance of subscriptions due. Unhappily, 62 of you who have paid at the old rate have not sent the balance yet. Please check that your Banker's Order (if you pay this way) is correct and up-to-date and PLEASE send the balance due now. Postal reminders are expensive and wasteful of Society's funds. Ordinary Members £10 (U.S. \$25), Family Members £12 (U.S. \$30), Junior Members £2 (U.S. \$5), Institutional Members £15 (U.S. \$37.50). MARJORIE FOGAN, Hon. Treasurer, [REDACTED], Atherton, Manchester, [REDACTED]

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HOUSE REPAIRS AND ALTERATIONS

It is perhaps natural for collectors of mollusc shells (as of other items) to wish always to incorporate in their collections the most perfect and least worn specimens that come to hand. And yet there is some interest to be found in those specimens which are not just damaged, but are damaged and repaired by the animal itself. Within my own collection I find repaired shells less frequently among the Lamellibranchia than among the Gastropoda where examples of broken lips of the aperture which have been made good by the animal are fairly frequent.

The process by which repairs are effected in gastropods is described in some detail in Fretter and Graham (1976), though it would appear that the whole story is obscure in some respects (1). The first stage in the repair has to be the secretion of a matrix of conchiolin on to which the mantle can secrete the calcareous body of new shell. The extent to which a conchiolin 'former' for the repair can be secreted when the damage extends far back into the whorls, that is to say beyond a point to which the mantle edge (which secretes the conchiolin) can be withdrawn, is in doubt. It is clear, however, that some genera at least are able to repair their shells very efficiently and sometimes extensively.

When a gastropod begins to make good a missing portion of its protective shell it has to undertake the deposition of new calcareous matter at a much greater rate than is necessary for ordinary shell construction. This faster rate of building would appear also to have implications for the coloration and sculpture of the repaired piece. Some genera appear to be more able to effect 'invisible repairs' than others. For example, I have frequently found examples of Calliostoma zizyphinum (L. 1758), Gibbula magus (L. 1758) and others of the Trochidae where a repair has made good the shell with little interruption of either coloration or sculpture apart from a slight rough 'step' in the shell surface at the site of the damage.

My attention has been most vividly directed towards the self repair of gastropod shells by two samples of Rissoidae taken from shelly sand, one sample being taken in 1979 on the coast of Northumberland and the other sample in 1981 in Hendaye on the Basque coast of France. Most of the repaired shells in the samples were of Rissoa parva (da Costa 1778) and there were many more shells in this condition from the Northumberland sample than from that taken in Hendaye. A particular characteristic of R. parva is that it is a very variable species being sometimes smooth and sometimes ribbed and having varying patterns and depths of coloration. One consistent feature of identification of R. parva is the brown, comma-shaped mark to be found on the outer side of the lip. The variability of the species provides a good opportunity for observing the extent to which repairs do, or do not, make good the sculpture and decoration of the original shell. From the samples it would appear that, in its repairs, R. parva is as variable as in its original forms. Mostly, however, when a repair is effected the repaired portion lacks some or all of the original colour and does not reconstruct the

original sculpture. It may be that this is because the higher rate of regeneration in the case of a repair does not allow the pigment-producing features of the animal to make a full contribution to the work and perhaps the sculptural details are related to a cyclical feature in the development of the animal which is not operating during the time of the repair. Some specimens show, moreover, that where the coloration is diminished and sculpture is lost consequent upon a repair, the effect persists so that all the shell below the repair resembles those varieties which are naturally smooth and pale. That is to say that one can find individuals which are well coloured and ribbed and which have suffered damage while small then continue smooth and pale to adult size below the repair. All the repaired specimens of R. parva that I have so far seen, however, have been able to put the characteristic comma 'marker' in brown on the last whorl. One specimen from the Northumberland sample appears to have a very small hole on an early whorl repaired from the inside.

Had it been only the Northumberland sample on which to base my observations, I should have considered that the loss of coloration and sculpture was general with R. parva. The sample from Hendaye, however, which contained only a few repaired shells, did provide two specimens in which the original coloration and sculpture are clearly restored almost immediately from the point of damage. In view of the smallness of the sample it is hard to say how significant this is or what conclusions one may draw. Moreover, one can only speculate on the possible reasons for this which might be related to the water temperature, the availability of minerals in the water, the season ... or some cause quite different.

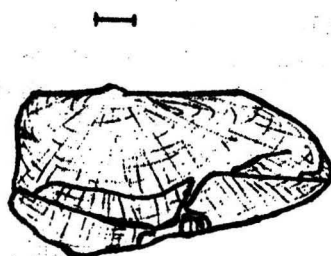


Fig. 1

Galeomma turtoni repaired.

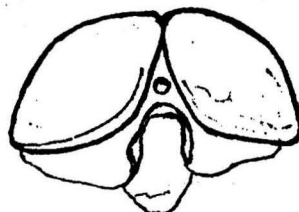


Fig. 2

Galeomma turtoni in life.

(After the photograph in Bouchet et al. 1978, p.76.)

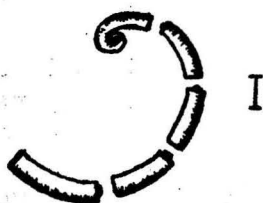


Fig. 3

Caecum glabrum ('Reconstituted' from a number of specimens.)



Fig. 4

Alvania carinata

Repairs on lamellibranchs, in so far as I have observed them, appear to be much less frequent. One occasionally finds specimens of larger shells (such as Mya or Lutraria) where a discontinuity near the edge seems to suggest a repair. I have a specimen of Barnea candida (L. 1758) in which at the posterior end a partial second shell has been secreted inside the original one leaving a blister-like area on the inner surface. My most vivid example of repairs effected to a lamellibranch shell was found in the sample of shelly sand from Hendaye. Several single valves of Galeomma turtoni Sowerby 1825 were found and one (incomplete) valve was found to have been extensively damaged and massively (for such a minute shell) repaired (Fig. 1). The valve had been fractured into a number of pieces which had become displaced in relation to each other like miniature ice floes, some of the edges over-riding the borders of adjacent pieces. The fractures, while extensive, did not extend into the hinge margin. The repair had cemented the broken fragments together in their displaced positions with a thick, uneven secretion covering the inside of the valve. The shells of G. turtoni are normally thin and transparent, but this repair has not only thickened the valve as one might expect: the repair is white, not transparent. One can only speculate as to the reason why the broken pieces did not simply fall off. Perhaps it is related to the function of the shell particular to G. turtoni which lives with the valves wide open and moves about (or is sometimes attached by a byssus) with the open shell like a little pitched roof on its dorsal side (Fig. 2). The attachment of the shell to the mantle appears to have been sufficient to prevent the loss of the broken pieces but not sufficient to prevent their displacement in relation to each other.

As well as repairing their houses, molluscs also modify them. Two examples of this immediately come to mind: Acmea subcylindrica (L. 1767) which, as it comes to maturity, is able to excise the upper coils of the shell and at the same time seal off the broken end. Such a shell is said to be decollated (2). A further example - and this too was vividly illustrated from the Hendaye sample - is Caecum. Caecum is an interstitial genus living among the grains of sand and needing to pass between them in order to pursue its natural life-style. It is obvious that a small, relatively straight shell can do this more efficiently than the usual coiled shell of most of the Gastropoda. The cylindrical, slightly curved and tapered shell of Caecum was believed, by early collectors, to belong to the genus Dentalium (3) but is in fact quite different. The early stage of Caecum does indeed follow the spiral pattern of the coiled Gastropoda but as the shell grows and (presumably) as this shape becomes progressively less convenient for passing between sand grains, the coil opens, begins to grow straighter and eventually the coiled portion is sealed off and excised leaving a small, slightly curved, truncated cone for occupation by the animal. It appears that this decollation occurs several times in the lifetime of each individual (4). For the first time ever I was able to find the coiled end of a Caecum glabrum (Montagu 1803) in my sand sample from Hendaye together with a number of larger pieces of various sizes each neatly sealed off at its apical end with a neat shell plug. By assembling specimens of appropriate increasing diameter it has been possible to gain some idea of what the shell would have been like had the process of decollation not taken place and this is shown in Fig. 3. It is clear that if a Caecum were to grow to this extent without shedding portions of its shell in this manner it would be quite unable to live and pass between the grains of sand.

Finally, there was also found in this remarkably rich sample of shelly sand from Hendaye a gastropod which had extended its home beyond the normal point of growth. Alvania carinata (da Costa 1778) at maturity develops a heavily thickened lip. Among a number of normal specimens of A. carinata there was one where the shell had undergone a further enlargement: after a first fully developed thick lip there was further growth of the body whorl, with additional spiral striae between the main carinae leading to a final thickened lip (Fig. 4). One wonders what might have stimulated to further growth this one specimen. Perhaps the first lip marks a temporary check in growth owing to short-term changes in season, water temperature or food availability.

The above remarks are speculative and based on only small samples of shells. I should be interested to hear from anyone who has made any unusual observations on the ability of molluscs to mend or modify their shells.

NOTES

1. Op. cit. p. 133
2. Fretter & Graham, op. cit. pp. 67-68
3. Forbes & Hanley, op. cit. Vol. III, p. 177
4. Fretter & Graham, op. cit. pp. 67-68

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Editions du Pacifique (1978)
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London, Ray Society (1976)

January 1982

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

A PLEA TO AUTHORS, PUBLISHERS AND REVIEWERS

Looking at my collection of books, made over many years, I often wish they were a standard size, as must all librarians. It would also be nice if those with vertical titles were the same way round. Looking along a shelf makes one appear to be watching a tennis match! It is unlikely that this degree of standardisation will ever occur, but there are other areas in which a more uniform approach would be very welcome. Many a good book is spoiled by small faults, and some books are so bad that they should never have been published. Our reviewers should help here, but alas the really bad books are seldom reviewed and often reviewers seem to not know what points should be looked for and tend to concentrate on small errors in nomenclature or spelling. We can certainly not trust the publishers' blurbs so the work of the reviewer is doubly important.

Shell books can be divided into groups. First there is the "Coffee Table" book, usually large with superb colour photographs and titles like "The World's Beautiful Shells" or "Shells in Art". They seldom pretend to be what they are not and the illustrations are often beautiful, though not necessarily useful in identifying species. They do remind us that shells, with their many shapes and colours, are objects to be contemplated and admired as well as studied.

Then there are the catalogues of "World shells with prices, including all the major families". Little can be said about these. They rarely illustrate many lamellibranchs, chitons or scaphopods. You can look in vain for oysters or winkles. They help to proliferate names for cones and cowries, since a new name means another species to collect - and to sell.

Beginners guides to seashells are usually quite adequate but one is reminded of gardening books which always seem to start by using valuable space to describe how to make a compost heap. The need could be filled by writing a nice standard two volume work. Volume 1 dealing with how and where to collect, with the techniques of cleaning, storing, cataloguing, photography, measuring, drawing, the law on collecting in different countries, the ethics of collecting and conservation. Where are those books now with plans of a dredge suitable for making up by your local blacksmith? Volume two could then describe the different families, colour variations, growth stages, monstrosities and so on. Such a two volume set

could last for ever with occasional reprints.

Monographs are the reference books for the serious collector. They are often expensive but this is inevitable and once bought should be an enduring standard work. Names will inevitably change with more knowledge (and the book can always be annotated by the owner), but if all the species are illustrated and described this can be more important than nomenclatural niceties. At least it can then be used as a standard and one can then say, "This is J. Bloggs, Plate xx fig 3" and everyone knows what you mean.

Books on local faunas are of great use, especially in the less well known parts of the world. Alas, no one writes a "Shell Fauna of Spitsbergen" these days. Works on the cones and cowries of the tropics sell better. Such local works are often written by local collectors with a great deal of intimate knowledge of habitats and variation not found elsewhere in the literature.

Titles are probably the first important aspect of a book. For the purchaser it is, or should be, a guide to what is inside. To the publisher it is a way of getting a would-be purchaser to buy their product. The two approaches may not be compatible! All too often we see titles like "Seashells of Australia" and, in very small type, "600 species illustrated". Inevitably the cowries and volutes and other beauty contest winners will fill half the book and it is easy to form a library of books with pictures of the same familiar species. There are even vaguer titles. "Mollusca" is one that comes to mind, in front of which I wrote on the spine of my copy "Non-marine" to give a better idea of its contents. I probably should also add "European" and then the title gives some idea of the contents. Remember, a small pocket book is unlikely to contain the complete fauna of South Africa whatever the title says. Caveat emptor!

Nowadays illustrations are nearly all in colour. But are the colours necessarily true? Correct colour is important and there is no reason why the printer should not achieve this reasonably well. The shells should be correctly positioned with gastropods in the standard position, that is apex upwards and a centre line through the columella vertical, the mouth toward the observer. Usually this view shows the specific characters of most shells. Very occasionally the opposite view may be helpful, or close-ups of the ornamentation and even more rarely a basal or apical view. The worst possible view is that which falls between any of these positions when the shape will appear distorted. This is so important that it cannot be emphasised enough. In a recent publisher's handout for a book entitled "Sea Shells of Oman" the faults are glaring. The area is one that has been neglected and has a number of endemic species. The photographs are excellent as regards detail, focus and backgrounds, so that the illustrations are clear. I presume that the illustrations give a fair representation of those in the book so let us look at page 53, where the Janthinidae are dealt with. The authors call them Violet snails so why should they be printed in a rather sickly cream colour? And why, oh why, were the shells apparently scattered on a background and photographed however they rested? Of five illustrations on this page not one shows an apertural view and it is almost impossible to guess the apical angle or even the correct shape of the shells. It is a book I shall be buying for myself but I wish the authors and publishers had taken more care with the production. There is really no excuse for such sloppy presentation and bad colour in a book which is by no means cheap.

Texts are the way in which an author should pass on his knowledge. Alas, not everyone is a natural writer. The late A. Wrigley whose descriptions of Eocene shells are so clear and easy to use, once said something like, "If a shell has knobs on it, why call them blunted spinous processes?" When one is an expert it is difficult to look with the eye of a child but authors should remember that their readers know far less than they do - or they would not buy and read the book. Textual errors of fact are not unknown, as are transposed titles or reversed photographs. It is always difficult to see one's own errors but it is

always possible to get someone else to check your manuscript and the more people who check the more errors are eliminated. It is also helpful to hide away a manuscript for a month or two - when viewed again it is then seen with a fresh eye and errors noted more easily. However, if a small percentage of errors still survive into print, what is wrong with those errata slips we used to see?

Apart from those discussed so far there are other common omissions. How often is one infuriated when dealing with an unknown lamellibranch to find that only one valve is figured and one is left to guess at the shape of the other hinge? Often the hinges are not even shown as is often the case in Christensen/Dance "Seashells". I still puzzle over those odd grey and black ghosts in the background of their figures and wonder if they have something to do with the original size and if so what? Correct scales are so useful especially when sensibly put in halves, quarters and thirds rather than X 1.73 or some such exotic figure. The Museum Approach is well shown in Tebble "British Bivalve Shells" where I found a meticulous description of the valves of Gastrochoena but a complete lack of information on its burrowing habits or the complicated flask and tube structure it builds.

It is not only in buying recent books that one has difficulty in judging the value of a book to oneself. Second-hand books are often the only ones on a subject. I recently saw a copy of Webb, "Handbook for Shell Collectors" priced at £10 and described as rare. Even for an American book this has incredibly badly displayed figures and it would be a clever person who could name a cowry from the dark blotches on some of the plates. This book should become much rarer. On the other hand the works of Myra Keen and Tucker Abbott show what well presented works can be like. Why do the plates in some books have to be tucked away either lurking in a little group at the back or scattered through the book at varying distances from the description? To compound the difficulty the little group of plates is often separated from the description of the plates which come first and you find yourself leafing backwards and forwards from text to plate to plate description. Try following Nordsiek. Even in well prepared books there can be errors and omissions in the index but what about books without any index? Again these can be overcomplicated with an index of common names, scientific names and localities all separate. A single simple index is far easier to use.

Well complaints are easy and few things in life are ever perfect so can anything be done? I would say yes. First there are the reviews. Often bad books are not reviewed in journals, perhaps because the authors have the good sense not to submit free copies for review. Is this the right criteria for deciding on a review? How nice it would be to have a review of current shell literature, every year or two, perhaps in the newsletter. And how useful would be a retrospective review of some of the books which are fairly frequently available in the second-hand lists, some of which, even after many years are as useful today as ever, while others are hardly worth while as a gift. The reviewers themselves might tighten up their descriptions which are often bland, rarely scathing, and often fail to note the shortcomings of a work, other than textual errors. And editors, why not send reviewers a checklist when enlisting their services, listing some of the points here mentioned as well as many other common faults.

Finally, and perhaps more ambitiously, why not a kind of "Seal of Approval" by the leading malacological societies of the world, in which the book would be guaranteed as conforming to certain minimum standards of preparation? With agreed common standards any national society could issue such a seal. This would certainly put pressure on publishers and editors to improve their presentation and allow the public to buy works with some degree of confidence in the contents. Perhaps even more important than merely saving an individual from buying a badly put together book, the effect ought to be to raise the general standard. After all with a little foresight you can usually examine a recent book, see it in a library or ask a friend, before buying, and so protect your purse. But suppose there is no other book on the area or on the group, which interests you? Then

you are forced to buy, whatever the quality. Here is where lies the big advantage in improving standards. Of course it might take some of the sense of adventure out of reading a review, reading the publisher's advertisement, ordering a new book and waiting excitedly to see what you are actually going to get!

One last bit of advice. The ultimate test of any non-fictional book is to use it. So if possible, before buying, try using a book to actually name a shell. Look in the index for something you think should be there. See if the book actually works. And maybe some authors should apply the same tests using some of their friends as guinea-pigs!

Philip Cambridge

A MOLLUSCAN WEEKEND IN THE DUBLIN AREA, SEPTEMBER 1981

One of the attractions of visiting southern Ireland is that so little recording of non-marine Mollusca has been done in recent years (apart from occasional 'flying visits' by groups from the Conch. Soc.) and there are many and obvious opportunities for making interesting new species records, adding to vice-county lists and so on. I recently had the pleasure of assisting in the running of a molluscan weekend for members of the Irish Biogeographical Society based in the Dublin area and the following account of this visit may give some idea of the nature of the fauna in this part of Ireland. Three localities in the north Dublin area were visited over the two days and, although the freshwater fauna was somewhat neglected, 71 species, a little over half the Irish list, were collected by the party.

The first stop on a dank but thankfully dry Saturday morning was Luttrellstown Demesne, an old wooded estate in the Liffey Valley east of Lucan on the western outskirts of the city. The surface rocks in this area are mostly Carboniferous limestones which outcrop in one or two places and generally provide a congenial environment for molluscs, especially those which are calcicole or xerophile in habit. Luttrellstown is a typical product of the plantation era in Ireland and has a good mixture of tree species, many non-indigenous, and some fine stands of mature beech. A calcareous stream running through the wood is dammed at one point to form a small ornamental lake and this and the stream have marshy, well-vegetated margins. The woodland flora, especially along the margins of the stream, is dominated by the wood-rush, Luzula. Two hours work by the party produced the following list: Valvata cristata Müller, V. piscinalis (Müller), Potamopyrgus jenkinsi (Smith), Bithynia tentaculata (L.), Physa fontinalis (L.), Lymnaea truncatula (Müller), L. palustris (Müller), L. stagnalis (L.), L. peregra (Müller), Planorbis carinatus Müller, Bathyomphalus contortus (L.), Sphaerium corneum (L.), Pisidium milium Held, Acicula fusca (Montagu), Carychium minimum Müller, Oxyloma pfeifferi (Rossmässler), Cochlicopa lubrica (Müller), C. lubricella (Porro), Columella aspera Walden, C. edentula (Draparnaud), Leiostryla anglica (Wood), Lauria cylindracea (da Costa), Acanthinula aculeata (Müller), Spermodea lamellata (Jeffreys), Punctum pygmaeum (Draparnaud), Discus rotundatus (Müller), Arion ater (L.), A. lusitanicus Mabille, A. subfuscus (Draparnaud), A. circumscriptus Johnston, A. hortensis Ferussac, A. distinctus Mabille, A. intermedius Normand, Vitrea pellucida (Müller), Vitrea crystallina (Müller), V. contracta (Westerlund), Nesovitrea hammonis (Ström), Aegopinella pura (Alder), A. nitidula (Draparnaud), Oxychilus cellarius (Müller), O. alliarius (Miller), Milax sowerbyi (Ferussac), M. budapestensis (Hazay), Limax pseudoflavus Evans, L. marginatus Müller, Deroceras laeve (Müller), D. reticulatum (Müller), D. caruanae (Pollonera), Clausilia bidentata (Ström), Trichia striolata (Pfeiffer), T. hispida (L.), Cepaea nemoralis (L.), C. hortensis (Müller).

Several old woodland molluscs were encountered in abundance, notably Acicula

fusca, Leiostyla anglica and Spermodea lamellata. Leiostyla is common over much of Ireland and was abundant here on rocks and tree trunks in company with Lauria and Clausilia bidentata, as well as in leaf litter and marsh vegetation. Spermodea was apparently much more localised, perhaps because the ground in most places was barely damp beneath the top two cm of leaf litter following a long dry spell in August. However, a populous colony was found in deep beech litter under Rhododendron after a sustained search in the vicinity of beech trees. Spermodea is an addition to the vice-comital list for Dublin and appears not to have been found in most of the neighbouring midland counties either, although I would suspect that many suitable habitats have been overlooked.

A feature of the Irish fauna which invariably arouses interest among visitors, especially from eastern Britain, is the abundance and diversity of slug species. Western forms such as Limax marginatus are particularly common and this species seems to climb to great heights on smooth-barked trees such as beech. At Luttrellstown slime trails were seen at heights of between five and eight metres. Limax pseudoflavus, a particular Irish speciality, is often abundant under logs in old woodland but for some reason few were found during this visit although, in the Dublin suburbs that evening, great numbers were seen crawling over footpaths and garden walls in heavy rain. This behaviour is characteristic and L. pseudoflavus seems to replace L. flavus (L.) as a city-dweller in Ireland. Of the other slugs listed Arion hortensis deserves mention as there are only a handful of authenticated Irish records. It was abundant at Luttrellstown in a mixed population with sub-adult Arion distinctus, the latter being by far the commonest species of the hortensis group in Ireland. Arion lusitanicus sensu Mabille also seems to be something of a rarity and I have been able to verify it only for sites in the neighbourhood of Dublin and Glengarriff in West Cork. A number of records for Donegal and Fermanagh which I originally attributed to this form refer to a different taxon which Miss S. M. Davies informs me is conspecific with the slug described by Quick (1952, Proc. malac. Soc. Lond. 29: 93-101) but which at present has no name. The taxonomic complexities of the Arion lusitanicus group are at present under scrutiny and will clearly require some further unravelling.

Saturday afternoon was spent at Louise Bridge in the vicinity of the Royal Canal at Leixlip, Kildare. The main focus of attention here was an area of marsh adjoining the Rye Water beneath the Canal aqueduct as this is recorded by Norris and Colville (1974, J. Conch. Lond. 28: 141-154) as an extant site for Vertigo angustior Jeffreys. Careful search at the roots of chest-high sward of Iris and Sparganium, however, failed to produce a single specimen of this rare species and a substantial mat of vegetation was uprooted and transported back to the lab. Washing of this material through a fine-mesh sieve and teasing out of the residue under water in a white plastic trough revealed one dead and six live shells of V. angustior. Molluscan associates noted both from this examination and in the field were: Pisidium personatum Malm, Acicula fusca, Carychium minimum, Succinea putris (L.), Cochlicopa lubrica, Vertigo antivertigo (Draparnaud), V. pygmaea (Draparnaud), Leiostyla anglica, Punctum pygmaeum, Deroceras laeve, Euconulus alderi (Gray), Cepaea nemoralis. A number of other species were collected from drier calcareous grassland by the Canal: Oxyloma pfeifferi, Cochlicopa lubricella, Pyramidula rupestris (Draparnaud), Lauria cylindracea, Vallonia pulchella (Müller), Discus rotundatus, Arion ater, A. distinctus, Vitrea contracta, Oxychilus alliarius, Deroceras reticulatum, Clausilia bidentata, Helicella itala (L.), Cepaea hortensis. The Canal itself appeared to have been recently drained and only a few common species were encountered.

On Sunday morning a brief foray to the North Bull foreshore on the north side of Dublin was less successful and the following list obtained for a sand dune system backed by saltmarshes: Hydrobia ulvae (Pennant), Ovatella myosotis (Draparnaud), Pupilla muscorum (L.), Oxychilus draparnaudi (Beck), Candidula intersecta (Poiret), Cernuella virgata (Da Costa), Cochlicella acuta (Müller), Helix aspersa Müller. For the sake of brevity I have omitted several of the commonest species mentioned in previous lists.

The remainder of Sunday was spent examining collected material as well as a small selection of species supplied by I.B.S. committee members but not seen by the party during the weekend. Notable among the latter was a collection of freshwater shells from the Grand Canal, including Bithynia leachii (Sheppard), some specimens of Cochlodina laminata (Montagu), which is rare and appears to be at the edge of its natural range in Ireland (collected from the vicinity of Enniskerry, Wicklow), and a large supply of Theba pisana (Müller) from the Portmarnock dunes in north Dublin. Before packing up, all available material was hurriedly preserved to form the basis of a reference collection for I.B.S. members and, although the weekend ended on a busy note, it seems to have been successful in attaining its limited objectives. Hopefully, as one result, there will now be a local contingent available to supply records for the mapping scheme in southern Ireland! A great deal of work still remains to be done in the very scantily worked north-central and extreme southern parts of the island.

6 February 1982

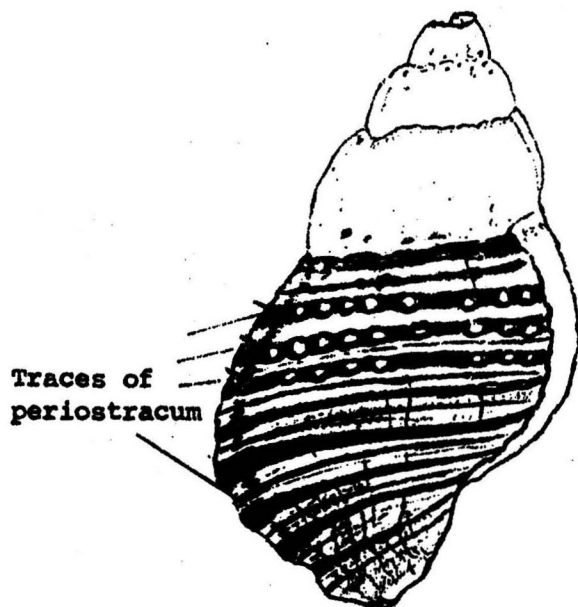
R. Anderson

A SOUTH AFRICAN SPECIES LIVING IN BRITISH WATERS?

Whilst on holiday in August 1981 in Cornwall, my husband found, by chance, a shell which has since proved to be a specimen of considerable interest. He was searching on a receding tide along the crumbling banks of sand either side of the swift-running channel that flows from the Hayle Estuary into St. Ives Bay at Hayle Sands. There are numerous dead shells to be found as one pulls the sand away and the shell in question was nearly discarded as a battered Buccinum undatum!

A fellow member of the Society, Alex Arthur, has identified the shell as a South African species of the Cymatiidae family, Cymatium argus Gmelin, and it is very possible that it has been living in waters out of its territory. There are three reasons for this supposition.

Cymatium argus Gmelin 1791



Firstly this species has a particularly long larval stage (about one year) and could therefore have travelled a long distance before maturing. Secondly the condition of the aperture is good. Finally, there are definite traces of periostracum

on the shell, as indicated in the figure drawing. This drawing was made from the shell and is life size. The shell measures 74mm in height and its maximum width is 45mm.

I would naturally be very interested to hear if there are any other records, or if any other member has anything to add to this account.

Jan Light

QUAHOG

I recently had the opportunity to purchase a quantity of live specimens of the bivalve, Mercenaria mercenaria (Linnaeus, 1758) - for human consumption (viz. mine!). Those of you who know anything of the British fauna will know that this is an introduced species, one of several species which are not found in our fossil record. Now, I knew that Mercenaria did live in various parts of Europe, but not that it was available for eating, so I did a little researching into this unusual species.

Venus mercenaria was described by Linnaeus in 1758 from specimens presumably obtained from the eastern seaboard of the U.S.A. The hardshell clam, littleneck clam, or cherrystone clam (why the latter, I will never know), as it is called, is normally found from Nova Scotia to Yucatan (Tebble, 1966), or from the Gulf of St. Lawrence to Florida and the Gulf of Mexico, and introduced to Humboldt Bay, California (according to Abbott, 1974).

What the settling English in America called 'hens' the local Indians knew as quahog, or more properly, quahaug (from the Algonquin word poquaühock, their name for M. mercenaria). The earliest mention of it I can find is in the treatise of Williams (1643) on the Algonquin language. He says, "...Hens, a little thick shellfish which the Indians wade deepe and dive for, and after they have eaten the meat there (in those which are good) they breake out of the shell, about halfe an inch of a black part of it, of which they make their Suckaühock, or black money, which is to them pretious." He goes on to say, "Meteaühock... The Periwinkle. Of which they make their Wómpam, or white money, of halfe the value of their Suckaühock..." In fact, the Indians also used the white parts of M. mercenaria (that is, poquaühock) to make what we now call wampum; and, on the western seaboard of the U.S.A., the local Indians used the Precious Elephant's Tusk-Shell, Dentalium pretiosum Sowerby, 1860 for the same wampum. But I digress.

The culinary possibilities for M. mercenaria must have caught on, for the latter has been eaten, even in restaurants, by the modern American for some time, now. Europe, of course, was denied the pleasure of devouring our quahog (or rather the people of Europe were), until it was able to be carried on board ship in a refrigerated state. It was first noted in Britain in the latter half of the eighteenth century. Step (1945) notes that it was first seen in the River Humber (opposite Grimsby and Cleethorpes, as a matter of fact) in 1864, while Tebble (1966) says it was 1860 (I'm inclined to believe Step, personally). Step (ibid.) points out that the name mercenaria refers to this use of making wampum - "- strings of beads which passed as money among the North American tribes" (sic).

Tebble (ibid.) goes on to say that a specimen of M. mercenaria was found (dead) in the Mersey in 1859, probably originating from a ship's ballast. It has since been reported from many places, including the Menai Straits, not far from the Mersey. Unsuccessful attempts were made to establish the quahog in the River Dee (Cheshire) and River Mersey estuaries, but large colonies now exist in the Solent, Southampton Water, and Portsmouth Harbour, perhaps having been introduced from the kitchens of ocean liners. Recently, experimental colonies have been set up in the River Yealm (Devon, just east of Plymouth), Poole Harbour (Dorset); and

the rivers Crouch, Roach (a tributary of the Crouch), and Blackwater (all Essex); and at Walton-on-the-Naze (Essex). The mollusc may still be found in these places, apparently. However, the only places where M. mercenaria is viable in any quantity are those mentioned earlier: the Hampshire ports; here, it is successfully cultured and is now available commercially. The "shellfish" (what a disgusting expression) you buy in the shops, however, probably come from France!

The quahog was introduced into various places in France, but was unsuccessful until 1910, when in the River Seudre (Charante-Maritime department, western France, where the river flows into the Bay of Biscay opposite the south end of l'Île d'Oléron), a river already rich in oyster and mussel beds, a population of Mercenaria became properly acclimatised. There is now a flourishing clam colony there. The mollusc is also living at Bono (between Auray and Bannes in Brittany), and this colony is also fished (Tebble, 1966; and Bouchet et al, 1978). Quahog can also be found in Zeeland (southwestern Netherlands) and at Ostend Harbour (Belgium).

Mercenaria mercenaria lives, according to Tebble (1966), in mud, with stones and shells, from between tidemarks to a few fathoms. It is a cold-water species, as must be the genus, since I can only find reference to three species, all cold-water. These can be broken down as follows:

- Family: Veneridae Rafinesque, 1815;
Subfamily: Chioninae Frizzell, 1936;
Genus: Mercenaria Schumacher, 1817; (no subgenera);
Species: 1. mercenaria (Linnaeus, 1758). Nova Scotia to Gulf of Mexico.
Northern Quahog, Hardshell Clam, Littleneck Clam, Cherrystone Clam.
Clam (Step, 1945).
Syn.: Meretrix rutila Sternheimer, 1957.
a. -subsp. texana Dall, 1902. Northern Gulf of Mexico region.
b. -forma notata Say, ?1822.
2. campechiensis (Gmelin, 1791). Southern New Jersey to Florida, Texas, and Cuba. Southern Quahog.
3. stimpsoni (Gould, ?1856). Northern Honshu, Japan, northwards.

The subspecies texana Dall has a shell whose central area is glossy outside and which has large, irregular concentric ridges. The form called notata Say has a shell marked with "external zigzag mottlings" (Abbott, 1974). Mercenaria campechiensis (Gmelin) has a shell similar to that of M. mercenaria, but larger (up to 6 $\frac{1}{2}$ " compared to only 5" at the most), heavier, and fatter. The purple internal patch of mercenaria is rare in campechiensis. The two species may well hybridise, so that there is a possibility of the southern form being only a subspecies of the northern one. The shell of the non-American species, Mercenaria stimpsoni (Gould) is rather similar to that of the other two species, but is more triangular, with a more pronounced posterior region. It is an ugly white shell (see Kira, 1965). The Japanese call it binosu-gai. All animals are female at birth; but later on, 50% of these change into males. It is not known whether the same is true of the two American species (see Habe, 1973).

There may well be other species of Mercenaria living, but a literature search through my library reveals none further.

You may have wondered what I did with the clams I bought, so let me finish by telling you! The only two recipes I know of for clams (there may be many more - indeed, I should be pleased to hear of them) are for a chowder and for a clam-based risotto. It was the latter I made eventually, having first relaxed the adductor muscles in boiling water for a few minutes, and then softening the animals in melted butter, before making the rest of the dish. The result? Well, in spite of (or maybe because of) culinary green-fingeredness (!) the clams were rather tough and rubbery, with an unusual pepperiness not unlike that of other bivalve molluscs - surprise, surprise. I shall do something else with the next lot I buy!

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David Feld

MOLLUSCS IN THE NEWS

Molluscs have probably never been considered very newsworthy creatures. Perhaps this is due partly to the fact that like most other small invertebrates they fail to arouse the anthropomorphic affinity that many people seem ready to experience with other, usually furry, animals. The absence of records or stories relating to molluscs has been evident recently while I have been extracting natural history records from several 19th. century west country newspapers. The oyster has emerged as the sole named mollusc so far, and always in the context of its commercial fishery around the Falmouth estuary in Cornwall. However, two similar reports have come to light, relating to curious and therefore more newsworthy incidents, involving oysters and rodents.

CURIOUS OCCURRENCE. - A tradesman of this town (Truro) having lately placed some oysters in a cupboard, was surprised at finding, in the morning, a mouse caught by the tail, by the sudden collapsing of the shell. This incident, though curious, is not new. The oyster has the power of closing the two parts of its shell with considerable force, by means of a strong muscle at the hinge. This circumstance of natural history may be illustrated by a singular incident, which happened about 40 years since at the house of Mrs. Aldridge, known by the name of the New Inn. In an underground cellar a dish of Wembury oysters was laid, by way of coolness; at the time the tide flows, the oysters, it is well known, open their shells to admit the water and take their food. At this period, a large oyster had expanded its shell, and at the instant two mice searching for prey, pounced at once upon the victim, and seized it with their teeth; the oyster, shrinking at the wound, collapsed with such force as to crush the marauders to death. The oyster, with two mice dangling from its shell, was for a long time exhibited as a curiosity. CAREW, in his History of Cornwall, tells of an oyster that closed its shell on three mice. An apposite instance is also epigrammatically recorded in the Greek Anthology - Ibid.

West Briton, January 5th. 1821

NOVEL RAT-TRAP. - Some few days since a large rat was observed making a repast on some dead fish which were lying on the beach at Falmouth, when its tail was suddenly taken into custody by an oyster, which held on so firmly, notwithstanding

the furious attack made upon it by the legitimate owner of the tail, that, finding resistance useless, the rat made off with all speed to a neighbouring hole, pursued by a whole host of persons who were attracted to the scene of action. The hole, however, being but just large enough to admit its body, but not the tail, which was still in the possession of the oyster, the rat was soon taken prisoner, and, of course, as soon sent the way of all flesh.

West Briton, September 22nd. 1837

John Humphreys

ENGRAVINGS OF MOLLUSCS

The new colour illustrated edition of Gilbert White's classic work The Natural History of Selborne, published by Webb and Bower in 1981, uses mostly eighteenth century coloured engravings of animals and plants to illustrate the subject matter of the book. There are two pictures of molluscs. On page 182, along with White's account of the havoc made by these animals in field and garden, is a plate showing two slugs from George Shaw's work The Naturalist's Miscellany: or Coloured Figures of Natural Objects; Drawn and Described Immediately from Nature 24 vols. (1789-1813). The two slugs are Limax maximus and the other Arion ater agg., but the observant Conchologist will notice that these are portrayed as sinistral with the breathing pores on the left instead of the right-hand side. They appeared in this form in Shaw's book. The obvious explanation of this is that the original drawing was done by the artist and the work handed over to the engraver who made the block. It is obviously easier for an engraver to copy the drawing as it comes rather than as a mirror image which would be necessary to have a print the same way round as the original drawing. Where an object is bilaterally symmetrical the engraver can get away with the easier direct copying of the original, but in this case, it was not realised that slugs were not exactly bilaterally symmetrical. Although sinistral slugs do occasionally occur (like left-handed snails) it would be very unlikely for two specimens given to an artist to be sinistral.

The second engraving of a mollusc, from the same work by Shaw, page 215, shows two specimens of the Common Garden Snail, Helix aspersa crawling towards each other and shooting love darts. In the foreground are some eggs and newly hatched young snails.

The new illustrated version of Gilbert White's classic costs £12.50, and for book collectors, 100 copies have an insert with the White coat of arms and these are available only from The Gilbert White Museum, The Wakes, Selborne, Alton, Hampshire.

June Chatfield

ANIMALS OF THE TIDAL MARSH

By Franklin C. Daiber. Van Nostrand Reinhold Company, New York, 1982, 422 pages.

This is a review of the literature on the tidal marsh fauna, with particular reference to the United States. Three species of molluscs are covered in some detail - The Ribbed Mussel Geukensia demissa (Modiolus demissus), the Florida Marsh Clam Cyrenoida floridana and the Coffee Bean Snail Melampus bidentatus and these are all prominent members of the American salt-marsh community. Details of population density, distribution on the marsh, reproduction, respiration, feeding and other adaptations to the environment are given in the various chapters. Reference to other molluscs found on tidal marshes, including some European

species of Littorina and Hydrobia ulvae are also made, but with less detailed coverage of the literature. For the serious worker, there is a full list of references at the back giving the published sources from which this book has been compiled. A good potted account for the salt-marsh enthusiast.

June Chatfield

ECOLOGY OF WALLS

By Arnold Darlington. Heinemann Educational Books, 1981, 138 pages, £4.95 paperback.

Walls are fascinating habitats, but they have not been studied or written about in any detail. This new book Ecology of Walls includes general ecological factors, flora and fauna and is aimed at the general biologist, student and teacher rather than the specialist. Molluscs are mentioned in the general survey of the wall fauna and also in a separate chapter: the approach is rather general and there is scope for further work on a wider range of land snail species and also on the behavioural side which could help to explain distribution and aggregation of snails within the habitat. Harbour walls are included, and arising from this is an account of adhesion and substratum preference in limpets.

June Chatfield

EXTRACTS AND QUOTES OLD AND NEW

"EXPLORATIONS IN HONDURAS", by W. V. Wells. 1857, Sampson Low, London.

Chapter 19, page 349: Cutting Mahogany.

"The woodman makes his way into the forest, and after long deliberation, selects the most eligible places for cutting". - - - - "He is provided with a conch, which he sounds from time to time, and which is answered by his companions".

"Roads are often built directly to the river, the conch serving as a guide; for, amid these vast and silent forests, the dense underbrush presents an impenetrable barrier to the progress of man or animal".

"SHELLS", photographs by Andreas Feininger, text by Dr. W. K. Emerson, Curator of Molluscs at the American Museum of Natural History in New York. £7.50 (U.K. only) 1972. Colour and black and white. Size 10" by 12 $\frac{1}{2}$ " (large). Thames and Hudson, London. (Now out of print) ISBN 0 500 54008

If you are an artist wanting to use shells, if you are a photographer wanting to see shells, or if you just like looking at shells, this is a book which offers something different.

"NEW ZEALAND MOLLUSCA". Marine, Land & Freshwater Shells, by A. W. P. Powell. Collins, 1979. ISBN 0 00 216906 1. Address: P.O. Box 1, Auckland. 42-20 dollars N.Z. including postage to U.K., which was £19.03 at the time of purchase. I received my copy from Auckland this July.

It has 16 full page plates in colour, 66 in monochrome, and 120 text figures. I would like to say to shell collectors "Buy it". I would like to say to libraries "Buy it". I would like to say to students of Mollusca "Buy it". Those who have New Zealand collections will welcome it. Those who haven't may find a new and absorbing interest, more possible on a basis of exchange of local shells for British collectors, than tropical shells.

Betty M. Smith

"The Flight of the Condor", by Michael Andrews. Collins/B.B.C., 1982. £12.95.
Highly recommended.

Chapter 1, page 26 - The Islands of Tierra del Fuego and Cape Horn.

"Back on the deck of the Castor, the sailors were shelling the mussels. The deep-water mussel, known locally as the cholga, grows to a large size. Drake reported finding them twenty inches long, though it's rare to find them half that length now. We sat on the deck eating them straight from the sea with Cytharia fungus as bread. They were delicious".

Chapter 4, page 54.

"It was blowing quite hard from the west and the breakers were a fine sight as they rolled in throwing a debris of kelp and crab-shells high up the beach. There were flocks of Magellanic oyster-catchers running to and fro after the waves, on legs that looked much too short, seizing razor-shell clams from the sand. The debris of their work lay in piles of millions of empty shells cast higher up by the waves. There were also enormous barnacles six inches long, and timbers hollowed out by the teredo worm until they were just empty husks".

The Andes and The Amazon, by James Orton. Sampson Low, Son and Marston, 1870

Chapter 19, page 282.

"At the Peruvian village of Pebas, at the confluence of the Ambiyacu, we discovered a fossiliferous bed intercalated between the variegated clays so peculiar to the Amazon. IT WAS CROWDED WITH MARINE TERTIARY SHELLS!"

"The species, as determined by W. M. Gabb of Philadelphia, are Neritina pupa, Turbonilla minuscula, Mesalia Ortoni, Tellina Amazonensis, Pachydon obliqua, and Pachydon tenua (figured and described in the American Journal of Conchology). All of these are new forms excepting the first, and the last is a new genus. It is a singular fact that the Neritina is now living in West India waters, and the species found at Pebas retains its peculiar markings. So that we have some ground for the supposition that not many years ago there was a connection between the Caribbean Sea and the Upper Amazon; in other words, that Guiana has only very lately ceased to be an island".

"Life and Nature under the Tropics", by H. M. & P. V. N. Myers. D. Appleton & Co. 1871

Chapter 21, pages 296 and 297.

"Swiftly we were borne down the Amazons, and upon the second day from the mouth of the Rio Napo we reached Pebas located upon a high bluff on the left bank of the Ambiyacu, a small stream flowing into the Amazons from the north".

"Here we found interstratified with the clay of the bluff upon which Pebas is situated, a stratum of marine shells".

"Mr. Conrad, to whom these shells were submitted for identification, gives the number of species as seventeen, all extinct, belonging to nine genera, only three of which are now represented. The following list contains the most important; others may yet be added: Isaca Ortoni, Isaca Lintea, Liris laqueta, Eboria crassilabra, Eboria bella, Hemisinus sulcatus, Dyris gracilis, Neretina Ortoni, Bulimus linteus, Pachydon (Anisothyris) tenuis, Pachydon carinatus, Pachydon obliquus, Pachydon erectus, Pachydon cuncatus, Pachydon ovatus, Pachydon altus, and a bivalve allied to Mulleria".

"The Fishes and The Forest - Explorations in Amazonian Natural History", by Michael Goulding. 1980, University of California Press. £12.00. ISBN 0 520 04131 3 Highly recommended.

Pages 204 - 205.

"The rebecca", a large doradid catfish, *Megaladoras irwini*, "was caught only in the flooded forest". - - - - "Nine specimens were captured, all with full stomachs, and six of these contained large quantities of pulmonate snails. The rebecca was the only fish in the investigation that appeared to 'specialise' in snails, and judging from the quantity of them found in the stomachs and intestines, they must have some adaptation for finding them in the flooded forests. The snails were swallowed whole and ranged in size from about one to five centimetres in greatest width".

Betty M. Smith

CONCHOLOGICAL SOCIETY OF GREAT BRITAIN & IRELAND

959th. (Ordinary) Meeting held on 17th. April 1982 at B.M.(N.H.)

In the Chair: Mr. J. F. M. de Bartolomé, with 33 members and friends present.

Lecture: 'The Blind Snail' by Mr. G. Osborn.

Announcements and Correspondence: A letter has been received from the German Malacological Society announcing a field trip to Dauchingen from 29th. May to 1st. June.

The field meeting to Bexhill has been changed from Saturday 1st. May 1982 to Sunday 2nd. May 1982; other details remain similar.

An additional field meeting will be held on Sunday 30th. May 1982, led by Mr. Derek Rands, with the aim of demonstrating techniques for photographing Mollusca; meet at Luton B.R. Station at 11.15 a.m.

The British Shell Collectors' Club are holding their Annual Shell Show on Saturday 24th. April at the Napier Hall, Hyde Place, near Victoria, open from 2 p.m. to 5.30 p.m. Transport by the number 88 bus, or the nearest underground station is Pimlico.

The British Museum (Bloomsbury) has a special exhibition of Syrian antiquities that includes several species of Murex, illustrating the importance of Tyrian purple dye extracted from them.

Mr. Negus requested more articles for the Newsletter, especially medium or long articles.

Meeting closed at 4.45 p.m.

Exhibits:

T. E. Crowley - *Limicolariopsis*.

W. Karo - *Pterinotus orchidiflorus* Shikama 1973.

G. Osborn - *Cecilioides acicula*.

T. Pain - Giant Land Snails and their eggs.

E. Sándor - Family Mitridae, Genus *Vexillum*.

R. P. Scase - *Cantharus (Pollia) sanguinolentus*: shell and illustration.

B. Verdcourt - *Prositata butumbiana* - an enigmatic African endodontoid.

- Use of *Limicolaria* in palaeoclimatology.

960th. (Ordinary) Meeting held on 15th. May 1982 at B.M.(N.H.)

In the Chair: Mr. J. F. M. de Bartolomé, with 36 members and friends present.

Nominations and Elections to Membership: 6 Full Members,
Cesare, Dr. Tabanelli, [REDACTED], 48010 Cotignola -(RA), Italy.
Dykstra, H.H., [REDACTED], 8604 CA Sneek, Holland.
Field, Miss H.M., B.Sc., [REDACTED], Eltham, London, [REDACTED].
Fuller, R., B.Sc., [REDACTED], Burnt Lane, St. Martins, Guernsey,
Gobbitt, J., [REDACTED], Kesgrave, Ipswich, [REDACTED]. C.I.
Leighton, S.T., [REDACTED], Higher Blackley, Manchester, [REDACTED].

Paper read: Abstract of paper on Achatina, by J. Allen.

Lecture: 'Looking at fossil shells', by Dr. Adrian Rundle.

Announcements and Correspondence:

The European Science Exchange Program has funds available for work in Spain; write c/o. The Royal Society.

Miss Julia Nunn, now Hon. Secretary, gave an address and telephone number for use during the summer.

An additional field meeting will be held on Sunday 30th. May 1982, led by Mr. Derek Rands, with the aim of demonstrating techniques for photographing Mollusca; meet at Luton B.R. Station at 11.15 a.m.

Phillips & Jolly, Auctioneers (Bath) have a large collection of tropical marine shells for sale.

Meeting closed at 4.48 p.m.

Exhibits:

- P. E. Negus - Some Eocene, Oligocene and Pleistocene gastropods.
- G. Osborn - Fossils of the Shenley Limestone.
- E. B. Rands - Irish expedition, 1982.
 - Limax maculatus.
- A. Rundle - Looking at fossil shells.
 - a few slugs.
- E. Sándor - Family Strombidae, Genus Lambis.
- T. Pain - The genus Neptunea Roding 1798 in the Plio-Pleistocene of the southern North Sea Basin.

CONCERNING CAPTAIN THOMAS BROWN

To conchologists the name Thomas Brown is familiar as the author of books on shells: Elements of conchology (1816); Illustrations of the conchology of Great Britain and Ireland (1827; a dozen of the names first published in this book are still in use); Conchologist's text-book (1833); Illustrations of the fossil conchology of Great Britain and Ireland (1839); Elements of fossil conchology (1843); Illustrations of the Recent conchology of Great Britain and Ireland (2nd. edition, 1844). A recent discovery, or rather rediscovery, of a book by this author, "Popular natural history and characteristics of animals" (James Blackwood, London, 1869), has renewed interest in his works. Where was it discovered? On one of my own bookshelves! How long I have had this book or where bought I have no recollection, but until now it has remained unread - a postponed treat. R. Crompton Day, Harlow, 1876, is inscribed on the flyleaf. This little book can be recommended as a bedside book, the only drawback being the smallness of the print. 'Animals' means mammals, of which only a small assortment is included. Of the 309 pages, 176 are devoted to the horse kind, the cat kind, and the dog kind. Other 'kinds' are the cow, sheep (which includes antelopes), hog, weasel, hare and squirrel, rat, etc., and bats. The rat chapter includes the mole, hedgehog (regarded as vegetarian), porcupine and armadillo. Strangely omitted are the

elephant, hippo, rhino (though the Indian rhinoceros is illustrated), camel, giraffe and bears. There is a fund of shaggy dog stories, and indeed many other 'shaggy' stories.

It seems that an earlier edition in three volumes was published by Fullarton, London, 1848. My edition is posthumous, as Brown died in 1862, and is No. 23 of Blackwood's Choice Reading series. It may be of interest to mention other non-conchological works by Thomas Brown: Biographical sketches and authentic anecdotes of dogs; The book of butterflies, sphinxes, and moths; Taxidermist's manual; Zoologist's text-book; Dictionary of the Scottish language; Habits and characteristics of animals and birds; Illustrations of the genera of birds; Illustrative anecdotes of birds, fishes, insects, etc..

A. E. Ellis

GENERAL NOTES

SHELL IDENTIFICATION KITS FOR SALE

These kits are intended to help those with a new interest in British marine shells to identify the larger, commoner species. Each kit contains a set of named shells in separate polythene bags, a checklist, introduction, marine census information and a conservation leaflet.

There are four kits, as follows:

Sandy shore	containing 39 species	cost £4.50
Rocky shore	containing 31 species	cost £3.50
Muddy and estuarine shores	containing 14 species	cost £1.50
Complete set	containing 78 species	cost £7.50

Please order the kits by ringing Eleanor Fogan on 01-691 5684 (evenings only) at least two weeks before a Conchological Society meeting at the British Museum (Natural History), to be collected at that meeting. We have decided not to post the Shell Kits because of the fragility of many of the species. The proceeds of these sales go to the Society. Cheques and cash should be handed to the Treasurer, Mrs. M. Fogan, when collecting the kit from Eleanor.

Eleanor Fogan, Celia Pain

RAT AS LIMPET PREDATOR

Limpets were still feeding actively on rocks just exposed by the falling tide on the boulder shore at Portland, Dorset, on a day in June 1981, as I pondered the presence of empty shells of Patella vulgata, obviously very fresh. Then I became aware of another shore worker, a large brown rat (presumably Rattus norvegicus), removing and eating them at the rate of about two per minute.

It appeared to have no difficulty in dislodging the limpets which were mostly about 2-3cm. size. I got the impression that the incisors slid under the raised shell, but the forefeet may have helped in some way.

No doubt this habit is common and widespread, but I have not seen it recorded.

D. R. Seaward

POTAMOPYRGUS JENKINSI (SMITH) LIVING IN A COAL-MINE

The Chatterley Whitfield Mining Museum at Tunstall, Stoke-on-Trent, is run by the Chatterley Whitfield Mining Museum Trust and is the former colliery of the same name. It is not a deep mine, and the guided tours are 700ft. below ground. E. G. Hancock recently visited the museum, noted snails in the running water underground and collected a few. Here are his notes: "It (the mine, NFMCM) no longer produces coal. For this reason the ubiquitous water one finds underground is running clear rather than murky and polluted with coal dust, lime, etc..

The shells were numerous and crawling across the surface of a very light silty deposit in the channel which stirred up in clouds as one tried to collect the specimens. The depth is 700 feet which is not deep for a coal mine".

Mr. Hancock managed to collect two specimens (he had, naturally, no collecting gear with him!) and generously gave them to me. The specimens have been deposited in the Merseyside County Museums, Liverpool.

Nora F. McMillan, Merseyside County Museums, Liverpool

HEDGEHOGS AND SNAILS

From the Express & Echo, Exeter, 4 December 1981.

The main advantage a snail has over a slug is that it carries a shell on its back into which it can withdraw in times of danger. Just how useful is this protection though? Watch a song thrush dealing with a snail by dashing its shell against a stone and the whole idea seems pretty futile. I cannot help thinking, however, that when it comes to hedgehogs, a snail may well have an advantage over a slug in that the latter would appear easier to deal with.

An extraordinary incident that seems to bear this out occurred in a garden that was so overrun with snails the woman who owned it made a practice of walking around the place at dusk crushing snails underfoot. One evening, though, when she was scrunching her way around the garden in an orgy of destruction, she suddenly became aware the noise was not coming from her alone. A similar scrunching was going on behind, and when she peered through the gloom she saw a hedgehog bringing up the rear, and having a whale of a time as it munched away at the leftovers. To satisfy her curiosity, she offered the hedgehog a snail fully intact, but the offer was refused until she broke the shell. Then the hedgehog lapped up the contents with as much enjoyment as it had all the others. By the end of the evening the hedgehog had disposed of well over 30 snails, mainly because they were so easily obtainable. This would seem to prove that as far as a hedgehog is concerned, the shell of a snail does act as a deterrent, even though it may not always be a complete safeguard.

Eric Roberts

NEWS FROM OUR MUCH-TRAVELLED MEMBER CAPTAIN W. E. OWEN

His large collection of shells is to be 'computerised' at Manchester we understand and we quote:-

"Just a rough reference - I have 6,000 shells first recording Nos. 1 to 6,000 with A's, B's and C's added. Each shell having an index card, colourings ... UNIVALVES, RED PRINTING, BLACK TYPING, grouped normal Univalves, Land snails, Cypraea, Cones, Murex, Olives and Chitons, and F.W. SNAILS. Blue cards with black typing for Bivalves. Blue cards with red typing for Critters ... Corals, Sponges, Stars, Shark jaws,

Cow Fish, Sun Fish, Nurse shark Crucifix fish bone, and anything from the sea. Also many specimens in alcohol such as Octopus, Sea Hare, Cucumber. The total critters are around 140.

For shell Fossils I have a green printed card with red typing. These have Formation, Geol. Years and approx. million years, Area, Author and year. They number to date 301 with about 100 more at Hong Kong. Nearly all the fossils have full data.

I have started on my second 6,000 group of shells but cannot see reaching more than a few hundred as when I sight a shell I find I already have it.

My first 6,000 shells, some duplicated, I have thoroughly checked and grouped in A, B, C rotation and now within one minute if offered a shell with Latin name I can tell if I have it or not.

I am trying to record my second 6,000 without duplication unless it is a rare cone, Cypraea, or other."

EXCHANGE WANTED

Vince Kessner, c/o. Dept. of Health, P.O. Box 40 596, Darwin N.T. 5792, Australia, wishes to exchange shells with members in Britain. His main interest is in land snails. Please write.

NEW PUBLICATION

'Seashells of Oman' by Donald and Eloise Bosch, edited by Kathleen Smythe, Longman Group Ltd. 208 pages, over 350 colour illustrations. £16.50.

FOR SALE

Books on CONCHOLOGY and all other branches of Natural History always for sale. Lists issued at intervals. Please write if you wish to be placed on my mailing list. I also buy books and periodicals on Mollusca. Andrew Johnson, [REDACTED], Tyne Crescent, Bedford, [REDACTED]. Bedford [REDACTED].

Marine shells from South Africa, Mozambique, U.S.A. and Australia, including Cowrie, Bubble, Conch, Paper Nautilus, Helmit, Olive, Cerith, Trivia, Abalone, Tulip and Cone. Telephone [REDACTED], or write: Michael Beach, [REDACTED], Bath, Avon, [REDACTED].

We are suppliers of tropical sea shells, land snails, coral and sea curios to collectors, schools and colleges. S.A.E. for lists.
Nature of the World, 19 Bell Lane, Fetcham, Leatherhead, Surrey.

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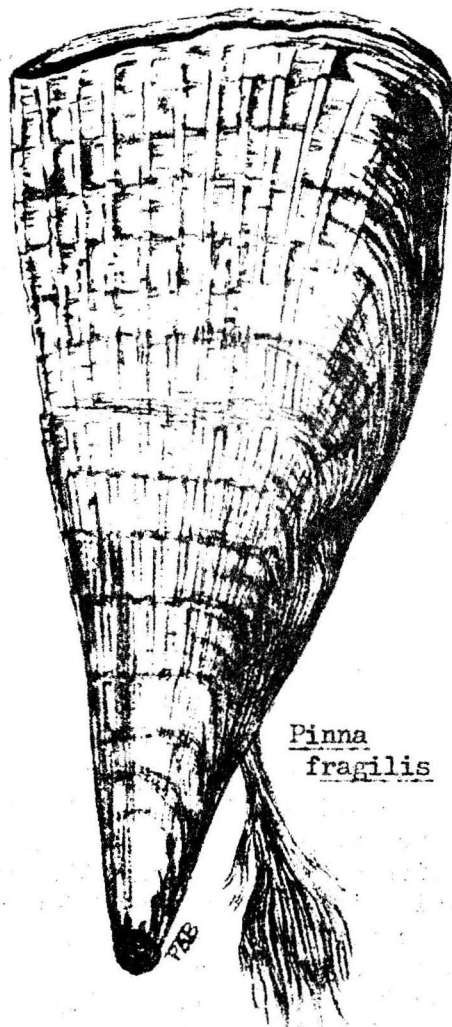
Produced by THE CONCHOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND

CHANGE OF ADDRESS - NEWSLETTER EDITOR

Please note the change of address of the Newsletter Editor, P. E. Negus, as shown above. Correspondence sent to the old, London, address may perhaps not be forwarded.

THE SILK WORM OF THE SEA, SPINNER OF CLOTH OF GOLD

My interest in 'Cloth of Gold', effectively started when our Venetian friend Adriana Boscaro asked what she could obtain for me in Italy that we could not buy here. It was my husband who actually thought of instigating a search for this unusual molluscan by-product which we had read was still available a century or so ago; knowing Adriana's determination and powers of detection, we thought that if she could not succeed, it was certainly no longer to be found in Italy. It was, however, difficult to persuade her that there was indeed a famous material, spun as wool or combed as silk, produced by a mussel: finally, at least half-convinced, she set off on her quest while we sat back and waited. Many months later, a package arrived with a note written by her on April 1st. 1965, assuring us that despite the date, the enclosed plaited thread was spun by old fishermen in S. Italy, whilst the combed threads, tied to a backing of coarse material forming 'Cloth of Gold', had been prepared by nuns in Tarento. I was captivated by the appearance, texture and golden colour of this substance, almost as fine as spider silk, yet so strong and durable; and I marvelled that these were the byssal threads of the Fan Mussel, Pinna fragilis, and that they were spun in the same way as the much coarser and more wiry byssal threads of the Common Mussel, Mytilus edulis. The latter anchors itself to hard substrate, whilst Pinna fixes its far more numerous anchoring threads on to the fine particles in sandy and muddy substrates in which whole colonies may live so closely together that a potentially shifting bed is rendered immovable, and despite the fragility of the shells, one's feet suffer more from walking on them, than the shells suffer damage. The Fan Mussel is the largest British shell, usually said to reach a maximum of 348 mm (12") but according to Jeffreys (1863) it can be as large as 420 mm (15") x 203 mm (8"). It lives on the west coast of Britain as far as the Orkneys, and on the west coast of Ireland. About the same time that I received the Cloth of Gold, I was involved with sorting and mounting a fine collection of Scillonian shells for the Isles of Scilly Museum. They had been collected in the latter half of the 19th. century by Miss Jenkinson, a cousin of Arthur Dorrien-Smith, former Governor of the Isles. In the collection were a dozen fine Pinna mussels, each with its byssus carefully preserved. From the paper by Smart & Cooke (1885) I learned that Pinna had once been present at low water in the Zostera beds, but that T. G. W. Fowler had failed to re-find it in 1949 when the Zostera had been decimated in the Scillies, as elsewhere in the 1930s (Gardiner, 1950). Couch (1841) found these mussels studding the bottom "in multitudes" in an area between nine and twenty miles south of the Dodman, where they still occur, although in smaller numbers. He described how if a line or hook



Pinna
fragilis

became entangled in the shells, a powerful effort was required to drag it free, and either the shells would break, or some of the ground would be torn away, bringing up "a rich harvest of shells." A rich harvest? Does that suggest that these molluscs were ever eaten in Cornwall? Montagu (1803) writes of the fan mussels of Salcombe "Some of these shells have been taken annually for many years, the animals having been accounted very good food; but they require at least five or six hours stewing to render them eatable; if this is properly attended to, they are nearly as good as scallops, but never so tender." However Lovell (1867) quoting the ancients, says that "Plutarch tells us that Matron, the parodist speaks of it as forming one of the dishes at an Attic banquet, saying

And pinnas sweet, and cockles fat there were,
Which the wave breeds beneath its weedy bed.

Indeed if we may judge the number of times Athenaeus mentions it amongst the various eatable shell-fishes, it formed a favourite article of food amongst the ancients, and was highly prized by them, as it is at Naples in these days, where it is considered a recherche morsel and too expensive for the poor people to indulge in it. It is of greater value for its byssus than for the table. Poli remarks that it is cooked at Naples with pepper, oil and lemon-juice and served with baked beans."

Many authors write of Pinna silk or wool, also known as marine silk and fish wool, and the method of collecting it and then cleaning and weaving it to make up into various items. I have brought together a number of these accounts: if readers know of others, not derived from these, I would be very pleased to know.

"Pinna ingens Montagu From deep water about twelve miles from Falmouth Harbour. Not common. The byssus by which the shell is fixed to a solid body is long, fine silky and very abundant. Rondelet observes these threads are as fine, compared with those of the muscle (sic) as the silk from the silk-worm; hence the common name given to the animal, 'the silk-worm of the sea.' ... The thread is so fine, that a pair of stockings made of it can be easily contained in a snuff-box of ordinary size. In the year 1745, a pair of gloves of this material was presented to Pope Benedict XIV, which, notwithstanding their extreme fineness, protected the part both from cold and heat. A robe composed of the thread was a gift of the Roman Emperor to the Satraps (a governor of a district) of Armenia. A writer in the Gentleman's Magazine, in 1782, says:- 'The ancients had a manufacture of silk, and about forty years ago it was revived at Tarento and Regio, in the kingdom of Naples. It consists of a strong brown silk belonging to some sort of shell, of which they make caps, gloves, stockings, waistcoats, etc., warmer than the woollen stuffs and brighter than common silk.' In the Great Exhibition of 1851, a variety of products manufactured from the pinna silk were exhibited: and Dr. Lankester states that a purse and other articles, formed from this fibre, are exhibited in the animal product collection of the museum at South Kensington." Cocks (1862).

"Pinna rudis L. If it is forcibly torn or driven from its anchorage, it can undoubtedly spin a new byssus and reattach itself. The fibre of this curious appendage or 'beard' is tubular like hair. When dried it is stiff and wiry; but if used fresh it is sufficiently flexible to be woven into gloves and stockings. Tarento is a noted place for the manufacture of such articles; and at our last International Exhibition a Cornish muff made of this material might have been seen by those disposed to venture into an obscure gallery in search of the few objects of natural history for which any space was allotted. According to Verany, the byssus is a successful remedy for the ear-ache; but he does not say in what manner it is applied.... Mr. Spence Bate informs me that the trawlers at Plymouth call these shells 'caper-longers' and that they avoid the Pinna-ground for fear of their nets being torn. The shells are described as standing upright on their narrow end, and as bearing some resemblance to trees in a thick forest. The word 'caper-longer' appears to be a corruption of Cappa lunga by which name the Pinna is known in the Mediterranean. So many of our men-of-war have been at Naples, that the familiarity of Plymouth seamen with such Italian words is easily explained." Jeffreys (1865)

"Pinna pectinata L. The byssus or silky thread of the Pinna is called by the Sicilian fishermen lana penna, and is manufactured into a silken fabric. It was known to the ancients and called by them pinna-wool, and by the Tarentines lana pesca or fish-wool. St. Basil, Bishop of Caesarea, mentions it in one of his homilies, saying 'Whence had the Pinna its gold-coloured wool, that colour which is inimitable?' (Stollberg's travels Vol. 2, p. 151, translated by Thomas Holcroft). In Aufrère's travels is a description of the mode of collecting these shell-fish by the Neapolitans, and of the manufacture of different articles from the silk: 'As soon as a pinna is discovered, an iron instrument called pernonico, is slowly let down to the ground over the shell which is then twisted round and drawn out. When the fishermen have got a sufficient number of them, the shell is opened, and the silk called lana penna, is cut from the animal, and, after twice being washed in tepid water, once in soap and water, twice again in tepid water, is spread upon a table, and suffered to become half dry in some cool and shady place. Whilst it is yet moist, it is softly rubbed and separated with the hand, and again spread upon the table to dry; and when thoroughly dried, it is drawn through a wide comb, and afterwards through a narrow one. These combs are of bone, and resemble hair-combs. The silk thus combed belongs to the common sort and is called extra dente: but that which is destined for finer work is again drawn through iron combs or cards, called scarde. It is then spun with a distaff and spindle, two or three threads of it being mixed with one of silk, after which they knit not only gloves, stockings and waistcoats, but even whole garments of it. When the piece is finished, it is washed in clean water mixed with lemon juice; after which it is gently

beaten between the hand, and finally smoothed with a warm iron. The most beautiful are of a brown cinnamon, and glossy gold colour. A pair of gloves of the Pinna silk may be seen in the British Museum; and in the International Exhibition some articles made from it were exhibited in the Italian Court, viz. a large shawl, gloves and specimens of the thread in skeins." Lovell (1867).

"The byssus ... is in the large Pinna or wing shell, so much developed that, by the native of Sicily it is manufactured into gloves, socks, caps, etc., and of a beautiful brownish colour. These are valuable as objects of curiosity, but too expensive for general use, the price of a pair of gloves being six shillings, and that of a pair of stockings eleven shillings." Yeats (1872).

It is alleged that the golden robes worn by Henry VIII when he met Francis I. in France in 1520, were made from Pinna silk: certain it is that Henry and his entourage wore gold-decked apparel, and that the place where they met has ever since been known as the Field of the Cloth of Gold.

NOTE ON NOMENCLATURE

It will be noticed that three specific names are quoted by authors from whom extracts have been made. In British waters, we have the one species, Pinna fragilis Pennant (= pectinata L and rudis L.). Nordsieck employs the specific name pectinata recognizing two subspecies, pectinata pectinata and pectinata truncata Philippi. He also lists two other species, Pinna nobilis L. and P. pernula Chemnitz which do not extend their ranges as far north as the British Isles, but both live in the Mediterranean region, and doubtless all three would have been used in the production of marine silk. According to Pelseneer (1935) one of the species, unspecified, can produce byssal threads 160 mm long.

ACKNOWLEDGMENT

My thanks are due to Mrs. Patricia Burton for her drawing of Pinna.

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Stella M. Turk

ROSELAND MARINE NATURE CONSERVATION AREA

Following the lead at Purbeck, Dorset, and at Wembury, Devon, efforts have been made to protect a particularly important section of the Fal Estuary in

Cornwall. In June, just under 100 local and national organisations and individuals with commercial, leisure, planning, educational and conservation interests in the estuary, were contacted and sent a map of the proposed area with notes on its importance and the reasons for the need for action; with the statement was a form on which recipients were asked to notify intention to attend a meeting in July, or invited to make any comments in lieu of attending. On July 6, 1982, 40 representatives of some of the organisations referred to above met in Truro, and the acting Roseland Marine Nature Conservation Group received the endorsement that it sought. It was agreed that the Conservation Area should be a purely voluntary one with no legal powers, and that its primary purpose would be informational. With this in view, a code of conduct will be prepared.

The Area encompasses all the estuary within tidal influence to the east of the shipping channel, from the mouth of the Fal to St. Just-in-Roseland. This includes St. Mawes Bank, unique in southern Britain for its bed of living rhodoliths (Phymatolithon calcareum) known in commerce as maërl or calcified seaweed, and Place Cove where there is a particularly rich assemblage of marine life in the very sheltered but fully marine conditions. Beds of Zostera or eel-grass, the inter-tidal extent of which has been reduced in recent years, occur within the designated area, and within the Conservation Area reefs show text-book zoning with good rock pools in places and plenty of weed cover, overhangs and niches for fauna. Nearer to St. Just-in-Roseland, the shores are covered with slate clutter which gives cover to a variety of species.

The aim of the Group is to prevent unwitting damage, such as is known to result from excessive bait-digging, trench transects dug by parties of students, and unnecessary over-collecting of specimens with destruction of habitats (not replacing overturned stones, etc.).

The Calcified Seaweed Company, which has a licence to dredge subfossil deposits of maërl on the Mylor side of the estuary, and Falmouth Harbour Commissioners (which own the fundus of all the Conservation Area except Percuil River, owned by the Duchy) are aware of the importance of the Bank. There is evidence, gleaned during recent exploratory dives, that anchors can damage both the living maërl and the Zostera, but as the Bank is used as a Water Ski area it is largely an exclusion zone for everything else. This particular reconciliation of commercial, leisure and conservation interests may have been fortuitous, but illustrates the manner in which a Conservation Group might help to resolve potentially conflicting usages.

Already littoral and sublittoral surveys are underway, organised by the University of Exeter, so that the present extent of the various communities can be mapped.

The Roseland Marine Nature Conservation Area Advisory Group has representatives from the University of Exeter, the Cornwall Naturalists' Trust, the Marine Biological Association U.K., and the Nature Conservancy Council, as well as other interested parties. Acknowledgment of its aims has been received from the National Trust, the Underwater Conservation Society, Porcupine, and the Conchological Society.

Further information can be obtained from the joint Project Co-ordinators: Mr. Roger Burrows, B.A., M.I.Biol., Staff Tutor in Natural History, Extra-Mural Dept., University of Exeter, 5 Walsingham Place, Truro, and Mrs. Stella M. Turk, M.Sc., Hon. Research Fellow, Extra-Mural Dept., University of Exeter, Shang-ri La, Reskadinnick, Camborne, or the Secretary to the Group, Miss Caroline Rigby, B.Sc., Conservation Officer, Cornwall Naturalists' Trust, Trelissick, Feock.

We had decided that I should take my 'Mini' over to Eire, because it was the smallest vehicle available and would therefore cost less to transport and also be less thirsty. A good thing as it turned out, as petrol was £2.20 per gallon. I left Luton in torrential rain and it seemed a very long, lonely journey by the M1 and M6 to Manchester to pick up Marjorie Fogan. A 'Mini' is very small when sandwiched between the enormous trucks that roar continuously up the motorways, spewing out large quantities of spray. The bright yellow of my clean car was almost unrecognisable by the time I ran into dry weather near Crewe. The ferry left Liverpool at 10.30 p.m. and we arrived in good time to embark. To my horror I was routed to the top deck up a ramp of about 60°, or so it seemed. Luckily I am not a nervous driver. If anyone stalled a car on that ramp and then panicked it could be nasty. Marjorie and I shared a cabin in the bowels of the ship. We quickly nipped up the various steep companionways and found the bar. A drink after such a long tiring day was most welcome. We were awakened at crack of dawn and disembarked at 7 a.m. To my horror I discovered when driving down the ramp that a tyre was completely flat; I must have picked up a wicked nail somewhere along the dock road. People in other cars pointed and shouted that I had a puncture, but one can't change a wheel in a queue of disembarking cars. I drove to the ferry carpark, where David Holyoak was waiting in his Land Rover, with Richard Preece. The wheel was soon changed, and the puncture was mended on the way to Cavan, while we stopped at Navan to start our long stint of recording.

In an effort to economise we decided to stay at Irish Tourist Board recommended guest houses. The first week was spent in Cavan, and we hit gold with respect to the guest house. The landlady was a first class cook, rare in Ireland. Her cooking was imaginative and plentiful and most welcome after long days in the field. The beds were comfortable and we were provided with hotwater bottles - a luxury we were to remember with longing after we left Cavan for the unknown. At Cavan we were joined by Helena Ross and Roy Anderson from Belfast, who brought another car. On the second day of their visit I drove Richard Preece to Dublin to catch a plane; he probably reached home before I got back to Cavan. Because of the high cost of petrol we decided that the squares furthest from our base would be covered by my 'Mini', a saving in cost but hard on the driver: I drove 1500 miles altogether. The Irish roads are not celebrated for their smoothness, and the surface has been damaged by last winter's snow and ice. The contour of most roads is typically rolling, and one just gets over the first crest and touches bottom when one is shot over the next hummock; add pot-holes and one has an uncomfortable combination.

The procedure during the week at Cavan was to split forces so as to cover as many 10Km squares as possible, David and Mary Sedden in the Land Rover, Marjorie, Richard and I in the 'Mini'. Richard did water, marsh and woodland, especially for tiny species, Marjorie took walls and verges, while my main job was to find slugs. We overlapped on some common species, but on the whole we provided different lists at each stop. We also collected 'wiggles' (ants, woodlice, centipedes, millepedes, harvestmen, beetles, bugs and false-scorpions) for Adrian Rundle, and lichens for Frances Davies, for the Lichen Society survey. I also collected molluscs for Derek to photograph, which we meant to post daily, but gave up after the first batch: postal charges were very high, the weather turned warmer, and the Easter holiday closed the postal service down for a considerable time, and a declaration form had to be filled in - live slugs were "a present of scientific specimens." All information we brought back will almost certainly be new 10Km records for most disciplines. Irish work isn't exactly world-shaking; it takes visiting foreigners to find out what is there. At the end of the first week we headed west to Ennis. There were several areas around there that needed attention, though our real reason for heading in that direction was to visit The Burren. The spring gentian was in flower and abundant, I don't think I have ever seen a more beautiful plant. To my delight we found maiden-hair ferns deep in damp cracks. Pomatias elegans lives in

the limestone pavement cracks, very near the sea. We went on round the coast and found a small lough, where Marjorie forecast Hydrobia ventrosa, correctly.

After a lovely day on The Burren we returned to our digs in Ennis. When we arrived the evening before we had sampled the landlady's evening meal menu. Not a memorable gastronomic experience: the mixed grill was godawful - lamb chops too tough to chew, egg, sausage and bacon, with the inevitable chips. We had all opted, unanimously and with feeling, at breakfast next morning that, as we might be late back from The Burren, it wouldn't be fair to expect the landlady to produce a meal at an unspecified time, so we had a passable meal at a restaurant. We were then faced with going back to very cold beds. The first night I put on socks and sweater. The second night David lent Marjorie and me sleeping-bags. How we missed the hotwater bottles at Cavan!

Cashel was our next stop, where beds and food were passable. Our aim was to work our way gradually east, to be within reach of Dublin and Rosslare. We paid a visit to Birr to get a few living Catinella arenaria to be photographed. Limax maculatus proved very photogenic; it is a very handsome animal. One turns over a log or piece of cardboard to find 10 to 20 huddled together; sometimes they are lying alongside each other, sometimes all jumbled up.

Another trip was to the river Nore at Durrow, where live and dead specimens of M. margaritifera var. durrovensis were collected. Here I had a spectacular fall. Climbing over a 5ft stone wall, a bramble snapped up and caught my toe, and I fell over the top on to a heap of chopped down, very knobbly ivy, lying on boulders amongst which grew stinging-nettles, on a steep slope leading down to the river. David and Mary were horrified to see me catapult over the wall and hurtle down the slope towards them. I had a few nasty cuts, and after I got home bruises appeared everywhere; one was also well stung.

The weather throughout our trip was marvellous, rather too dry towards the end so slug hunting became more difficult. The expedition was a great success on all fronts, with impressive lists of molluscs and plenty of other records.

Irish towns and villages are quite unique. Many still have the rows of one storey cottages, some in quite good order, attractive from the outside, but there is only a single room and no facilities. The roads in the villages and towns open into wide areas and give the impression of wide open spaces, of which the inhabitants take full advantage. They don't park their cars, they abandon them. Anywhere will do, at any angle, hence some villages are hazardous to negotiate; around pubs one finds a wild abandonment of cars and other vehicles, and as pubs are often at a corner or crossroads great caution is needed. No doubt this is part of the charm of Ireland! I've always found the Irish very charming and their country sheer delight.

Beryl Rands

COCHLICELLA ACUTA MULLER ON PEWLEY DOWN, SURREY

Pewley Downs consists of a stretch of open chalk downland on which the upper and middle chalk form gentle south-facing slopes, with a rich grassland flora, reaching to the south-east edge of Guildford. On 14th. August 1981, a number of specimens of a delightful small snail were discovered while searching for micro fungi at the bases of tussocks of grass (Fig. 1). Using the excellent Field Guide of Kerney and Cameron (1979) it was identified as Cochlicella acuta Müller, although this species was considered to have a very restricted coastal distribution. A further visit during the evening of 15th. September 1981 demonstrated that, not only was it present in large numbers, but that it was very active during this time of the day, for it was easy to find it climbing up the stalks of the grasses. They were sufficiently plentiful that it was possible to demonstrate the wide variation

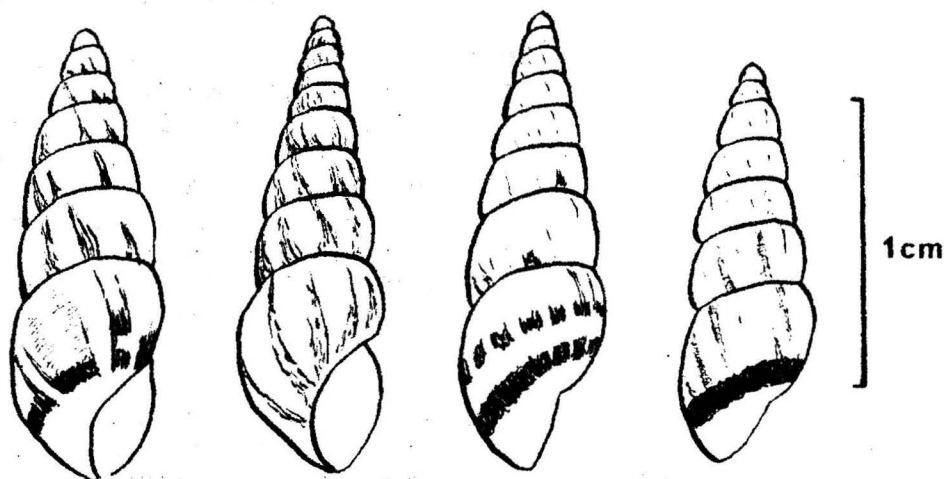


Figure 1 - Cochlicella acuta, Pewley Down, Guildford (TQ 006490)

in colouring and pattern in this species. Of 28 specimens examined, 10 had no clear brown markings, 8 had a single brown band around the base of the last whorl and 10 had a second interrupted band also on the last whorl.

Because this species is considered to be sensitive to harsh winters wherever it has been found on inland sites in Britain, Pewley Down was revisited on June 20th. 1982 when again numerous living specimens of *Cochlicella acuta* were found, despite the hard winter of 1981-82 when temperatures as low as -8°C were recorded in Shalford.

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THE OCCURRENCE OF PERFORATELLA (MONACHOIDES) RUBIGINOSA (SCHMIDT)

IN THE BRITISH ISLES

This is a preliminary report on the finding of an indigenous species of snail new to the British list within 15 km. of Piccadilly Circus, at Isleworth. A fuller account will be prepared in the future.

During June and July 1982, A. Cade of Norwood Hall Institute, Southall (with permission from His Grace the Duke of Northumberland), organised a series of four expeditions to the part of Syon Park which lies between Syon House and the river (TQ(51) 176766). The object was to make a survey and to report the results to the Nature Conservancy, concern having been shown over the effects any future change in the water level of the R. Thames due to flood control measures might have on the marshes in this area. The area concerned is an S.S.S.I. of some 55 acres and one of the last remaining fragments of relatively unmodified riverside vegetation beside the Thames in Greater London. Apart from tidal water meadows used for cattle

grazing there are areas of Glyceria swamp with Iris, Apium, Oenanthe, etc. and a belt nearer the river with many willow and poplar trees apart from other planted species. About 50 rather deep muddy ditches run down through the wooded area into the river; the actual bank of the river is dry and probably only flooded at unusually high tides but behind there are areas of wet mud and great quantities of debris, twigs, sticks, logs, old planks, rubbish, etc. kept damp but not flooded by high tides and kept shaded by willows, many of the trunks of which have fallen and lie on the muddy surface. Vegetation is sparse and includes Polygonum hydropiper, Rumex, Oenanthe crocata, Angelica archangelica, Senecio aquatica, Rorippa, Urtica dioica, etc., also the mosses Plagiomnium ellipticum (Brid.) Kop (said to be extinct in Middlesex) and Pohlia delicatula (Hedw.) Grout. Much of the area is extensively trampled by cows.

Whilst searching this area of mud during the second visit I collected a single specimen of a helicoid with its shell covered with mud and dismissed it as a Trichia; Dr. Rundle had also found the same species and thought it was T. plebeia. Knowing that there are in all probability several species confused under T. hispida and puzzled by the unlikely locality I preserved the specimen in spirit with the animal outstretched and sent it to Dr. L. Forcart in Basel who has paid special attention to the species of Trichia. I was surprised to receive his reply that the specimen was certainly not a Trichia but Perforatella rubiginosa (Schmidt) previously unrecorded for the British Isles. My nagging feeling that the shell did not look right was confirmed. I had always thought that a thorough national survey of Trichia would be interesting. Unfortunately I could not join the third visit but on the fourth I discovered that the species was quite common within a restricted habitat; all the specimens had a firm mud coating which is quite difficult to remove; the wettest areas of mud carried large numbers of Oxyloma pfeifferi and the Perforatella were restricted to slightly drier areas. The specimens I collected for deposition in the British Museum (Natural History) drowned very rapidly in water and must be in a tightly circumscribed habitat; possibly if the water is too high they attach themselves to floating debris and obviously they have survived thousands of years of erratic flooding. Other species in the area are Bithynia tentaculata, Valvata piscinalis, Carychium minimum*, Lymnaea truncatula*, L. palustris*, Anisus leucostoma*, A. vortex, Succinea putris, Oxyloma pfeifferi*, Vallonia pulchella*, V. excentrica, Discus rotundatus, Arion subfuscus, Zonitoides nitidus*, Vitrea crystallina*, Deroceras reticulatum*, D. laeve* and Pisidium personatum*, those marked with an asterisk being true denizens of the area, the others either washed in by the tides or occurring in the open marsh outside or in drier areas. The actual area I investigated is roughly halfway along the river-bank side of the S.S.S.I. about 20 ditches from the Isleworth end. Certainly it must occur throughout the area in suitable places and probably by many other parts of the river; also I believe it will be found in similar places by other rivers flowing out to the east coast. I believe Perforatella is one of many taxa which occurred along the Rhine and its former tributaries when Britain was united to the Continent of Europe (see Reid, 1913, fig. 4). Its distribution abroad is extensive but curiously restricted; in Europe it occurs along the Danube Valley and middle and lower Rhine Valley in Germany and also in the Rhine Valley in the Netherlands, perhaps Jutland, and in southern Sweden; further east it extends across Russia to Siberia. Kerney and Cameron (1979, map 234) map its W. European distribution. It is recorded from the Icenian Crag of Southwold, Suffolk (Harmer 1914, 11, pl. 1, fig. 8) (Kennard & Woodward 1899, 192, fig. 1). Since Harmer's monograph is not freely available I repeat his remarks "The shell from Southwold here figured is from the Wood Collection in the British Museum (Natural History) labelled Helix sp. It has been compared by Messrs. Kennard and B. B. Woodward with Recent specimens of H. rubiginosa and identified by them as of that species. They state it has not been recorded hitherto from this country either as living or fossil, although it has a wide range on the Continent."

I have dissected one of the specimens and confirmed Forcart's determination; the anatomy matches well the figure given by АНХАРЕВ & ПАММЕНБРОУЕР (1952, fig. 363). The shell is very similar to that of Trichia plebeia but lacks the

internal rib.

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POSTSCRIPT

Having been asked for living Perforatella I revisited the site on 3 September but could not find a single living adult. Juveniles with shells averaging 5-6 mm in width were very abundant and it is clear that the species is an annual and the adults die off sometime in July or August. During a visit to the Mollusca Department, British Museum (Natural History), F. C. Naggs who is studying Trichia in Britain tells me he found juveniles of what is clearly Perforatella together with Trichia by the R. Thames near Reading. I had intended publishing a paper in the Journal showing how Perforatella could be distinguished by shell and anatomy but have agreed to leave this to Mr. Naggs since he already has the work in hand.

B. Verdcourt

14th. EUROPEAN PHILIPS CONTEST FOR YOUNG SCIENTISTS AND INVENTORS

MAY 10 - 14, 1982

The highest award in the 14th. European Contest held at Eindhoven after the national contests in several countries of Western Europe was given to Mr. R.A. Bank (21), Haarlem, The Netherlands, for his exhibit 'Land Snails of North-East Italy'. Mr. Bank is a member of the Dutch Malacological Society. For the first time in the Contest's history a young man from The Netherlands has been honoured with the highest award Hfl. 6000,-.

The Jury of 10 professors of European Universities, the Director of Philips Research Laboratories and the Head of Scientific Department, Evoluon, Eindhoven, The Netherlands, accounted for this award with the next words printed on the Charter handed to Mr. Bank:

"In 1978 Ruud Bank started his research of the land snails and slugs of the Alps in the North-Eastern part of Italy. He studied the material present in various museums and private collections in The Netherlands, Germany and Italy. He visited the area in 1980 and 1981 and collected nearly 4.000 samples, including over 50.000 specimens. Moreover, he made a practically complete study of the very extensive literature related to the subject. His final conclusion is that the snail fauna of the area comprises about 285 species and subspecies. In his report of nearly 200 pages he gives a concise critical description of each of these types, discussing the synonyms, the necessary characteristics and other details, such as local variations in the shape and structure of the shells. Moreover, he presents distribution maps of all species. In the opinion of the Jury this investigation is of a high scientific standard. Without doubt it will be of great value, not only for our knowledge of this particular area, but also as a contribution to the European Invertebrate Survey, a huge international programme which started in 1970.

The Jury knows that this work is highly appreciated by other experts and that it most probably will be published in the scientific literature in the near future. Although Ruud Bank indicates his snail-activities as a 'hobby', according to the Jury he is to be considered a mature specialist."

The Council and members of the Conchological Society of Great Britain and Ireland present their congratulations to Mr. Ruud A. Bank and the Dutch Malacological Society for the honour bestowed upon one of their young members.

L. J. M. Butot

AN EXTENDED BOOK REVIEW - EDIBLE MOLLUSCS

The other day I received a book called "Molluscan Melange" How to prepare your molluscs for eating, by a Capt. Alex Roth Jr.. It came from the Aljemasu Enterprises, Tamuning, Guam. The first thing that I had to ask myself was "where on earth is Guam?" On looking it up in the atlas I found that instead of it being somewhere in the Caribbean as I suspected, it was in the Marianas just west of the Philippines, south of Japan and part of the Micronesian Archipelago.

The book is a paper-back with coloured front and back covers showing a number of marine molluscs, although most are beautifully coloured scallops, I'm sure used more for effect than for eating. Anyway since I have got inside the covers I can't put the book down. It is the most interesting, well organised comprehensive guide to edible molluscs that I have ever seen or laid my hands upon. To help the reader understand what the book is about I wish to quote some of the author's preface: "During the past fifty five years I've visited and lived in many of the countries of the world, most of the time being spent in the northern hemisphere. From childhood on I have always enjoyed eating the products of the sea, so that it really isn't too surprising that I started collecting recipes for preparing molluscs shortly after the end of World War II. At that time I was Master of ships travelling to South America, Europe and the Mediterranean as well as some of the Caribbean islands. Later on, I sailed around the Pacific and finally lived for a number of years in Japan, Korea and Okinawa and then retiring on beautiful Guam."

Alex Roth then discusses how he became interested in shells also and how he has so far collected some twenty thousand species. He continues "In Korea, Japan, Okinawa and Taiwan I combined my two hobbies of shell collecting and eating by visiting the sections of the local fish markets that sold molluscs and was able to purchase many interesting and unusual shells, with the dealers telling me how they prepared them for the table. In Micronesia and the other Pacific Islands, molluscan dishes have always had a place of honour on the table at the fiestas and native banquets. From the Marianas to the Marshalls, the older inhabitants still take great pride in their individual ways of preparing Octopus and Squid, as well as the various Conchs, Top shells and Tridacnas. I can still remember with a great deal of pleasure a bouillabaisse I enjoyed eating in 1958 on Amo Atoll, near Majuro in the Marshalls, that had a number of different shells in it, in addition to the various reef and deep water fish and assorted crustaceans." Alex then finishes his preface in a way that I totally agree with by saying "It never ceases to amaze me that tourists who spend many hundreds (and nowadays, thousands) of dollars to visit out-of-the-way places in the Far East and Pacific will refuse to eat local molluscan delicacies, but will relish such things as cornflakes or other so-called breakfast foods!"

Capt. Alex Roth's preface sums up the ethos of the book. It is a lifetime's collection of molluscan recipes, ranging from such exquisite delicacies as Ormer (Haliotis) and Scallops to such things as Sea Hares one of which is supposed to have caused a man to become bald and was therefore named "depilans" and even Cowries can be eaten. He begins the book with a table of contents that makes the mouth water

and mind boggle followed by some cautionary words to the reader about collecting their own molluscan ingredients from the seashore. This is followed by some 30 pages of illustrated (B/W line drawings) descriptions of all the edible species and families included in the book, finishing up by a brief summary and a table from Paul Bartsch on Molluscan Parasites - all, I'm glad to say, rendered harmless during cooking. The 'meat' of the book, some 100 pages and 350 recipes interspersed with useful comments, on cleaning, cooking and serving follows. As examples I give his recipe from Newfoundland for Moon Snails Vinaigrette which serves 6 people:-

2 to 3 dozen moon snails, one to two inches in diameter

1½ cups olive oil

1 tblsp. chopped parsley

½ tsp. oregano

1 small minced onion

6 to 8 black peppercorns

Scrub the moon snails carefully. Place them in a saucepan and cover them with slightly salted water and boil for about thirty minutes. Remove them from the heat, and when cool, remove the meat from the shells. Cut off the entrails and discard the operculum; tenderize by pounding, but don't mash the meat. Dice the meat. Mix the other ingredients, and soak the snail meat in it for three to four hours keeping it in the refrigerator while doing so. Serve it right in the marinade with tooth picks.

One can use cocktail sticks, of course and for those interested one can buy at Sainsbury's a bottle of similarly marinated mussels under the title of Mussel Salad produced in Denmark for 46p and an excellent 46p's worth they are especially with drinks before a meal on a hot evening.

My second recipe choice is for the Tridacna clam - Tridacna Teriyaki Rosso serving about 6 depending on the size of the clam!

6 Green onions, sliced thinly lengthwise

6 celery heart stalks, sliced thinly lengthwise

1 cup (crisp) spinach leaves or equivalent

1 tblsp. sugar

1 cup chicken stock

2 lbs. tridacna cut into pieces one inch square by ½ inch thick

1 leek, sliced lengthwise

2 tblsp. soy sauce

1 cup thin sliced mushrooms

2 tblsp. butter

4 tblsp. saki or dry sherry

In a large skillet heat the butter, and when bubbling add the chicken stock, saki, soy sauce, sugar and tridacna, and cook for about five minutes. Add the vegetables and cook for another five or six minutes, or until the clam is tender. In another form, the tridacna is sliced thinly, not in pieces and then prepared as above. Taro leaves can be used instead of spinach. After rinsing off the leaves, cut off the thick stem parts, then place the leaves on top of each other, and roll them into a bundle. With a sharp knife cut the roll into thin slices, and use as you would spinach.

Of course for us Europeans he includes large numbers of recipes for Mussels, Oysters, Razors, Scallops, Winkles, Whelks as well as including recipes for Chitons, Limpets, Octopus, Squids and various 'Clams' such as Donax, Mactra, Mya, Pholas and Venus. He gives very little information on our edible cockle although it can be used in many of the clam recipes given. In the last section of the book he gives recipes for various sauces to go with the shellfish or cook them in and an equivalent measurements table, followed by a section on species and in which countries worldwide they are eaten, finishing with an index unfortunately not cross-referenced.

Altogether a beautifully written book and one that anyone interested in eating molluscs from around the world should have in their kitchen and/or reference

library. It is a pity that such a fascinating and useful book has been produced so cheaply, i.e. printed on cheap paper, pinned together with two staples and has a cover that will not protect it against kitchen stains or normal wear and tear.

J. E. Llewellyn-Jones, 5/6/82

One can obtain a copy by writing to: Aljemasu Enterprises, P.O. Box 7867, Tamuning, Guam 96911, sending a cheque for £3.70 or the equivalent in dollars which comes to \$ 6.75.

REVIEWS

"Sea Shells of the Arabian Gulf" by Kathleen Smythe; 125 pages, 20 plates (8 coloured) - photographs, published by George Allen & Unwin Ltd., London, 1982. £9.95.

Any collector of tropical marine shells is only too well aware of those areas around the world which have no easily available, up-to-date literature on their interests; West Africa, The Red Sea, India, Malaya, Indonesia, The Arabian Sea and Arabian Gulf. The publication of this book by Kathy Smythe is therefore most welcome.

Published by George Allen & Unwin in their series on "The Natural History of the Arabian Gulf", it is approximately 20cm. x 13cm. and has 125 pages in a hard cover. The end-papers/maps of the Gulf (how many, many books of all kinds are marred by the lack of a map!). There are twenty plates, photographs, eight of which are in colour, the others in black and white, each illustrating from one to a dozen shells, and there are a few line drawings in the text. There is a list of contents, a list of illustrations, five pages devoted to a glossary, then fourteen of 'Introduction' which has sub-headings 'The Arabian Gulf', 'Classes of Molluscs', 'Nomenclature', 'Collecting Seashells', 'Recording', 'Cleaning Seashells', 'Storage of a collection', and 'Identification'. The following 82 pages are devoted to 'Descriptions of Species' covering all classes of Molluscs. The author acknowledges that not all the shells found in the Gulf are included; some in her own collection appear to be undescribed species and are not included. The more common shells are however all there. Finally there is a page of Bibliography, five of Index and half a dozen blank pages for notes - a sensible idea in such a book.

The descriptions are of necessity short, but they are good and the names include the date of publication, for which the author is to be congratulated; dates so often are lacking in popular shell books these days. There is a short description of the main characteristics of each molluscan family mentioned. The plates are in groups of 4, 4, 8 (coloured) and 4; they are good and each illustrates from one to twelve shells, a total of some 150 species of the 330 odd mentioned in the text.

This book is not the Arabian Gulf equivalent of Myra Keen's book on Tropical West America or Alison Kay's on Hawaii, but it is not intended to be such. It is meant to help those who are interested in shells from the Arabian Gulf on identification problems, and I believe does so very well. The price of £9.95 seems to me to be very reasonable and I would recommend it to anyone whose interest covers shells of The Gulf. To anyone lucky enough to be able to collect in the Gulf him- or herself it must be essential.

Peter Oliver

"Saudi Arabian Seashells" by Doreen P. Sharabati. Published by VNU Books International, 1981. 120 pp. Price ?£16, ?distributed by Godfrey Cave.

Until recently, so little literature has been available on the marine Mollusca of the Red Sea and the Arabian Gulf that any book which adds to our knowledge of

the subject is more than welcome. Having said this, it should be made clear at the outset that the main purpose of this volume is not to assist in the identification of Saudi Arabian seashells, but rather to give the reader a good insight into the natural habitats of the molluscs to be found there, highlighting those species which are most likely to attract attention and using the illustrations to stimulate the interest and create a desire to learn more about the whole field of malacology.

The first section of the book deals with the geography of the Arabian Peninsula, and an excellent map shows the position of Saudi Arabia in relation to all the neighbouring countries. The various localities mentioned in the book are clearly marked. Such interesting details as temperature of the water, winds, currents and types of coral reef in the adjacent seas are given in the text, and contribute to building up a complete picture of the whole area.

The second section consists of an introduction to the study of marine molluscs in general - their general biology, fossil history, classification, reproduction, larval stages, locomotion, feeding habits and protective mechanisms. The various tidal zones and types of sea-bottom are described, as is also the complex nature of the coral reef. Finally, and this time with special reference to the Middle East, the author tells at length of the uses which man has made of shells or the molluscs which create them, from the time of the Ancient Egyptians to the present day. This part of the book is of particular interest, and contains much information about pearls and mother-of-pearl.

It is not until the third portion of the volume is reached, consisting of only about 40 pages, half of which are taken up with the illustrations, that the reader who wishes to learn about the local Mollusca in this region will find much satisfaction. Even then, the first half-dozen pages are devoted to the types of habitat and the way in which shells are affected by their immediate environment. There follows a section on Red Sea molluscs and another similar one on Arabian Gulf molluscs. The treatment is mainly ecological, and shows a good knowledge of which species occur in the various portions of the coral reefs or on the various types of sea bottom. A glossary of molluscan terms, a good bibliography and an excellent index complete the volume. In the index, scientific names are in italics and the author's name is given for each species, but there are no dates. It is also a pity that references in the index to the plates were not printed in bolder type than references to mentions in the text.

It is obviously impracticable to illustrate every species referred to in the text in such a book, but to someone in this country without a good general collection of shells for reference, or a well-illustrated reference book, it means little to read that 'the inshore whelk Engina mendicaria is replaced beyond 35 meters by Columbella testudinaria' when not a single Engina or Columbella is depicted in the volume. However, to a collector visiting, or resident in, Saudi Arabia the observation may well be very interesting and helpful. The advanced collector will get much more enjoyment from the text than the beginner, since the Latin names will conjure up a picture of the shell in cases where no illustration is provided.

Few spelling errors were noted, but among them were 'mackarel' for 'mackerel' on p.46, 'achatinus' for 'achatinus' on p.68, 'Teribridae' for 'Terebridae' and 'sublata' for 'subulata' on p.73 and 'cayrica' for 'caurica' on p.79.

Much of the photography is of a high standard, and the colour reproduction is excellent. Many living molluscs, including some Nudibranchs, are illustrated, but it is a pity that the 'touching up' of the plates on p.29 is so obvious. Some groups of shells are depicted against a natural background though the arrangement looks far from natural. Where individual shells are shown, portions of the shells have been excluded from the photographs in many cases, because the camera has been so close to the subject. The caption to the plate on p.68 is misleading; it should read 'Clockwise from the upper left' instead of 'upper right'. On p.81, however, it would have been helpful if the words 'from the upper right' had been inserted after

'Clockwise'. Although the 'Chambered shell Nautilus' is mentioned twice, on pages 40 and 42, there is no illustration of this unique genus, which would seem to be an unfortunate omission.

As a general introduction to the study of marine Mollusca, this book has much to recommend it. It also gives the reader a good idea of the unique environment inhabited by the Saudi Arabian molluscs in the Red Sea and the Arabian Gulf, and describes their habitats, their inter-relations with other marine organisms and, in some cases, their behaviour where feeding, locomotion and other activities are concerned. To the shell-collector who does not intend to visit the Middle East, however, and who is chiefly interested in the shells rather than the molluscs which created them, this book will have little appeal. Nevertheless, despite the comparatively small number of species described and illustrated, it does fill a gap in the literature of the region, and is valuable for the wealth of 'background information' it provides.

R. P. Scase

Editor's Note: Determined efforts to establish the price, the distributors in England and where it can actually be purchased, have proved most frustrating!

ABALONE AQUACULTURE DEVELOPING IN U.S.

Aquaculture techniques for abalone are being developed in California in the face of falling catches. A recent issue of the University of California's Marine Advisory Programs Newsletter reported that a decline in the natural fishery has promoted the concept of abalone aquaculture both to harvest at adult sizes and to 'seed' overfished grounds to help maintain the existing fishery. (Abalone production in California has fallen from about 2700 tonnes in 1969 to less than 450 t in 1980.) The Newsletter reports that interest in abalone aquaculture has increased in the last 10 years, and the concept is being explored by industry, the California Department of Fish and Game, and various universities. The Department of Fish and Game established the Granite Canyon Marine Laboratory, south of Monterey, with a major goal to study abalone biology and culture. Major university research in abalone culture has been funded through the California Sea Grant Program and conducted at the University of California at Santa Barbara and San Diego State University. These various research programs are addressing problems associated with the biology and culture of California abalone, enhancing culture technology, and testing the feasibility of re-seeding state waters with young abalone.

The largest commitments to abalone culture are being made by privately-financed companies developing abalone culture technology at sites along the central California coast. Various growout methods are being tested for both offshore and land-based operations. Although most growout systems are in the experimental or pilot phase, hatchery technology has been successfully developed by the Japanese and modified by innovative California growers.

The red abalone, Haliotis rufescens and the pink abalone, H. corrugata, are the more highly prized species in the food market and among abalone growers. Because of their high market value, populations of these species have declined drastically. Other abalone that appear less frequently on the market but interest abalone growers are the black and the green abalone, H. cracherodii and H. fulgens. Abalone growers are culturing all these species and are experimenting with the white abalone, H. sorenseni and the threaded abalone, H. assimilis.

After approximately six months in the hatchery, juvenile abalone at approximately 1.2 to 2.5 cm are ready for stocking in coastal waters as part of a fisheries enhancement program or placing in growout systems until ready for market.

Offshore growers culture abalone in habitats or cages attached to buoys suspended from oil platforms or anchored to the sea floor. A major advantage of offshore culture is the great potential for high-volume production since the grower is not limited by the prohibitive cost of coastal land, energy costs of pumping and temperature control, and nearshore pollution. Disadvantages include wave damage, transport cost, and accessibility for maintenance or feeding. Land-based operations use tanks or raceways. Higher costs for land, energy and buildings are compensated by easier access for maintenance, feeding, and greater environmental control. Abalone growers are developing and testing growout systems to obtain designs that allow high density and ease of amintenance, yet do not retard growth. At present, it takes three-and-a-half to five years to grow a 100 to 125 mm abalone, and work is being attempted to reduce this growing period. The U.S. abalone market has been established around the 15.2 to 17.8 cm pink and red abalone. This is not economically feasible or practical for aquaculture at this time. Commercial growers are targeting for a 5 to 10 cm product which will be marketed in California restaurants.

The Department of Fish and Game is working with the industry to establish regulations that will allow identifiable 'undersized abalone' produced by aquaculture to be marketed. The small, edible abalone and seed for fisheries enhancement programs are both important markets to the abalone growers. Although abalone aquaculture is still undergoing research and development, products are now becoming available and abalone aquaculture remains one of the most promising marine aquaculture investments for the future, the Newsletter says.

(From 'Australian Fisheries', February 1982 - submitted by Betty M. Smith)

GENERAL NOTES

ANNUAL SUBSCRIPTIONS, 1983

Dear Members,

Please remember that your Annual Subscriptions are due on 1st. January 1983. Rates are given below.

Please check that all Bankers' Orders are for the correct amounts. A number of you have not yet paid the balance due on 1982 Subscriptions. We regret that the Journal of Conchology, Vol. 31, Part 2, will not be sent to you until the outstanding arrears have been paid.

All cheques and Postal Orders should be payable to the Society and sent to me. Receipts will not be sent unless requested, and each request must be accompanied by a stamped addressed envelope.

Are you covenanting your Subscription? If not, please consider doing this - there is no extra cost to you, and it is a great benefit to the Society. I can supply particulars and forms of Covenant.

Marjorie Fogan (Hon. Treasurer)

██████████, Atherton, Manchester, ██████████

Ordinary Member	£10.00	(U.S. \$25.00)
Family Members	£12.00	(U.S. \$30.00)
Junior Member	£ 2.00	(U.S. \$ 5.00)
Institutional Member	£15.00	(U.S. \$37.50)

FOOTPATH MAPS FOR SELBORNE

Selborne is a locality rich in land Mollusca that has been described in an earlier edition of The Conchologist's Newsletter following a joint meeting of the Society there with the Malacological Society in 1980. There are many footpaths in

Selborne around the Hanger (easy to get lost there, as I have done with a group in tow!) and also through the Short and Long Lythes with some damp ground around the junction of the Upper Greensand with the Gault Clay. The Selborne branch of the National Trust has now produced a folded card which gives details of footpaths on the extensive National Trust land in Selborne. This covers Gilbert White's zig-zag path up Selborne Hanger, Selborne Common and the woodland of the Short and Long Lythes (= Saxon for steep slope). Copies of this leaflet are available at 28p each inclusive of postage and packing, but if more than one copy, up to five is ordered, please enclose an extra 15p for each additional copy. Leaflets from:- The Curator, The Gilbert White Museum, The Wakes, Selborne, Alton, Hampshire, GU34 3JH.

THROUGH SOUTHERN MEXICO, being an Account of The Travels of a Naturalist, by Hans Gadaw, Witherby & Co., 1908

Chapter 21, p. 433, Pacific Coast

"The rocks were studded with *Purpura patula*, the same kind of shell which at Tehuantepec is used for its purple dye. Ten full-grown snails yielded on an average 40 cc. of juice, which, as secreted by the glands, is an opaque white - with an opalescent tinge; when mixed with sea-water it turns to a pale sea-green, and this is also the colour of the live shell, which sticks to the rock like a limpet. On exposure to the air for several hours, the fluid assumes its famous purple tint, and this is quite fast. We dyed a whole handkerchief by soaking it in water with the juice of two snails. At first it was a sickly green, but by the following morning it was purple, and it has retained its colour ever since, after several washings. The pure juice, kept in a corked bottle, is now, after three years, still of the colour of purple ink, and has not gone bad, but retains its dyeing properties. Consequently, this lovely stuff might well be collected and exported, if it were not for the cheap and nasty aniline dyes which are driving out the much warmer-tinted native products. What is the use of this juice to the mollusc? It is true that it colours the shell grey-green like the algae-covered rocks, but this can hardly be an advantage to the creature which at the slightest alarm, sucks till it adheres so firmly that it can only be dislodged by a sudden, sidelong blow. At any rate, the lovely purple is a purely incidental effect, only the dead, stranded shells being of this colour."

Betty M. Smith

THE SHELL COLLECTION OF GARY WHITFIELD

Shell collections are of so many kinds and gathered in many different ways. To one, the collection is all-important, well typified by one collector who told me "I like to take a couple of hundred specimens and pick the dozen best for my collection", while others purchase to increase their collections. To such, the collection was the important thing, not the data which should accompany the specimens.

Some refused to include immature or juvenile specimens (honourable exceptions to this were J. T. Marshall, R. Winckworth and A. W. Stelfox).

Seldom does a museum receive a collection such as that presented in 1972 to Merseyside County Museums by Gary Whitfield, a member of the Conchological Society and now living on the opposite side of the world. This large collection is of British land and freshwater species, collected almost entirely in the rather grimy and unpromising environment around Warrington, south Lancashire. It was made between 1966 and 1972 and forms the material upon which his careful records are based. His record-books were also presented and the specimens upon which EVERY record is based appear to be present (judging from a spot-check). Young, fragmentary, worn "dead" shells, all are there, with details as to habitat, 10-fig. grid reference, vice-county and date.

This material, with his record-books, forms a fine base-line for any future work on the molluscan fauna of the area, and especially for studies of changes in the fauna.

Nora F. McMillan
Merseyside County Museums, Liverpool, 18 March 1982

FIN AND TONIC

Sir, - In a recent review several home substitutes for doctors' medicine were given an airing, and those for cod-liver oil were specifically mentioned.

In the Health Journal, September 1886, which I believe was a Manchester publication, we have a remedy for consumption: water, 2 quarts, Spanish liquorice, $\frac{1}{4}$ lb., Garden slugs, 1 lb., Senna leaves, 3 oz.; boil all together for three hours, strain and bottle for use; a wineglass fasting.

For cod-liver oil, alleged to produce "the beautifullest cod-liver oil ever you did see" take "caterpillars and slugs, a good handful; put in two quarts of water, shake it well and put in bottles lightly corked; place on a dust-heap for a month or five weeks. You will then have a cod-liver oil that will do you much more good than the refined, clear sort sold at chemists."

One shudders, but as it is not unknown for modern scientists to find real worth in products used over past centuries, dare one suggest that we stop putting slug bait out in our gardens and actually harvest this creepy population with a view to laboratory testing? After all, "what Manchester thinks today"

Mary Turner, Levenshulme, Manchester

(Letters to the Editor, Guardian 23.8.82)

OCYPUS OLENS MUELLER PREYING ON TESTACELLA MAUGEI FERUSSAC

Since my note in Conchologists' Newsletter 77: pp. 319, describing the beetle Ocypus olens Mueller preying on Candidula intersecta (Poiret), I have observed this beetle feeding on yet another mollusc, Testacella maugei Ferussac. In November 1981 at St. Ives, Cornwall, I disturbed an adult beetle on a lawn carrying a slug in its mouth, which it eventually dropped while making its escape. Examination showed that the slug was a juvenile T. maugei, approximately 1.2cm in length. The internal parts had been almost entirely eaten out through a small cavity mid-way along one side of the body, which was just large enough for the beetle's head to probe through. The skin had not been eaten and remained intact. That the slug had been attacked from the side suggests either that it had been captured while exposed on the surface, which is unusual for this species, or, as O. olens burrows in friable soil, that the beetle had hunted and attacked its prey end on in the narrow tunnels below ground, dragging the slug to the surface to eat it.

John Humphreys

SUE WELLS, INTERNATIONAL TRADE IN ORNAMENTAL SHELLS, 22 pages. World Wildlife Fund UK., 11-13 Ockford Road, Godalming, GU7 1QU. Price £1, including postage and packing. See also "Coral and shells in great demand", World Wildlife News, Winter 1981/82, p. 9.

A.E.E.

WANTED URGENTLY

The following parts of the Journal of Conchology are urgently required by Adrian Norris, Natural History Dept., City Museum, Municipal Buildings, Leeds, LS1 3AA; Vol. 26, parts 1 & 2, Vol. 27, parts 1 & 3, Vol. 29, part 3, cover price

will be paid. Also part or complete runs of the Journal, according to price to be negotiated with the Treasurer.

NEW PUBLICATION

'Compendium of Seashells', an authoritative guide to over 4000 marine shells of the World in color, by R. Tucker Abbott and S. Peter Dance, every species is illustrated with its own separate color plate, with all the important data at hand, immediately below it. \$50. For United Kingdom customers - autographed copies may be ordered by sending your order to S. Peter Dance, [REDACTED], Hay-on-Wye, Powys, [REDACTED]. Payment to S. Peter Dance, £29.00 plus £1.00 postage (total £30.00). Kindly allow sufficient time for the order to reach Dr. Abbott for his signature, and the book to reach Britain by surface mail.

ASSISTANCE PLEASE

Conchological Society member intends to take shell-collecting holiday somewhere in the tropics (probably the Indian Ocean or Caribbean) in 1983/84. Would be grateful to hear from anyone who could give details of good collecting spots, accommodation, etc.. Would also be interested in sharing such a holiday with other Conchological Society members. Please write to: C. J. Chibnall, [REDACTED], Welwyn Garden City, Herts. Telephone: [REDACTED].

WILDLIFE MAGAZINE - AN OFFER TO CONCHOLOGICAL SOCIETY MEMBERS

'Wildlife', a monthly devoted to all aspects of natural history and conservation, offers this Society a donation of £1.50 for each member who subscribes for 12 issues - £11.50 - stating that they are members of the Conchological Society. Address: 100 Great Portland Street, London, W1N 5PD.

CHRISTMAS 1982

The Newsletter Editor sends the Season's Greetings and Best Wishes for the New Year to every reader.

In 1983 I look forward to receiving many more articles, notes and news items, short or long. Line drawings and maps are welcome provided that they are clear and simple to suit the limitations of the Newsletter reproduction. Remember, send your contributions to the NEW address!

P. E. Negus

FOR SALE

We are suppliers of tropical sea shells, land snails, coral and sea curios to collectors, schools and colleges. S.A.E. for lists. Nature of the World, 19 Bell Lane, Fetcham, Leatherhead, Surrey.

FOR SALE

We have a LARGE STOCK on CONCHOLOGICAL journals and books. Please send your wants or your offers if you want to sell to: ELSEVIER ANTIQUARIAN DEPARTMENT, General Manager Dieter Schierenberg, 4 Lippijnstraat, Amsterdam, Netherlands. Telephone: 20 - 861541.

THANK YOU, "A.E.E."

In May 1982, the following correspondence passed between Stella Turk, on behalf of the Council of the Conchological Society, and Arthur Ellis ("A.E.E.")

19th. May 1982

Dear "A.E.E.",

I have been asked to express the gratitude of the Council and membership of the Conchological Society for your long labours on the indices of the Society's publications.

Like myself, I suspect that all our members will realize the immense value of this indexing, and as more students are attracted to the Mollusca, so the silent thanks of hosts of non-members may be wordlessly extended to you over the years. Indices, by their nature, are generally untouched by the ephemeral character of so much of what they index.

With all best wishes
Yours very sincerely
Stella Turk (President)

The choice of one of your father's drawings seems appropriate as a mark of the esteem and gratitude of the Society for so much work over so many years on so many words to compile these indices.

Dear Stella,

I am quite overwhelmed by the card, so entirely unexpected. Mr. Negus had already thanked me for indexing the Newsletter, and I never gave it a thought. I enjoy the 'work' if one can call it that, and it is the only way I can assist the Society these days. I suppose that the picture is an enlarged photocopy of either the original, now in the Archives at Leeds, or the copy in your possession, as there are no others (there was a third, the proofs, at the British Museum (Nat.Hist.), but that was lost)... I don't know how to thank the members who kindly signed; perhaps you might convey my appreciation at the next meeting for the much-cherished card.

Yours as ever,
"A.E.E."

Short biographical note

Mr. Ellis who was 80 on 1st. October 1982, has been a member of the Conchological Society since he was 21, in 1923 (and an Honorary Member since 1976) twinning with Dr. B. Prashad of Dehra Dun for longest membership of the Society. He was President 1941 & 1942; Non-marine Recorder 1948-1961; Editor 1948-1965; and Curator in 1964. Apart from his direct contribution to conchological literature (British snails in 1926, re-issued as a facsimile edition in 1969, British freshwater bivalve Mollusca in 1978, two Papers for Students and numerous papers and notes in the Journal and Newsletter) he continues to make indirect contributions by giving ready and generous help and providing inspiration for the researches of innumerable conchologists. His experience as biology teacher, classicist, botanist, general naturalist, artist and writer (he specialises in stories of the supernatural) combined with his wry, dry wit, together with an exactness as well as a contemplative turn of mind and not least a capacity for work, have enabled him to give from such a rich store, much informed help and wise counsel to many of us, leaving us his debtor in incalculable ways.

So THANK YOU "A.E.E."

S.M.T.

IRISH LAND AND FRESH-WATER MOLLUSCA

The Ulster Museum is shortly to produce a catalogue of its collection of land and fresh-water Mollusca. This will also include a history of the collection with index of British and Irish collectors, lists of land and fresh-water mollusca, distribution maps for Ireland with habitat notes, and an Irish bibliography. The price is not yet determined but is likely to be in the region of £5.

Some copies can be made available to Members of the Conchological Society, but must be ordered in advance. If you are interested please write at once to Mrs. M. Fogan, [REDACTED], Atherton, Manchester, [REDACTED]

Duplicated by: SPEEDWELL PRESS, Trap Road, Guilden Morden, Royston, Herts.

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March 1983

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"AND BLEW HIS CONCH ..." (TURBINELLA PYRUM (XANCUS PYRUM) SACRED CHANK OF INDIA

The naming of objects can be traced back into dimmest antiquity. Its origin must be sought in the animistic belief that "dead" things as well as "live" ones may be inhabited by spirits or even have a "personality" of their own. King Arthur's sword Excalibur, Roland's horn Oliphant and Thor's hammer Mjölhnir are just a few examples which readily come to mind. Ancient mythologies are full in particular of

weapons which possessed magical powers by which they gained a supreme individuality. In fact, anything with which Man establishes a personal relationship is honoured by elevation to the human level and given a NAME: horses, cows, pigs, birds, dogs, cats, ships, planes, cars, and whatever else one can think of; by a special relationship or by a unique quality they are lifted out of a mass of similar objects by a name which usually refers to an outstanding characteristic, in the case of weapons invariably invincibility. Everybody will be able to recall cars, ships and other "anthropomorphised" objects, but few may have heard of shells with names of great magnificence and fame.



VISHNU

The shells I am thinking of are mentioned in one of the world's oldest epics, the Indian "Mahabharata". This poem must be one of the longest pieces of ancient literature and a monument to the miracle of Man's powers of memory. In its English translation it consists of ten sizeable volumes!

Its literary origin is dated to the fifth century B.C., but the events it describes may have taken place a thousand years earlier, possibly around 1400 B.C.

The place of action is the field of Kuru (Kurukshetra, near Delhi) which is about to be turned into a bloody battlefield. The two opposing armies are the friends and followers of two closely related families, the Pandavas and the Kauravas. Arjuna, the leader of the five Pandava brothers, is fighting for the restitution of his kingdom, usurped by the Kauravas. When both armies are in position the battle begins with an almighty noise, the sound of which has been carried across the centuries every time the first chapter of the BHAGAVADGITA has

been and is being recited:

"At this the heroic grandsire, the grand old man of the Kurus, gave a loud lion's roar and blew his conch to hearten Duryodhana.

Thereupon, conches, drums, cymbals and trumpets were sounded all at once. Terrific was the noise.

Then Madhava and Pandava, standing in their great chariot yoked with white steeds, blew their divine conches.

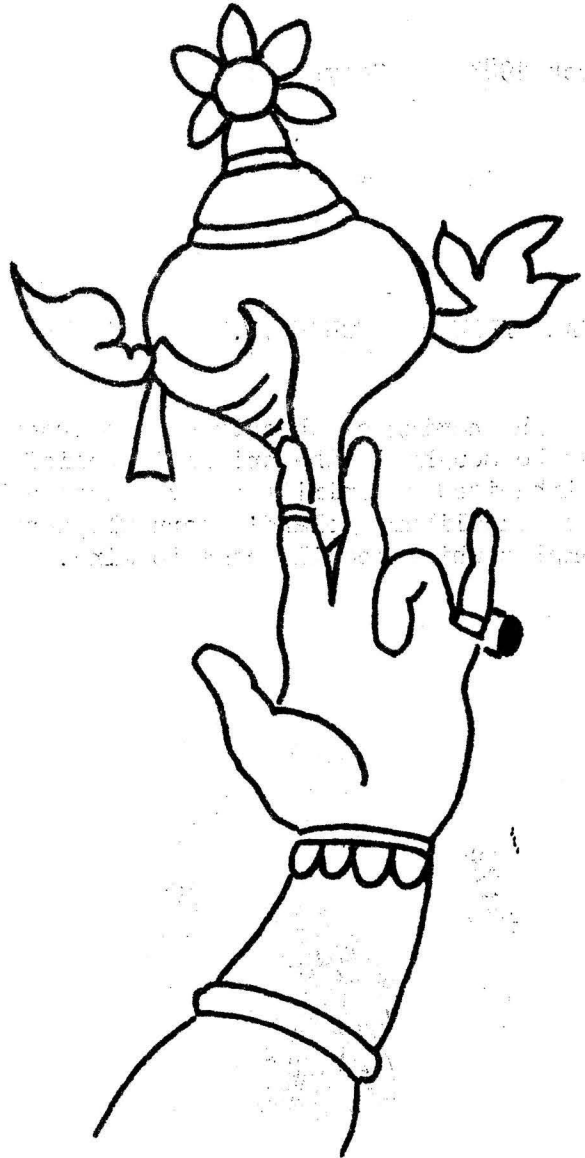
Hrishikesha blew the PANCHAJANYA (Demon's-conch) and Dhananjaya the DHANAJAYA (= Godgiven), while the wolf-bellied Bhima of dread deeds sounded his great conch PAUNDRA (= ?).

King Yudhishtira, Kunti's son, blew the ANANTAVIJAYA (= Victory conch) and Nakula and Sahadeva their conches SUGHOSHA (= Tone-rich) and MANIPUSHPAKA (= Loudly resounding and



SURYA RIDING IN HIS CHARIOT
(From Moor's Hindu Pantheon)

(From: The Gita According to Gandhi, Ch. 1, slokas 12-19).



adorned with pearls).

Drupada, Draupadi's sons, and the strong-armed son of Subhadra, all these, o king, blew each his own conch.

That terrifying tumult, causing earth and heaven to resound, rent the hearts of Dhritarashtra's sons (= the bad and greedy cousins)."

Fred Pinni

SOME MARINE MOLLUSCS FROM CRETE

In April 1981 we took our family holiday in Crete, the southernmost part of Europe. It is a beautiful island, and being largely limestone is very rich in molluscs, both terrestrial and marine. Before going to Crete it proved almost impossible to find out anything about the molluscan fauna, and these notes are written in the hope that they may give future visitors some idea of what to expect.

All the specimens mentioned here were collected from the beach at Limin Hersonisou, which is on the north coast about 15 miles east of Heraklion, the chief town. The sandy beaches there yield few traces of molluscs, no doubt partly because there is little or no tide to wash them up. Nearly all the specimens were, in fact, collected from a small rocky area on the beach, which contained many rockpools and crevices.

The list calls for only a few comments. Among the bivalves, members of the Arcidae produced most shells. Of the gastropods, Haliotis, Patella and the Gibbula species were reasonably common, but the most numerous shells were the strikingly coloured ones of Columbella rustica and Conus ventricosus (= C. mediterraneus). Shells of both species were much favoured by small bright red hermit crabs, possibly Eupagurus anachoretus. One could collect piles of apparently empty shells, but in a minute or two out would come the little red legs and the shells would scuttle away back to the water. We found several specimens of Dentalium, and cuttlebones from both species of Sepia were washed up all along the shores (although few of them were in good condition). We only saw one live cuttlefish, however, a specimen of S. officinalis swimming in the harbour.

I am especially grateful to Mr. D. Heppell of the Royal Scottish Museum, Edinburgh, for his help in identifying most of the specimens, and giving them their correct names.

MARINE MOLLUSCS FROM LIMIN HERSONISOU, CRETE. APRIL 1981

Bivalvia

Arcidae:	<u>Arca noae</u>
	<u>Barbatia barbata</u>
	<u>Striarca lactea</u>
Anomiidae:	<u>Monia patelliiformis</u>
Mytilidae:	<u>Lithophaga lithophaga</u>
Lucinidae:	<u>Ctena decussata</u>
Cardiidae:	<u>Papillicardium papillosum</u>
Carditidae:	<u>Cardita calycula</u>
Chamidae:	<u>Chama gryphoides</u>
Veneridae:	<u>Venus verrucosa</u>
	<u>Venerupis aurea</u>
	<u>Venerupis geographila</u>

Gastropoda

Haliotidae:	<u>Haliotis lamellosa</u>
Fissurellidae:	<u>?Diodora sp.</u>
Patellidae:	<u>Patella coerulea</u>
Trochidae:	<u>Gibbula adansoni</u>
	<u>Gibbula ?ardens</u>
	<u>Gibbula philberti?</u>
	<u>Gibbula richardi</u>
	<u>Monodonta turbinata</u>
Turbinidae:	<u>Tricolia pullus</u>
Rissoidae:	One unidentified species

Cerithiidae:	<u>Bittium reticulatum</u>
	<u>Cerithium rupestre</u>
Muricidae:	<u>Phyllonotus trunculus</u>
Buccinidae:	<u>Cantharus d'orbignyi</u>
Conidae:	<u>Conus ventricosus</u>
Columbellidae:	<u>Columbella rustica</u>
	<u>Mitrella scripta</u>
Mitridae:	<u>Mitra ebenus</u>
	<u>?Pusia tricolor</u>
Vermetidae:	<u>Lemintina arenaria</u>
Scaphopoda	
Dentaliidae:	<u>Dentalium vulgare</u>
Cephalopoda	
Sepiidae:	<u>Sepia officinalis</u>
	<u>Sepia elegans</u>

A. T. Sumner

SOME TERRESTRIAL MOLLUSCS FROM CRETE

During the same holiday in April 1981, the opportunity was taken to collect land shells from the various localities shown on the map. Some species (e.g. Helix aspersa) could easily be identified without collecting them, while slugs could not be collected as I had no means of preserving them. Shells are abundant almost everywhere on the island, no doubt because it is largely limestone.

The list of species found calls for a few comments. Four species were particularly common: Clausilia corrugata, Helicella virgata, Eobania vermiculata and Helix aspersa. C. corrugata was present in thousands on the ruins of the Minoan palace at Knossos; Ing. L. J. M. Butot believes that this species should probably be called Albinaria inflata draparnaudi. All the specimens of Helicella found appeared to belong to H. virgata, although very variable in appearance. Ing. L. J. M. Butot suggests that the Pleurodiscus sp. is almost certainly P. sudensis, while Monacha cantiana does not occur in Greece. There are clearly some uncertainties in identifying species from an area so poorly studied yet so rich in molluscs.

Even during the first half of April the weather in Crete is largely very hot, dry and sunny. It was therefore surprising to find both slugs and snails active in full sun late into the morning. No doubt they are more used to a hot dry climate, but one might have expected them to restrict their activities to the night, and find shelter from the sun early in the day.

I am especially grateful to Mr. D. Heppell of the Royal Scottish Museum, Edinburgh, for his help in identifying the specimens. I should also like to thank Dr. E. Gittenberger of the Rijksmuseum van Natuurlijke Historie, Leiden, for identifying the two Mastus species, and Ing. L. J. M. Butot of Bilthoven, the Netherlands, for his helpful comments (although he has not seen the actual specimens).

See page 63 for the map showing the localities, and the list of species found.

A. T. Sumner



TERRESTRIAL MOLLUSCS FROM CRETE, APRIL 1981

PLACE	LIMIN HERSONISOU	HILLS BEHIND HERSONISOS	HERAKLION	KNOSSOS	GORTYNA	PHAESTOS/ AGHIA TRIADA	MATALA	MALIA	LASSITHI PLAIN	GOURNIA
DATE	3-15/4	7/4	4/4	6/4	8/4	8/4	8/4	10/4	11/4	13/4
Pleurodiscidae										
Pleurodiscus sp.				+						
Enidae										
Mastus pupa cretensis		+		+					+	
Mastus olivaceus		+								
Zonitidae										
Oxychilus spp.	+					+				+
Milacidae										
Milax sp.				+						
Subulinidae										
Rumina decollata	+									
Clausiliidae										
Clausilia corrugata	+	+	+	+	+			+		+
Clausilia sp.									+	
Helicidae										
Cernuella virgata	+	+		+	+	+	+	+	+	+
Monacha ?cantiana									+	
Monacha syriaca				+						
Trichia sp.		+								
Theba pisana				?	+	+	+	+		
Eobania vermiculata	+		+	+	+	+	+	+	+	+
Helix aperta	+			+						
Helix aspersa	+	+	+	+	+	+		+	+	

COTTAGE GARDEN SEASHELLS

You will find tropical seashells in almost every village. Not that there are many collectors, the hobby is not as popular as that, but a surprising number of farm and cottage gardens shelter a large seashell or two. Shelter is possibly the wrong word, since these shells will be noticed on kitchen window-sills bleaching in the sun, hung on a nail sticking in an outhouse door or half buried in the soil of some flowerbed, all their lovely colours long faded to a chalky whiteness. I know of quite a number in our village alone, and when I lived in Harrogate as a boy there was a magnificent giant clam, both halves, serving as bird baths in the middle of a front lawn: I often went out of my way to have another look, and wondered if anyone else cared for them, or even noticed them. Giant clams are protected now, there will be no more bird baths.

The strange thing about these sea shells, carried thousands of miles from their home beaches, is that nobody ever seems to know how or when they arrived where they are! Try it for yourself next time you spot one. Ruined and neglected as they are, there is still something about them which discourages people from breaking them up or throwing them out - some lingering subtle attraction about the shapes of them, some remembrance of their past glory.

It is safe to say that they were almost certainly not bought although they may well have been brought back among his exotic souvenirs by some soldier or sailor son, home from serving in distant parts. If this was during the second World War, the incident is old enough to have been forgotten years ago. The shells may have been included in a job lot from an auction, of course, but a significant point is that they nearly always belong to the same few species. Even a non-shell-collector would be tempted if he saw a large and colourful shell lying on a tropical beach: what more likely than that he would be struck by the idea of taking it home to his parents, boasting that he picked it up himself? Even on tropical beaches however, not many large species of the kind lie about waiting to be picked up - for a good variety I take it you must develop enthusiasm, get out on the reef with an iron hook or don a wet-suit. However, there are just a few sizeable shells which do get washed up unharmed over wide areas of the tropics, and it is precisely those species which one sees so often in gardens.

Commonest of all is always Chicoreus ramosus, which was generally available in pet-shops for fancy fish devotees at least sixty years ago. It is extraordinarily abundant on tropical beaches round the Indian and Pacific oceans, grows up to eight inches, and the smaller specimens are still imported by the sackful; they can be bought at almost any souvenir shop. The species is often used by misguided freshwater aquarists for decorating their tanks but the ones you see in gardens have almost always been there a long time: the feathery fronds sprouting from each whorl in three directions at 120° still seem to catch the eye and stimulate the imagination, even when all colour has vanished.

Cowries one sees sometimes, perhaps the most generally popular of all shells even among non-conchologists. Nearly always it is the tiger cowry, which must be more frequent than all the others put together, and despite its familiarity, one of the most beautifully marked. The smooth brilliancy of the surface, protected throughout life, is very weather-resistant and the pattern persists although slowly fading. Odd cowries may even be found more often on the mantelpiece than in the garden because of this. Because of its shape the cowry reminded the Romans of little pigs and were accordingly called porcelli. The word provides the derivation for 'porcelain' - the word given by the potter to the finest and hardest of his wares, themselves admittedly second-best to the natural shell.

Tritons, the 'wreathed horn', blown by stone mermen on fountains and by South Sea Islanders in real life, you will not find. It is large and attractive enough, goodness knows, but I take it that it is not often washed up on beaches.

However, a large and heavy conch, usually Strombus gigas, is often found doing duty as a doorstep. These great shells which seem to grow to a uniform size over a foot long, live in countless numbers in the Caribbean where they are in demand for food, and one may see great piles of the shells waiting to be used for hardcore or crushed for lime: a passer-by may take what he fancies.

Spider shells (Lambis) can sometimes be spotted; they are common on the beaches of the Red Sea and East Africa. The same thing is true of helmet shells (Cassis) although the largest of these, literally the size of a helmet, is imported into Naples from the West Indies. Naples is the main - in fact now almost the only - cameo cutting centre in the world and helmet shells of all kinds are suitable for this work because their shell structure provides layers of differing colour. The cameo is usually carved on the shell and afterwards cut out for mounting as jewellery. I have seen large C. madagascariensis with a square hole cut out of the body-whorl, decorating a rockery. Smaller species, mainly the 'bull's mouth' are more usually carved all over for use as lamp-shades or paperweights and in the case of late workmanship, the carving is usually remarkably crude. However, Cassis rufus too, can frequently be found in gardens and some time ago a lady of my acquaintance in Bampton, Oxfordshire, picked a bull's mouth off the top of her rockery and handed it to me. It had been there for many years and every scrap of colour had weathered out. On examining it I was astonished to see, professionally carved on the two great lips, the words 'Present from Bampton'. It is unlikely that anyone but a neapolitan could have done it, and the workmanship was perfect. It provided us with a puzzle for some time, but we finally concluded that it must have been the handiwork of an Italian prisoner of war - someone far from home, keeping his hand in at his trade, with tools and materials sent by his family. He couldn't sell cameos to the locals, but for fairings there was usually a market. We ourselves have lived in Bampton for only eighteen years, but we found on enquiry that Italians were indeed employed locally on agricultural work during the war.

T. E. Crowley

A MOLLUSCAN FAUNA WITH POMATIAS ELEGANS FROM AN ARCHAEOLOGICAL SITE

IN THE CITY OF LONDON

The Mollusca listed below came from a deposit (Context No. 1762) found in 1981 in the archaeological excavation at Pudding Lane, Lower Thames Street, City of London. The deposit filled a small linear feature 0.25 m wide, 0.45 m long and 0.15 m deep, and consisted of a light-grey clay with sand in the lower 80 mm, and an orange-brown fine sand with silt which contained pebbles and molluscan remains. The date of the deposit is unknown, but it was sealed by a series of archaeological layers and cut on the west by the foundation wall of a Roman bath-house and to the south by a modern intrusion, therefore pre-dating the earliest known occupation of the site, which is of 160 A.D. During excavation the material was thought to be the truncated top of an undisturbed natural deposit; it overlay natural gravel, thought to correspond to Thames terrace no. 2.

The following numbers of shells were recovered from a sample of 1 kg, wet-sieved through a 0.5 mm mesh sieve:

<u>Pomatias elegans</u> (Müller)	9
<u>Carychium minimum</u> Müller	23
<u>C. tridentatum</u> (Risso)	230
<u>Cochlicopa lubrica</u> (Müller)	3
<u>Vertigo pusilla</u> Müller	1
<u>V. pygmaea</u> (Draparnaud)	2
<u>Vallonia costata</u> (Müller)	22
<u>V. pulchella</u> (Müller)	6

<u>V. excentrica</u> Sterki	10
<u>Acanthinula aculeata</u> (Müller)	6
<u>Spermodea lamellata</u> (Jeffreys)	3
<u>Punctum pygmaeum</u> (Draparnaud)	2
<u>Discus rotundatus</u> (Müller)	104
<u>Vitrina pellucida</u> (Müller)	2
<u>Vitrea crystallina</u> (Müller)	25
<u>V. contracta</u> (Westerlund)	20
<u>Aegopinella pura</u> (Alder)	16
<u>A. nitidula</u> (Draparnaud)	14
<u>Oxychilus cellarius</u> (Müller)	21
<u>Clausilia bidentata</u> (Ström)	5
<u>Trichia hispida</u> (L.)	7
<u>Cepaea</u> sp.	1

As many of the species are characteristic of calcareous soils it has been suggested that they were imported to the area with building material such as chalk or tufa. However, the stratigraphical position of the deposit below the earliest human levels and sealed by them makes this unlikely, and an alternative explanation is sought.

I am indebted to Gustav Milne and Vanessa Straker, Department of Urban Archaeology, Museum of London, for providing contextural and other information; and to Michael Kerney, Imperial College, for verifying the identifications.

Portia S. A. Askew

(Note added by Dr. Kerney: This is a very surprising fauna to find in Central London. Pomatias elegans is today restricted to chalk or limestone soils, such as on the Chilterns or North Downs, and does not live on the clays and sands of the Thames valley. Altogether the fauna is one of moist calcareous woodland, undisturbed by man. The assemblage of species (and especially the presence of Vertigo pusilla and Spermodea lamellata) suggests a date in the middle part of the Post-glacial period - later than 5,000 B.C. but before human clearance of the natural vegetation).

FURTHER NOTES ON JAN LIGHT'S UNUSUAL FIND FROM CORNWALL

In the September 1982 issue of The Conchologists' Newsletter, fellow Conch. Soc. member Jan Light wrote of an unusual find from Cornwall. After seeing the specimen in question early in 1982, during a shelling trip to Sandwich Bay, I unhesitatingly identified it as being Argobuccinum argus (Gmelin, 1791), a common South African marine gastropod species. I have been specialising in the family Cymatiidae for the last three years, so I was confident of my identification and gave the matter no further thought. However, I did ask Jan if I could borrow the specimen for photography, and so, have had it in my possession for the last few weeks. This gave me the opportunity to compare Jan's specimen with my half-dozen specimens of A. argus, and thus to notice that these shells, although very similar, were not identical: Jan's find has proved to be even more interesting (for me at least) as it is not A. argus (Gmelin) (which is actually a junior synonym of Argobuccinum pustulosum pustulosum (Solander in Lightfoot, 1786)) but a large specimen of the closely related species Argobuccinum proditor tristanense Dell, 1963, which was recorded and described from the cold waters of Tristan da Cunha in the South Atlantic.

Of course, all this does not clarify in any way how the specimen arrived in such fresh condition, to the beach in Cornwall where it was finally deposited, but does somewhat detract from the theory that it could have been thrown overboard from a ship by a passing "tourist". There could be a number of "possible" theories as to

how the specimen accidentally reached us, but I don't expect that we shall ever know for certain. For sure, it remains an amazing find.

Alex Arthur

COLLECTORS IN EAST AFRICA - 6. J. THOMSON

J. Thomson (1858-1895)

Joseph Thomson was born in Penpont, Dumfriesshire on the 14th. February 1858 in the house his father, a journeyman stonemason, had built for himself. His father was keen on geology and Joseph quickly shared this interest and in other branches of natural science. He was soon contributing papers on geology and from 1871 onwards, whilst the geological survey was at work in Nithsdale, he came to the notice of the great Professor Archibald Geikie. He left school in 1873 and worked for a short time in his father's quarry, then went on to Edinburgh University from which he came out in 1877 as medallist in both geology and natural history. He was indeed fortunate to have J. H. Balfour to teach him botany and James Geikie for geology. He was also greatly influenced by attending a course of lectures given by Prof. T. H. Huxley. Thomson was appointed geologist and naturalist to A. K. Johnston's expedition to Central Africa sent out by the Royal Geographical Society. On 5th. May 1879 they reached Zanzibar, but Johnston was dead from malaria at Behobebo by the end of June and Thomson suddenly found himself leader. He reached Lake Tanganyika on 3rd. November and set off to reach the headwaters of the Congo River, but a mutiny of his men alarmed by the warlike Warua obliged him to turn back when only a day's march from the river. He returned via Tabora and Lake Leopold (Lake Hikwa = Rukwa ?) which he was the first white man to see, and regained the coast on 19th. July 1880. The result was a book "To the African Lakes and Back" in two volumes in 1881. His mollusc collections from Lake Tanganyika made known a further selection of the extraordinary thalassic species which live in the lake, first brought to the attention of the scientific world by Capt. Speke and the Rev. E. C. Hore. Smith made known Thomson's discoveries briefly in 1880 and more fully in a paper (1881) elegantly illustrated by three plates from that well-known team of A. H. Searle, lithographer, and Mintern Brothers, printers. Smith writes "To three of these attaches the greatest interest; for they have all the appearance of being modified marine types. And such in all probability is the case; for Mr. Thomson informs me that in his opinion, judging from the geology of the neighbourhood, Tanganyika at some remote epoch has been an inland sea, the saltiness of whose waters has almost entirely vanished, leaving only a peculiar taste which can scarcely be described as brackish. The flavour is unpleasant; and when other water is procurable, that of the lake is not drunk by the natives". The pros and cons of the possibility of a Jurassic sea were argued out during the next 20-30 years; it is certain that no inland part of Africa was covered by sea in the Jurassic nor indeed since remote times and certainly not during the last cycle of continental drift. He next undertook for the Sultan of Zanzibar an examination of the coal Livingstone had reported in the Rovuma Valley, but it proved to be useless shale. Next, under the auspices of the Royal Geographical Society, he undertook to open up a route between the seaboard of East Africa and the northern coast of Lake Victoria. He left the coast with 140 men on 15th. March 1883 and reached Taveta on 5th. May. The party then entered the territory of the dreaded Masai to find them in a dangerous state of excitement due to a conflict with Dr. Fischer who had just passed through. He climbed Kilimanjaro to 9,000 ft. and then proceeded to Naivasha, and whilst his main party went to Baringo, he and 30 men made a rapid detour towards Mount Kenya. CMS missionary Rebman was laughed at when he claimed to have seen the snowy dome of Kilimanjaro in 1848 and Krapf was similarly treated when he reported sighting the glaciers of Mt. Kenya from Kitui some hundred miles away in 1849. It was considered impossible that snow-covered mountains could exist in the tropics. Thomson confirmed Mt. Kenya's existence in 1883 when he passed close to the mountain on his way across Laikipia. On his way he discovered a whole range of

mountains which reached 14,000 ft. - these he named the Aberdare Range after the then president of the Royal Geographical Society. He then caught up with his party at Baringo and after a rest went on to Lake Victoria, reaching it on 10th. December, but soon retraced his steps since the King of Uganda's treacherous nature was known to him. He visited Elgon on the way back and discovered the now well-known caves. On the last day of 1882 he was nearly killed by a wounded buffalo and had to be carried on a litter; they reached Naivasha where he went down with dysentery. Every day they were in danger of annihilation by the Masai. By April 1883 they caught up with coast traders and on May 24th. reached Rabai. Thomson returned to London in 1883 in poor health and was well received. His subsequent book "Through Masailand" was a great success (and still jolly good reading). The Masai had been renowned for their ferocity and to cross their country was a heroic feat. By 1884 he was fit again and visited the Sudan where he made friends for Britain. In 1885 he received the gold founders' medal of the Royal Geographical Society. Stanley was chosen instead of him to relieve Emin which was a pity since his route would have been simpler. In 1888 he explored the Atlas Mountains in Morocco. 1890 saw him in Kimberley in the interests of the British South Africa Company and he received his instructions from Cecil Rhodes. He explored Quelimane without upsetting the jealous Portuguese though while passing through their territory he was nearly killed by a fusillade of bullets. His route lay up the River Shire then to Blantyre and Kota Kota on the west of Lake Nyasa. They visited Lake Bangweolo after much trouble and threatened desertions, returning to Blantyre in February 1891. On this expedition he was joined by the son of James Augustus Grant (of Speke & Grant fame) who arrived from the Cape bearing instructions from Rhodes. Thomson wrote home to Grant describing his son as "a magnificent brawny fellow bronzed and bearded almost beyond recognition". He was back in London the following October - his health was now permanently affected and after a bout of pneumonia he went to the Cape as a guest of Rhodes where he soon recovered and talked of visiting Mashonaland. Lung disease broke out again and though he went to the south of France he was beyond help and died in London on 2nd. August 1895. He stands high in the ranks of African explorers and published a great deal in journals as well as many books.

He could work out the broad geological structure over vast areas with ease and this was his main interest but he also collected many botanical and zoological specimens. All his mollusc specimens were worked out by E. A. Smith in three short papers (1880, 1881A, 1881C). In contrast with so many bloodthirsty explorers, he never fired a shot, even in self defence, or left behind any needless graves. His immense powers of endurance can be judged from the fact that he sometimes travelled seventy miles in one day.

Most of the above information is taken straight from the Dictionary of National Biography. Collectors who were also famous explorers need no research to unearth details of their lives. I am grateful to the Oxford University Press for permission to quote from the DNB.

List of molluscs described from material collected by Joseph Thomson:

<u>Achatina thomsoni</u> Smith, 1880.	Lake Nyasa to E. Coast = <u>Achatina spekei</u> Dohrn, Syntypes: BM 1880. 12.20.170-2, lectotype marked with red spot (this locality is in S.E. Tanzania)
<u>Ampullaria gradata</u> Smith, 1881A.	Lake Nyasa and between it and E. coast = <u>Pila ovata</u> (Olivier, 1804). Syntypes: BM 1880. 12.20.120-1
<u>Bulimus notabilis</u> Smith, 1880.	Lake Nyasa to E. Coast = <u>Mabiliella notabilis</u> (Smith, 1880). Syntypes: BM 1880. 12.20.166-9. lectotype marked with red spot
<u>Grandidieria smithii</u> Bourguignat, 1885.	Lake Tanganyika = <u>Grandidieria burtoni</u> (Woodward, 1859). Type: based on Smith 1881A, pl. 34, fig. 33a. BM, holotype in the general collection.

- Helix (Nanina ?) nyassana Smith, 1881A. Lake Nyasa to E. Coast. = Zingis ? nyassana (Smith, 1881). Holotype: BM 1880. 12.20.58
- Limnotrochus thomsoni Smith, 1880. Lake Tanganyika. Unchanged. Syntypes: BM 1880. 12.30.45-8, lectotype marked with red spot
- Lithoglyphus neritinoides Smith, 1880. Lake Tanganyika. = Stanleya neritinoides (Smith, 1880) Syntypes: BM 1880. 12.20.69-7 (four specimens)
- Lithoglyphus rufofilosus Smith, 1880. Lake Tanganyika. = Tanganyicia rufofilosa (Smith, 1880). Syntypes: BM 1880. 12.20.65-8
- Melania tanganyicensis Smith 1880. A wrongly localised Lake Malawi shell said to be from Lake Tanganyika, = Melanoides polymorpha (Smith 1872). Holotype: BM 1880. 12.20.55
- Segmentina (Planorbula) alexandrina Ehrenberg var. tanganyicensis Smith, 1881A. Lake Tanganyika. Said to = Biomphalaria sudanica (Von Martens, 1870) but on examination I do not think so. (See Brown, D.S., Freshwater Snails of Africa...: 178, fig. 100d (1980). Syntypes: BM 1880. 12.20.74-7
- Streptaxis gigas Smith, 1880. Lake Nyasa to E. Coast. = Gigantaxis gigas (Smith, 1880). Never re-found and neither type is adult. Syntypes: BM 1880. 12.20.176-7
- Streptaxis mozambicensis Smith, 1880. Lake Nyasa to E. Coast. = Gonaxis mozambicensis (Smith, 1850). Only fragments remain; a note on the box indicates that Smith himself accidentally smashed them. Syntypes: BM 1880. 12.20.173-4
- Subulina lenta Smith, 1880. Near Lake Tanganyika. = Subulona lenta (Smith, 1880). Syntypes: BM 1880. 12.20.84 & 1888 6.15.9
- Subulina solidiuscula Smith, 1880. Near Lake Tanganyika. = Subulona solidiuscula (Smith, 1880). Holotype: BM 1880. 12.20.85
- Syrnolopsis lacustris Smith, 1880. Lake Tanganyika. Unchanged. Syntypes: BM 1880. 12.20.57-64
- Tiphobia (Paramelania) nassa (Woodward) var. paucicostata Smith 1881C. Lake Tanganyika. = Lavigeria nassa (Woodward, 1859) forma paucicostata (Smith, 1881). Syntypes: BM 1880. 12.20.53-4 plus one from Cuming Coll. but who collected this is not known
- Unio hermosus Bourguignat, 1889. Lake Nyasa. A new name for U. nyassaensis var. Smith 1881: 298, pl. 34 b. (Lea, 1864). = Nyassunio nyassaensis Holotype: BM 1880. 12.20.130
- Unio horei Smith, 1880. Lake Tanganyika. = Caelatura aegyptiaca (Cailliaud, 1826) f. horei (Smith, 1880). Holotype: BM 1880. 12.20.42
- Unio nyassaensis Lea var. tanganyicensis Smith, 1881A. Lake Tanganyika. = Nyassunio nyassaensis (Lea, 1864) (Parreysia ujijiensis (Crosse, 1881)). Syntypes: BM 1880. 12.20.39-41*
- Unio thomsoni Smith, 1880. Lake Tanganyika. = Grandidieria burtoni (Woodward, 1859). Syntypes: BM 1880. 12.20.36-38 lectotype with red spot

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B. Verdcourt

- * Pilsbry & Bequaert (Bull. Am. Mus. Nat. Hist. 53: 394 (1927)) give the type as 'E.C. Hore Coll.'. but Smith states 'There are three valves in Mr. Thomson's collection which I think may possibly belong to this species. They differ....'

AN OVERLOOKED RECORD OF *MONACHA OBSTRUCTA* FROM SAUDI ARABIA

Recently Ataur-Rahim (1980) claimed the first records of *Monacha obstructa* (Pfeiffer, 1842)¹ for the malacofauna of Saudi Arabia. He was able to report it from two widely separated localities: Al-Hair and Al-Hufuf. In the same year, even pre-dating Ataur-Rahim's record by two months, Mordan (1980) reported *M. obstructa* from a third locality: Diriya, 20 km NE of Riyadh.

In the course of the preparation of a bibliography concerning *Theba pisana* (Müller, 1774) and related taxa, I came across a paper by Abu Yaman (1966) on the "Insect pests of Saudi Arabia". Although it is, strictly speaking, not dealing with molluscs, two species of land snails are mentioned amongst the agricultural insect pests. Both *Theba pisana* and *Monacha obstructa* (as *Theba obstructa*) are recorded as injurious to date-palms and citrus in the oases in the Najd region. Unfortunately Abu Yaman does not give any details concerning specific localities in that area. However, both Mordan's Diriya and Ataur-Rahim's Al-Hair are situated in the Najd region. Abu Yaman seems therefore to be the first who has reported *M. obstructa* from Saudi Arabia.

Monacha obstructa is widely distributed in the Middle East. In the collection of the Hebrew University of Jerusalem are samples from Lebanon (several), Israel (hundreds), Syria (Damascus), Iraq (Basra) and Egypt (Damietta). The species is, however, also known to occur in the south of Turkey, in Jordan and probably in Iran. Mordan's statement that *M. obstructa* is also living in Libya needs confirmation. Pfeiffer's type material came from Tripoli, Lebanon (not the Tripoli in Libya!).

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NOTE 1: *Monacha obstructa* (Férussac, 1821 or 1824, as in Ataur-Rahim) is a nude name. The species was validly described for the first time by Pfeiffer in 1842.

Henk K. Mienis

REVIEW

The Illustrated Guide to Molluscs, by Horst Janus. London: Harold Starke, 1982. 180 pp., 4 pls. + numerous text figs. £7.45 (ISBN 0 287 00055 8 (or 9?)).

The new title and the dust-jacket with an illustration of an exotic land snail suggest this is a new book on Mollusca. However, it is mostly a well-produced reprint of The Young Specialist Looks at Molluscs by Horst Janus (London: Burke, 1965, reprinted 1979). New material consists of ten extra pages at the front of the book and seven at the back, while the remainder has been reprinted without change.

The Young Specialist Looks at Molluscs was itself a translated and extended version of Unsere Schnecken und Muscheln (Stuttgart: W. Keller, 1958). The English version gave an introductory account of the land and freshwater Mollusca of the British Isles, illustrated by line drawings of almost all the species. Because it was generally accurate, with an interesting text, as well as being low in price it was widely used for identification and often served to stimulate the interest of beginners with non-marine Mollusca.

The original text of The Young Specialist Looks at Molluscs has however become increasingly out of date. This is partly due to extensive changes in the names used for non-marine molluscs and partly due to the discovery of additional species in the British Isles and additional localities for others. Much of this information has been incorporated into several recent publications, which between them give good accounts of both land and freshwater Mollusca.

The Illustrated Guide to Molluscs devotes most of its 17 additional pages prepared by Dr. June Chatfield to introduction and explanation of the new names and lists of these names. In addition, a useful index of synonyms used in the older literature is presented. Unfortunately however, retention of the old names in the original text may serve to confuse beginners. There is no text to give identification notes and other details for the 14 or so species whose presence in Britain has been recognised since The Young Specialist Looks at Molluscs was published, new distributional records are not covered, and the occasional error in the original persists (notably, Fig. 90 depicts Milax sp., not a Testacella).

Overall, it is good that Dr. Janus's interesting and sound introduction to non-marine Mollusca is in print again. However, it is unfortunate that the original English text has not been revised throughout. Avoidance of the high cost of revising the entire text would seem easier to accept if the resulting reprint were inexpensive. This book has the advantage of including the land Mollusca in the same volume as the freshwater snails and mussels for £7.45, but other better illustrated works cover each of these groups separately for a lower price.

D. T. Holyoak

THE WHITE PIDDOCK BARNEA CANDIDA (L.) FOUND ALIVE ON MERSEYSIDE

Byerley (1854) described this species as 'Common, burrowing in peat and clay, from Leasowe towards Hoylake. In clay a little north of Egremont slip. Formby shore also.' The animal was also reported by McNicoll (1859) to have been found alive at Southport. Bassindale (1938) found small specimens living in outcrops of clay at about half tide level at Moreton and Leasowe, on the north Wirral coast. Searches in the past few years have failed to reveal either living Barnea or a suitable habitat locally. However, single valves are still common items along both the south Lancashire and Wirral coasts. McMillan (1974) blamed increasing muddiness and pollution for the extinction of B. candida and our other local piddock

Zirfaea crispata (L.). It was thought possible that the valves found on the beaches were only from the erosion of long-dead colonies.

In August 1982, a small colony of living B. candida was discovered in a bed of clay at Meols, on the Wirral coast. This is in the same general area from which Byerley recorded the species as common in 1854. This clay now exposed, originally underlay a bed of peat which supported a quite famous submerged forest at Leasowe. The forest 'disappeared' some time after the second world war. Following completion of a new sea defence wall between Meols and Leasowe in 1978, several feet of sand were lost at Meols exposing the submerged forest beds and the clay, a year or so ago. The currents quite frequently alter around Merseyside and it is likely that areas of this hard bottom appear sporadically and that Barnea may maintain its presence here as comparatively short-lived colonies both on and offshore. It is interesting that very small paired valves of both B. candida and Z. crispata were found in borings in a piece of peat washed ashore at Talacre on the nearby north Wales coast, but of course these may have come from a long-dead colony.

The colony at Meols is above half-tide level but lies in a main drainage channel which carries water off the sandbanks and is therefore permanently under-water. Two small blocks of clay were dug up to obtain specimens which were preserved using a variety of techniques for the museum collections. The majority of animals appeared to be full-sized compared with empty valves collected locally in the past. They were found in small dense groups, the shells being very close together. Between 30 and 60 siphon holes a square foot were noted. Duval (1977) noted a similar dense packing of Barnea shells of uniform size, in clay at Whitstable Street. The animals had bored between 3 and 6 inches into the very stiff clay, but because of their density this was easily crumbled around them. Barnea seemed able to cope easily with a small amount of sand covering the clay. Their siphons could be seen surrounded by small cones of mucous-bound sand. It is not known how many days they could stand being smothered by deep sand but it seems quite likely that the colony at Meols has had to contend with this problem occasionally, for example, after spells of rough weather.

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B. & I. D. Wallace

CONCHOLOGICAL SOCIETY OF GREAT BRITAIN & IRELAND

961st. (Ordinary) Meeting held on 16th. October 1982 at B.M.(N.H.)

In the Chair: Mrs. S. M. Turk with 42 members and friends present.

Nominations and Elections to Membership: 12 Full Members -

Bodon, Dr. M., [REDACTED], 16166 Genova, Italy.

Cataliotti-Valdina, J., C.N.R.S., Centre de Recherches Archeologiques, Sophia Antipolis, 06560 Valbonne, France.

Clarke, S.D., [REDACTED], Woodland, near Bishop Auckland, Co. Durham.

Falkner, G., [REDACTED], D-8000 München 70, W. Germany.

Gibson, I.C., [REDACTED], Belize City, Belize, Central America.

Glover, Miss R., [REDACTED], Middleton, Manchester.

Harper, Mrs. E.M., [REDACTED], Rednal, Birmingham, [REDACTED]
Harris, Miss A.L., F Floor, Dept. of Geography, University of Sheffield, Western
Bank, Sheffield, South Yorkshire.
Hemblade, L.E., [REDACTED], Southwick, Sussex, [REDACTED]
Mackenzie, Mrs. M., [REDACTED], Luton, Bedfordshire.
McNeil, Mrs. R.M., [REDACTED], Accrington, [REDACTED]
Roy, Miss Angela, [REDACTED], Glasgow, [REDACTED]

1 Family Member -

Bottomley, Mr. & Mrs. J., [REDACTED], West Bridgford, Nottingham, [REDACTED]

5 Junior Members -

Hall, Douglas S.D., [REDACTED], Kimbolton, Huntingdon, [REDACTED]
Konig, Miss Julia, [REDACTED], Haydon Bridge, Hexham, Northumberland.
Lodge, Miss A.J., [REDACTED], Brabourne Lees, Ashford, Kent.
Owen, Miss Anne-Marie, 22 Rocoan Glade, Wildwood, Stafford, [REDACTED]
Trewinnard-Tucker, Miss R.L., [REDACTED], Whipon, Exeter, Devon.

Paper Read: The conchological collections of Bruguiere and Olivier from the
Ottoman Empire, by S. Tillier and P. Mordan.

Lecture: 'India and the sacred chank' by Mr. D. Heppell.

Announcements and Correspondence: The British Shell Collectors' Club will be hold-
ing a Conversazione Meeting on 30th. October 1982 at the Napier Hall,
Victoria, London.

The field Meeting on 17th. October is the Autumn Slug Foray at Burnham
Beeches. Meet at Slough Station at 11.30.

Meeting closed at 5.30 p.m.

Exhibits:

- B. Colville - The freshwater Molluscs of Canada.
- Ovatella myosotis, Succinea oblonga and Catinella arenaria.
D. Guntrip - New Atlas of Seas around British Isles.
D. Heppell - Chank products from India, and photographs.
R. Holt - Catalogue of Exhibition at Buxton Museum, Derbyshire,
including exhibition on Wilfred Jackson.
W. Karo - Turbo jourdani Kiener 1839, Western Australia.
J. Light - Conch. Soc. Field Meeting on Skye.
J. Nunn - Assorted Information which may be of interest to Members.
A.P.H. Oliver - Sundry Xanxes, Vasum armatum, various publications and 'a concholog-
ical hideosity.'
J. Orr - Some Indonesian shells.
T. Pain - Muricidae, Chicoreus Subgenus Chicomurex.
E. Sándor - Buccinidae, Genera Cantharus, Siphonalia and Buccinanops.
R.P. Scase - Achatinella apexfulva Dixon and relevant extracts from Hawaiian
Shell News (1963 and 1982).
S. Turk - Exhibit of British Cockles (Cardiidae), illustrating Paper for
Students No. 16.
B. Verdcourt - Perforatella rubiginosa (A. Schmidt) a hairy helicid new to the
British list.

962nd. (Ordinary) Meeting held on 20th. November 1982 at B.M.(N.H.)

In the Chair: Mr. J. F. M. de Bartolomé with 46 members and friends present.

Nominations and Elections to Membership: 4 Full Members -

Beath, D.D.N., [REDACTED], Ilton, near Ilminster, Somerset, [REDACTED]

Bryan, M.D., B.Sc., M.Sc., FRES, [REDACTED], Blackwell, near Bromsgrove,
Worcestershire, [REDACTED]
Hamilton-Leggett, P.R., B.Sc., [REDACTED], Bradford-on-Avon, Wiltshire.
Jensen, Dr. Kathe R., Dept. of Biological Sciences, Florida Institute of Technology,
Melbourne, Florida 32901, U.S.A.

Lecture: 'Don't neglect the strand-line' by Miss J. T. Sawyer.

Announcements and Correspondence: The Catalogue of Irish non-marine Mollusca in the Ulster Museum will be published shortly. Mrs. Fogan has agreed to prepare a list of members wishing to purchase copies.

Nominations for membership of Council to fill two vacancies arising after the next A.G.M. should be sent to the Hon. Secretary in writing by 31st. December 1982 at the latest. Nominations of Officers should be sent to the Hon. Secretary by 18th. December 1982.

Any other business: Members were requested to bring exhibits to the next Meeting, the theme of which is 'A Shell with a History.'

Meeting closed at 5.15 p.m.

Exhibits:

- | | |
|---------------------|---|
| J.F.M. de Bartolomé | - <u>Helix aspersa</u> and <u>Leptaxis lowei</u> from Jardim Botânico, Funchal, Madeira. |
| | - Original letters from J. Gwyn Jeffries, E.A. Smith, R.F. Scharf, W.M. Hoyle, A.M. Norman, et al. |
| B. Colville | - Madeiran land shells. |
| | - Field Guide to non-marine molluscs of S.E. Australia and A. Nobre's Fauna Malacológica de Portugal. |
| I.J. Killeen | - Land Mollusca of the Alps. |
| | - Madeiran vitrinids. |
| R.W. Morrell | - Japanese land shells and the latest book on them. |
| | - A recent Polish journal with cover illustration of a pair of <u>Helix pomatia</u> - sinistral!! |
| J. Nelson | - Books from New Zealand. |
| J. Nunn | - Assorted information of interest to Members of the Society. |
| A.P.H. Oliver | - The genera <u>Fusitriton</u> and <u>Ranella</u> . |
| T. Pain | - North Pacific species of <u>Neptunea</u> (Buccinidae). |
| | - A new species of <u>Chicoreus</u> (Muricidae) from Natal, South Africa. |
| E. Sándor | - Buccinidae, Genera <u>Buccinum</u> , <u>Ancistrolepis</u> , <u>Japelion</u> , <u>Neptunea</u> and <u>Siphonalia</u> . |
| J. Sawyer | - Shells collected in New Zealand, Fiji and Cape Cod, U.S.A., in connection with talk 'Don't neglect the strand-line'. |
| R.P. Scase | - <u>Cypraea acicularis</u> and <u>C. spurca</u> ; also two publications on the Cypraeidae of Fiji. |
| B. Verdcourt | - <u>Astraea sulcatum</u> Martyn from 30-40 miles N. of Wellington, North Island, New Zealand. |

INTERNATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE

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

Reference: ITZN 11/4 (A.N.(S.) 124)

8 December 1982

The Commission hereby gives six months notice of the possible use of its plenary powers in the following case, published in the Bulletin of Zoological Nomenclature, volume 39, part 4, on 7 December 1982 and would welcome comments and advice on this from interested zoologists. Correspondence should be addressed to

the Secretary at the above address, if possible within six months of the date of publication of this notice.

Case No.

2325 Conus antiquus Lamarck, 1810 (Mollusca, Gastropoda): request for invalidation of neotype and validation of a rediscovered original specimen.

Reference: ITZN 59

The following Opinion has been published by the International Commission on Zoological Nomenclature in the Bulletin of Zoological Nomenclature, volume 39, part 4, on 7 December 1982:

Opinion No.

1233 (p. 250) Pulteney's Dorset Catalogues, 1799, added to Official List.

The Commission regrets that it cannot supply separates of Opinions.

R. V. Melville, Secretary

FIELD MEETING TO THE ISLE OF SKYE, 20th. - 25th. JUNE 1982: REPORT

Seven members and friends gathered in Portree for a week of mollusc recording and collection. Following the suggestions made by Dr. Shelagh Smith, who was unable to be with us, we made visits to fourteen sites in Skye. Skye is a huge island with varied scenery, much of it stupendous mountains, fauna and flora to match. Our interest in other subjects, geology, botany and birds was stimulated, especially by the sight of a golden eagle.

Several sites stand out: Strollamus (18/268603), Broadford Bay (18/23-65-) and Claiggan (18/54(55)-22-) were most prolific. At Strollamus an extensive Modiolus modiolus community was seen: Hydrobia ulvae, Cingula semistriata and Turtonia minuta were found in the byssus and on the shell. Capulus ungaricus and Chlamys nivea known to be associated with Modiolus modiolus were also found there. At Claiggan there were large numbers of a few species, Lutraria spp, Lucinoma borealis and very large and beautiful Venerupis rhomboides. The beaches at this beautiful place were made of white coralline algae (maerl), the white bays separated from each other by seaweed-covered rocks and islets. The water in the bays grading from pale blue to deep azure.

The Braes (18/356526), where we made our first collection was chiefly remarkable for the enormous numbers of minute juvenile Lacuna vincta on the intertidal weeds, thousands of purple bog orchids and its beautiful scenery. We found quite a few species intertidally in Skye that are sublittoral in the south, for example Calliostoma zizyphinum and also typically northern species like Acmaea testudinalis and Lucinoma borealis. The more interesting small molluscs were obtained by washing the small seaweeds in fresh water; we found, for instance Rissoella diaphana, Omalogyra atomus and Menestho diaphana. I think that the most beautiful bay we visited was the last, Talisker (18/30-31-). Set between dark cliffs of ancient lava flows, the black sandy nearly circular bay is ringed by a necklace of enormous boulders worn smooth by Atlantic rollers.

In all, ninety one species were recorded, fifty five of these were found alive. Anyone who would like a complete list should contact me. Photocopying and postage will be charged. I am most grateful to Nick and Jan Light for the use of their large comfortable car and for driving that and the hired car. Our thanks also to Ralph and Avril Robson for sharing their local knowledge and for the excellent meals we had in their restaurant in Portree. All participants seem to have found it an enjoyable and useful trip. Why don't you come too next time a long field meeting is organized?

Celia Pain

MALACOLOGICA ITALIANA"

On 25th. September 1982 an extraordinary meeting of both our Societies was held in Bologna and all the attending members approved the proposal of an executive Board for the foundation of a new Italian Association for Malacology, to be called:
SOCIETA' ITALIANA DI MALACOLOGIA (SIM)

The new Society started its activity at the beginning of 1983 and all the members of the previous two associations SMI and UMI will automatically become part of Società Italiana di Malacologia, c/o. Acquario Civico, viale Gadio 2, 20121 Milano, Italy.

Italian malacologists will act in the future in a more dynamic and amplified way, both in Italy and abroad, thus assuring a better and more modern range of facilities. The SIM will fulfil all the previous international engagements made by the old Italian associations of Malacology.

The name of the present reviews will remain:

BOLLETTINO MALACOLOGICO as the SIM official journal and

LAVORI collecting Acta from congresses and meetings.

We invite all our members, all European and non-European malacologists, scientific Institutes and Museums, to join the new Society.

SOCIETA' ITALIANA DI MALACOLOGIA - 1983 MEMBERSHIP FEES (abroad)

Contributing member	minimum It. lire 28000 (= £20)
Ordinary member	It. lire 18000 (= £13)
Junior member (under 15)	It. lire 13000 (= £10)
Associations, Institutes	It. lire 28000 (= £20)

Extra charges for Air Mail:

Europe and Mediterranean countries:	£ 3.50
Africa:	£ 6.50
America and Asia:	£ 7.50
Oceania:	£13.50

FIELD MEETINGS 1983

Saturday 2nd. April	Demonstration of Microscopes and accessories by Mr. M. J. Edwards (Hampshire Micro) to be held at [REDACTED], Luton, by kind invitation of Mr. & Mrs. D. G. Rands. Train from St. Pancras: dep. 10.40, Luton arr. 11.09. If travelling by other means meet at No. 51 at 11.30. If attending please note that it is essential to advise Mrs. Rands (tel. [REDACTED]) by March 30th. at the latest.
Friday 29th. April to Monday 2nd. May	Portland Harbour and the Fleet. Leader: Mrs. J. Light. For accommodation available in Weymouth, send S.A.E. to Mrs. Light, [REDACTED], Godalming, Surrey, [REDACTED] (tel. [REDACTED]) before the end of March. This is a holiday weekend and early booking is essential. Friday 29th. April, train from Waterloo, dep.

16.35; Weymouth arr. 19.17. (It is advisable to book seats in advance on this train.)

Sunday 19th. June

Photographic Day Course.

Instructor: Mr. D. G. Rands. To be held at [REDACTED], Luton. Please advise Mrs. Rands in advance if attending. Meet at No. 51 at 11.30. Train from St. Pancras dep. 10.30; Luton, arr. 11.09.

Details of meetings from July onwards will appear in the June Newsletter.

T. Pain, Field Meetings Organiser,

[REDACTED], Millbank, London, [REDACTED] Tel. [REDACTED]

GENERAL NOTES

SYMPOSIUM ON QUATERNARY NON-MARINE MOLLUSCA

Organised on behalf of The Conchological Society of Great Britain & Ireland and the Quaternary Research Association.

Saturday 23rd. April 1983, at the Department of Geography, University of Reading, 2 Earley Gate, Whiteknights Road, Reading, RG6 2AU

Beginning at 9.30 a.m., ending by 6.30 p.m.

This informal meeting will consist of eight to ten short papers and discussion, and is intended primarily for workers actively involved in research in this field. The number of visitors will be limited to 30.

To register, write (enclosing s.a.e. please) to D. T. Holyoak at above address.

POSTSCRIPT TO A NOTE ON NON-MARINE MOLLUSCA OF ARABIA

In The Conchologists' Newsletter No. 61: 9 (1977) I published a list of sub-fossil shells collected by Mr. Brian Acres of the Land Resources Division of the Ministry of Overseas Development on the montane plains to the north and east of Mabar in a soil horizon in an alluvial basin at Qa Jahran, Yemen Arab Republic. It was noted that a radiocarbon dating would be carried out on the deposits. The C^{14} Measurements Laboratory at Harwell have now dealt with this sample and give the age as 7210 ± 90 years BP. I am grateful to Mr. Acres for passing on this information which greatly adds to the value of the original note.

B. Verdcourt

A. E. CRAVEN AND THE ARTHUR BLOK COLLECTION

Verdcourt (1979a) suggested that type specimens of taxa described by A. E. Craven might be present in the late Arthur Blok collection. A check of Verdcourt's list (1979b) of Mollusca described by Craven and Blok's catalogue revealed that none are represented in the Blok collection. Material, other than type specimens, from the Craven collection is, however, fairly well represented in the collection. These samples are still contained in the original boxes with Craven's

neatly written labels glued to the undersides. These labels often give some interesting information concerning the origin of the material and show among others that commerce in shells was not at all a strange thing in Belgium in the end of the 19th. Century.

REFERENCES

- Verdcourt, B., 1979a. Collectors in East Africa - 1. A. E. Craven (1849/50 - 1937). Part 1. The Conchologists' Newsletter, 69: 147, 149-153.
- Verdcourt, B., 1979b. idem. Part 2. The Conchologists Newsletter, 70: 165-167.

Henk K. Mienis

TESTACELLA'S LAMENT

One dewy night, when gentle winds
Played through the grasses green,
Beneath the garden bed I met
The longest worm I've seen.

Pink, succulent, divinely plump,
Of all the worms the king.
I seized him by his rosy tail
And pulled like anything.

Forward and back we blindly strove;
With all my might I tried
To get a purchase with my tail
And coil him down inside.

Alas, alas! for all my toil
'Twas not my lucky day.
He gave a sudden jerk, I slipped,
My dinner got away.

I searched that bed from end to end
For many a weary day,
But never more set eyes upon
The worm that got away.

Now, deep beneath the frozen soil,
Hidden and safe I lie,
Whilst far above my buried head
Snow-laden winds sweep by.

I dream of all the springs to come
Bedecked with flowers gay,
But still I sadly ponder on
The worm that got away.

Margaret Jaques

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THE CONCHOLOGISTS' NEWSLETTER

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Market Harborough,
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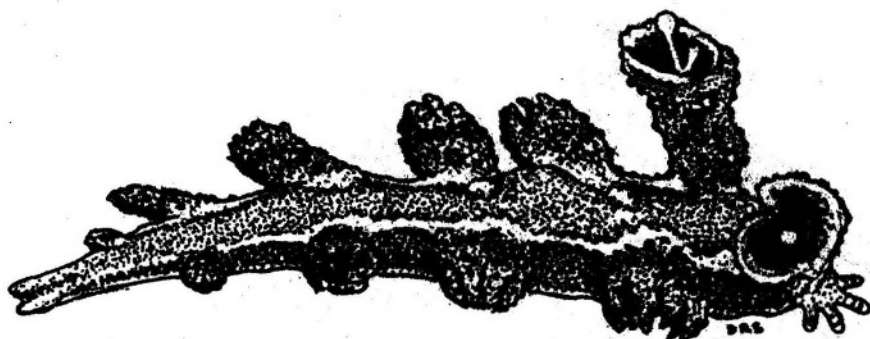
June 1983

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HANCOCKIA UNCINATA FROM SOUTH DEVON

I found a specimen of the rare nudibranch Hancockia uncinata among some weeds and stones collected at low water on the shore at Chit Rocks, Sidmouth, South Devon, on 7th. March 1977. Since this appears to be only the third or fourth British specimen, and the only easily available figure is not satisfactory, the following notes and sketch may be helpful.



The animal was not noticed until some two weeks after collection, being extremely well camouflaged against Fucus and red-brown weeds. The body colour was brown, but a superficial transparent layer gave an iridescent blue green sheen which changed the general colour under certain lights.

The cerata (5 left, 4 right) and rhinophore sheaths carried numerous papillae, some of the ground colour and others of intense opaque white, particularly noticeable as "knucklebones" on the "clenched fist" cerata. The base of each ceras and rhinophore sheath also bore mesially a patch of opaque white, these patches being joined up along the dorsum edge, while the tips of the rhinophore sheaths and the rhinophores themselves, were also opaque white.

The oral veil gave the impression of two four-fingered hands with white finger nails, the impression being heightened as the "hands" of the crawling animal "clasped" a thin stem or hydroid. The flattened foot ended posteriorly in a tail which could change shape from bluntly-rounded to distinctly bifid, the latter being the more usual.

The foot was pale, narrow, and capable of clasping narrow stems. The left rhinophore had developed a branched tip. Length of the crawling animal was 10mm.

I have several colour transparencies of the live animal which was presented to Dr. G. H. Brown.

The sketch in Thompson and Brown (1976) British Opisthobranch Molluscs (p.69) and that in Eliot (in P.Z.S. 1912, pl. LXXXV), show smooth narrow rhinophore

sheaths with scalloped rims whereas in my animal, the rhinophore sheaths were broad and tuberculated, slightly flared and with flat though tuberculated rims. Thompson and Brown show the tail tip bluntly rounded, but Thompson describes it as slightly notched or bifid in Thompson (1975) Eastern Australian Dendronotoidea Zool J Linn Soc, 51:63-77, which is probably the more usual shape.

D. R. Seaward

THE SLUGS AND SNAILS OF FAIR ISLE

Fair Isle is a speck of land (approx. 3 miles by $1\frac{1}{2}$ max.) lying midway between the Shetland and Orkney groups of islands, and twenty miles from either group. It has, of course, long been famous in the ornithological world for the wealth of migrant and strayed birds which use it as a halting-place. It is a bleak little island, now in the care of the National Trust, and there I spent a September week comfortably in the Fair Isle Bird Observatory.

The northern half of the island, where the Bird Observatory is sited, is common grazing and uninhabited although there are a few sheds around the North Haven (the little harbour where the island boat, the "Good Shepherd" lies). There is a tiny plantation of conifers on the upper part of the Gilsetter Burn but otherwise the island is treeless. The deep glen called The Gully, through which the Gilsetter Burn reaches the sea, looked promising for Mollusca and I much regret my inability to investigate it. The following brief list, however, might well be enlarged by diligent search about the houses and cultivated land at the south end of the island.

On the vice-county system Fair Isle is included with Shetland (as it is politically and administratively) as VC 112, although I have somewhere seen the island dignified as VC 112a.

Previous records of land and freshwater molluscs on Fair Isle are few; three species taken by Eagle Clark (Anon 1910) and a few in the card-index of the Fair Isle fauna and flora maintained in the Bird Observatory.

The list is as follows:

Lymnaea peregra (Müller)

Generally distributed but specimens very small. Examples from the Gilsetter Burn were from 8mm. high down to infants only 0.5mm.

L. truncatula (Müller)

Taken by Eagle Clark (Anon 1910). "Fluke" is said to be on the island but I failed to find the offending snail.

"Planorbis"

recorded by Leicester students in 1959. Seems very doubtful and no specimens are available.

Hydrobia ulvae (Pennant)

Recorded (sub Peringia ulvae) in 1967 from "Upper pool of Slogar S.R.W." I carefully searched many pools about Slogar on Buness, especially that just above HWM and surrounded by a sward of Armeria and Plantago coronopus which was the only one looking even possible for Hydrobia ulvae. The pool (ca. 25 by 15 ft. at the time of my visit on 9.9.82) was foul with sheep-droppings and the water peaty-brown. It yielded neither living molluscs nor empty shells. Possibly Potamopyrgus jenkinsi was the species found, just a temporary colonization?

Oxyloma pfeifferi (Rossmässler)

Marsh by roadside just S. of the Burn of Vatross. Also at Vaadal, 14.9.81 (N. Riddiford).

Arion ater (L.)

Black specimens generally distributed. A specimen confirmed by Miss S. M. Davies.

A. hortensis Férussac s.l.

Reported "near Single Dyke Trap. D.L.J." but not

<u>Vitrina pellucida</u> (Müller)	re-found by me. Taken by Eagle Clark (Anon, 1910). Also found on a female chaffinch (Williamson, Parslow and Dance 1959).
<u>Oxychilus alliarius</u> (Miller)	Taken by Eagle Clark (Anon, 1910).
<u>Limax marginatus</u> Müller	A specimen brought me from the North Light, 13.9.82
<u>Deroceras reticulatum</u> (Müller)	About the North Haven buildings, in the tiny garden of the Bird Observatory and no doubt about the crofts at the south end of the garden. Specimens det. Miss S. M. Davies.
<u>D. caruanae</u> (Pollonera)	One small specimen at the North Haven, det. Miss S. M. Davies.
<u>Pisidium personatum</u> Malm	Marsh at roadside S. of the Burn of Vatross, and in the Gilsetter Burn (both det. J. G. Kuiper).
<u>P. casertanum</u> (Poli)	With <u>P. personatum</u> in roadside marsh just S. of Burn of Vatross (det. J. G. J. Kuiper).

Comment: of the above list two species are, I think, very doubtful, viz. Hydrobia ulvae and "Planorbis", and should be omitted until specimens are forthcoming. That indefatigable colonist Potamopyrgus jenkinsi has apparently not yet succeeded in establishing itself on Fair Isle.

REFERENCES

- | | |
|---|--|
| Anon, 1910 | Some terrestrial invertebrates from Fair Isle (collected by Eagle Clark). <u>Ann. Scottish Nat. Hist.</u> 1910; 251. |
| Williamson, K., Parslow, J.L.F. and Dance, S.P., 1959 | Snails carried by birds. <u>Bird Migration</u> vol. 1: 91-93. |

Nora McMillan, Merseyside County Museums, Liverpool

INTERNATIONAL MALACOLOGICAL CONGRESS 1983 IN BUDAPEST, HUNGARY

Dr. J. G. J. Kuiper of the Dutch Malacological Society made a preliminary visit to Budapest in which he looked at some anticipated difficulties. He came away convinced that Budapest would be an excellent venue for the next Congress in August 1983 and his findings were reported in the Newsletter of the Dutch Malacological Society. A photocopy of this was sent to me by Dr. Peter Mordan of the British Museum (Natural History) and the paper was translated from the Dutch by John and Marianne Llewellyn-Jones to whom I am most grateful for their efforts. I have omitted the introduction, some sections which are only relevant to Dutch participants but the bulk of the paper is presented below. Members of the Society who intend to go to Budapest will find it very reassuring.

June Chatfield

Translation of parts of Dr. Kuiper's paper

Border formalities. I travelled by train. At the border the train stopped for customs checks. The train stopped for half an hour while the customs officials passed along the train but didn't look in our luggage either on entering or leaving the country. On entering Hungary one should fill in a form stating the amount of money one is carrying. This is necessary to justify taking it out of the country again. I didn't see such a form anywhere, I didn't ask for it and I had no problems on my return journey. In fact the formalities with the Hungarians were finished within 5 seconds, i.e. a stamp in the passport and visa.

Money. The monetary unit is a Forint (exchange rate about 60 to £1 - J.C.) There

are coins of 1, 2, 5 and 10 and notes of 20, 50, 100 and 500 Forints. I changed my money at the border. The rate is lower there than at the Tourist Bureaux and Banks. I don't know why but I believe it is simpler. One receives a receipt which has to be kept carefully for the return journey in case of returning any Hungarian money not used.

Language. The opinion of being able to use German everywhere in what used to be a German/Hungarian monarchy is a fallacy. In the Central Station on arrival not a single word of German was used anywhere nor at any of the Information Centres. My experience is that only a few intellectuals speak German and often with great difficulty. There are in Hungary a few Grammar Schools where apart from Hungarian, German, Russian and optionally Latin are being taught as well as one other language. In restaurants and food shops one has no problem as a rule. One can usually either point at what one wants or the price.

The Congress is being held in buildings of the modern campus of the University situated on the right hand bank of the Danube. The buildings are surrounded by a beautiful park. There is sufficient parking space for cars. The student rooms are rented out during the summer months as hotel rooms (every room has two beds, so not as it was in Copenhagen in 1965). In Budapest it will not be the University who run the system but professional organisers from the Tourist Bureau. There is a restaurant where meals can be taken communally. The Hungarian malacologists are justifiably of the opinion that the Congress members should be kept together as much as possible to promote contact with each other. It had also been suggested that the Congress be held in a provincial town in Hungary. But the capital proved to have more advantages. The official Congress languages are without exception English, German and French. Fortunately no Hungarian and no Russian which for us Westerners makes everything more simple.

Overnight stay at the campus is optional and if one wishes one can take a hotel room elsewhere in the city. There are many and good hotels up to and including five star. The prices of the hotel rooms are, apart from the latter, much lower than in Holland. Regarding camping sites, two are situated north of the town on the right hand bank of the Danube. The camp is divided up into plots of 50 and 60 square metres. A brochure "Hotels and Camping Sites" with details can be asked for at the M.C.C.C. (Hungarian Camping and Caravanning Club), 1088 Budapest, Museum U. 11. One can also reserve a space on the site. During the time of the Hungarian school holidays (end of August) they are obviously very busy.

In connection with the Congress excursion to the Balaton Lake, the Pusztaszer Reserve and to the north of the country, the first two areas I have visited. Whether it is possible to collect as a group is debateable especially as the organisation will be with tourist officials. I have insisted that with every coach a Hungarian malacologist with the knowledge of the area comes along also. I must admit that during excursions with many participants the collecting instinct seems to be low. The Balaton Lake is touristically attractive. The lake is surrounded by private houses of more or less regular size. Here and there one gets a surprise on seeing a more comfortable villa. The Bakony Forest north of the lake has according to the distribution maps in Soosiana a good selection of species. The border of the lake didn't produce anything.

The legendary Pusztaszer, the never-ending bottomless sandy area covered with short grass where nomads travelled with their flocks of sheep, trees grow everywhere and it is intensively cultivated. In the Reserves one gets an impression of the flora and fauna of the area. The stone curlew nests here as does the bustard. One can see the Sand Adder, Water Snake, Sand Salamander, Preying Mantis and in the boggy parts live the European Tortoise. Of the land molluscs the common Helicopsis striata and Granaria frumentum are to be found on the dry sandy places. Along the roads in the south of Hungary the Stork is seen commonly. One sees them walking around in the meadows or nesting on the telegraph poles along the roadside or on roofs of houses.

Hungary is an ideal land for the motorist with the capital as usual an exception and where the traffic is seemingly chaotic, the roads elsewhere being empty, at any rate in the spring. In the southern part of Hungary my host and I drove for nearly 1000 kms. at maximum speed of 80 km. (50 m.p.h.). The inclination to drive faster on these empty roads is great. However the police check regularly with radar. Three times we passed a control post hidden along the side of the road.

Petrol is very cheap, one can fill up anywhere and with as much as one wants. There are also Shell pumps. For 27 litres of Super one only had to put down 44 Forints. So petrol price does not prevent one from driving anywhere in the country to find the right places for molluscs. There are 221 species of land and freshwater molluscs of which there are 22 types of Clausiliidae. In 1979 the Hungarian Malacologists published in their journal *Soosiana* distribution maps of all the molluscs in their country, the results of teamwork that amateurs can be proud of.

The meals in the restaurants are well catered for and extremely cheap. In the towns more expensive than in the country. For about 50 Forints one can eat well, meat or fish, vegetables and always paprika. I have learned that there are about 20 different kinds of paprika from very mild to very strong. The food shops including butchers always seem to be well stocked with many local products. In restaurants service charge is not included in the bill, but a tip is always welcome unless you are served by the proprietor or proprietress.

Travel. Arriving in Budapest by plane one can ride in a bus without any extra cost to the centre of the city. There one can take an underground which is marked with an M for Metro and costs only 1 Forint for each and every journey. One places a coin into a slot and a turnstile lets you through. There is no ticket. Taxis according to Dutch rates are cheap.

Regarding freedom of movement I didn't come across any obvious restrictions but one has to report to the Police within 24 hours of crossing the border. If one stays in a hotel or a camp site the managers will do this for you. The Hungarians themselves, I was told, travel unrestricted outside their own country.

The leader of the group of at least fifty Hungarian malacologists is Laszlo Pinter, a sympathetic monk of the Franciscan Monastery in Budapest. He teaches Latin and German in a grammar school. He is also, for half days, Curator of the Mollusc Section of the Natural History Museum in Budapest which has been reclassified and rearranged. Besides this he is organiser of the Congress helped by nine other Congress Committee members. The Hungarians in their enthusiasm hope that this Congress will outshine all the previous Congresses of the *Unitas Malacologica* by having the highest number of participants. In the first instance because all East Block Malacologists who are 'rare birds' in the West are sure to want to be present out of solidarity and secondly because the Hungarians are convinced that the Western malacologists will not let this unique chance go by and come to talk to all Eastern Block malacologists.

All I can do now is to encourage everyone to go to this Congress and make it a success for the hospitable Hungarians who want to be in contact with foreign malacologists so much. It is also a misconception that such Congresses are only of interest to the professional malacologist. There is also much to be learnt and experienced by the amateur. If you would like to receive a circular and information about the *Unitas Congress* in Budapest, Hungary 1983 please write to:
Herrn. Laszlo Pinter, The Hungarian Natural History Museum, Baross U.13, Budapest H-1088, Hungary.

Congress Programme to follow.

BUCCAL REGURGITATION
(Opisthobranchia : Ascoglossa)

INTRODUCTION

Kathe Jensen (1981) described the feeding methods of some Florida ascoglossans, including three species that practise the little-known process of buccal regurgitation. Her observations were thorough and she was the first to suggest the probable function of the process. In the Abstract of her paper she stated,

"New and detailed observations of Elysia ornata, Placida kingstoni, and Ercolania funerea show that after cell sap has been sucked into the pharynx [= buccal cavity] it is returned to the filament. The process may be repeated once or twice before cell sap is eventually pumped into the stomach. Cell sap is probably mixed with saliva in the pharynx to reduce its viscosity and pharyngeal = buccal regurgitation facilitates the withdrawal of the remaining sap".

Ascoglossans are highly specialised herbivores. Part of the radula forms a lancet that pierces an algal filament and the buccal mass acts as a suction pump to extract the protoplasm or sap. Many species feed on algae, such as Caulerpa, Codium and Bryopsis which have tubular filaments with few transverse walls so that for a single puncture a considerable amount of sap could be withdrawn. These algae are termed coenocytic or siphonous. Since much energy is expended in piercing and withdrawing the leading tooth of the lancet, and in extracting the sap, it is advantageous for an ascoglossan to feed on coenocytic algae. Buccal regurgitation is an ancillary feeding process that enables an ascoglossan to obtain the maximum amount of protoplasm with the minimum effort. The sap that is returned into a filament contains saliva that probably reduces the viscosity of the denser protoplasm which contains chloroplasts and nuclear material. Jensen remarked that Placida kingstoni can withdraw sap from a distance greater than the length of the animal in both directions from the point of piercing.

The present paper adds two more to the list of ascoglossans known to regurgitate. It contributes new anatomical details that suggest how the regurgitation flow may be effected. Similar details may assist in selecting species for further researches on buccal regurgitation.

DESCRIPTIONS

Caliphylla mediterranea is a common Mediterranean ascoglossan that feeds on Bryopsis hyponoides. When it feeds, protoplasm can be seen surging to and fro in that part of the filament that lies nearest the animal's head, and this is the sign of buccal regurgitation.

Regurgitation may be accomplished in the following manner. The sphincter (Fig. 1 (page 85), sm) contracts and seals the entrance to the oesophagus (oe). Sap and saliva are diverted into the buccal pouch (bp) and when it is full the normal pumping action ceases momentarily. The muscular wall of the pouch (lm) contracts strongly and ejects fluid into the filament. During normal pumping action the sphincter is relaxed and sap is sucked out of the filament by pulsations of the interseptal muscles (is) and those of the odontophore (od). The salivary duct (sd) opens into the posterior part of the buccal cavity (bc) where it can deliver saliva when the animal feeds.

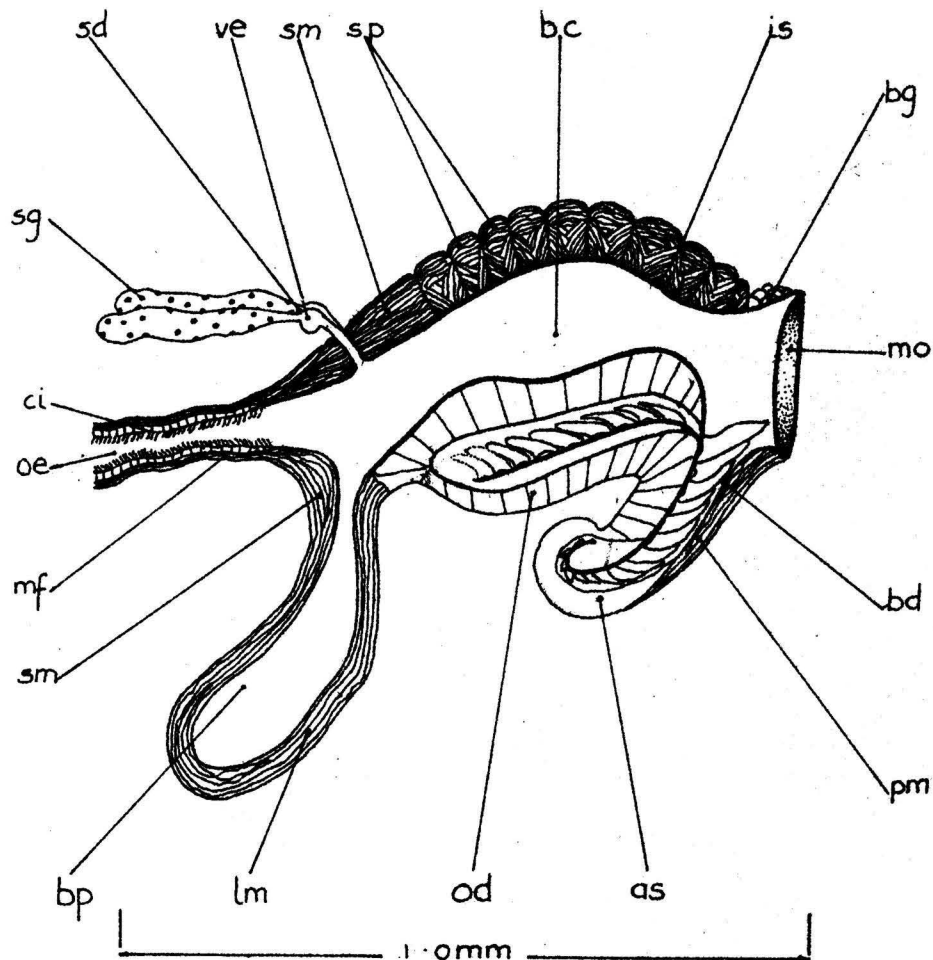


Figure 1. Diagram of the buccal mass of Caliphylla mediterranea

as, ascus; bc, buccal cavity; bd, buccal diverticulum; bg, buccal gland; bp, buccal pouch; ci, cilia; is, interseptal muscles; lm, longitudinal muscles; mf, muscle fibres; mo, mouth; od, odontophore; oe, oesophagus; pm, protractor muscle; sd, salivary duct; sg, salivary gland; sm, sphincter muscle; sp, septa; vs, vesicle; Note the length of salivary gland and duct is about 4mm and is shortened on the diagram.

Hermaea bifida is a rare British species that feeds on the red seaweed Griffithsia corallinoides. The head of the animal is semi-transparent and when it feeds a thin red stream of sap can be seen flowing through the buccal cavity into the oesophagus. Then the flow stops and reverses direction showing that regurgitation is taking place. The buccal pouch lies ventral to the buccal mass and when full has a rosy tinge that quickly disappears during regurgitation.

COMMENTS

Brüel (1904) was probably the first to observe buccal regurgitation, though he did not appreciate its significance. On page 89 of his thesis he described the feeding of Hermaea dendritica (= Placida dendritica). He stated "After a filament is pierced sucking begins which immediately sets the contents of the algal filament in motion from both sides. After some time the flow suddenly moves backwards into the filament, but for a short distance". Figure 2C of this paper shows that P. dendritica does not possess a buccal pouch, but it has a posterior surface muscle (psm) which may assist in regurgitation.

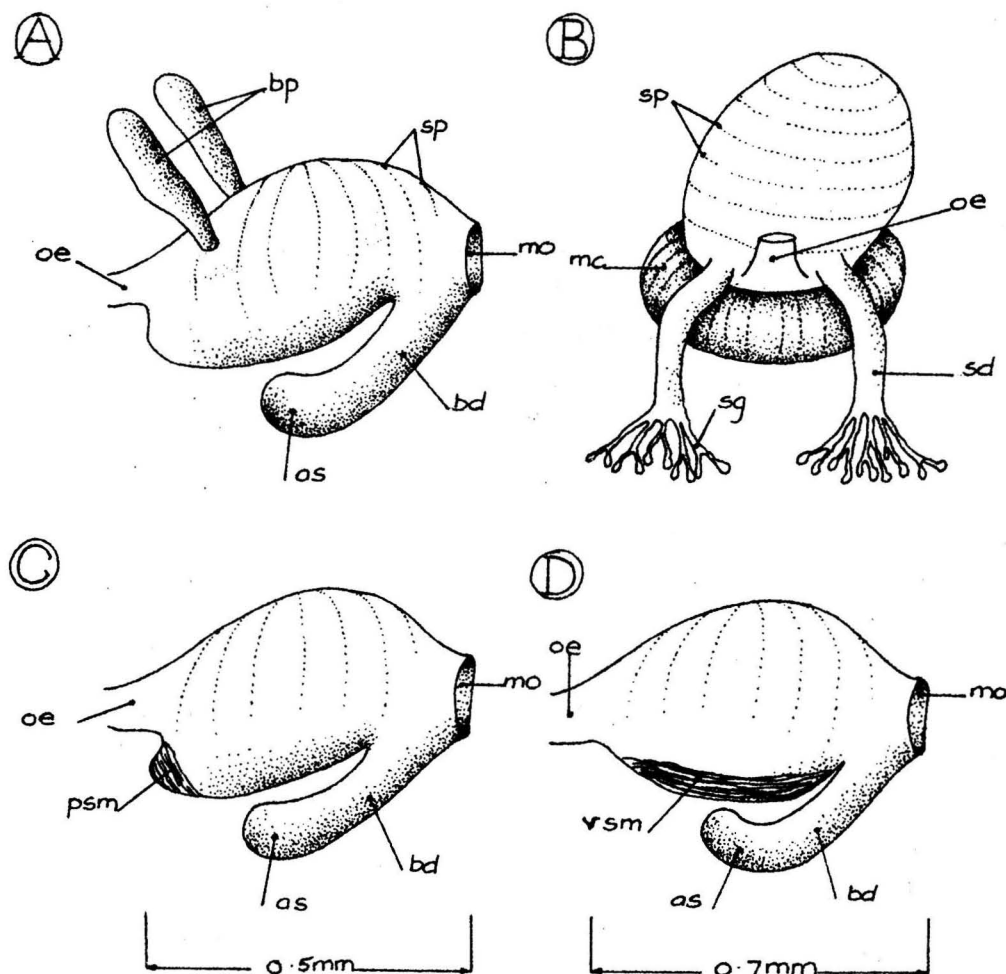


Figure 2. External features of buccal masses (diagrammatic)

A. Tamanovalva australis

B. Oxynoe sp. (posterior-dorsal view)

C. Placida dendritica

D. Placida viridis

as, ascus; bd, buccal diverticulum; bp, buccal pouches; mc, muscular collar; mo, mouth; oe, oesophagus; ps, posterior surface muscles; sd, salivary duct; sg, salivary gland; sp, septa; vsm, ventral surface muscles. Surface muscles may be difficult to distinguish in serial sections. However, they can be clearly seen if the buccal mass is removed by fine dissection after a general stain (aceto-carmin or safranin O) has been used.

The paired buccal pouches of bivalved ascoglossans (Fig. 2A, bp), the muscular collar of Oxynoe spp (Fig. 2B, mc) and possibly the ventral surface muscles of Placida viridis (Fig. 2D, vsm) suggest that the animals regurgitate. But the proof lies in patient observation of the living animal, with a binocular microscope having a wide field of view at magnifications of x25, to x50.

ACKNOWLEDGEMENTS

I thank Dr. U. Salghetti-Drioli for providing me with living Caliphylla mediterranea and Dr. J. Dune for living Hermaea bifida. I thank also Miss N. Kenna of the Camberwell School of Art for drawing Fig. 1 and Fig. 2.

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Tom Gascoigne

THE AMMONITE CAPITAL: A VICTORIAN COMMENT

Recently I drew attention to an unusual type of capital found in some classical buildings of the 18th. and early 19th. centuries - a variation of the Ionic in which the volutes are replaced by ammonites (Newsletter No. 80 (1982): 366; an illustrated and expanded version of this article appeared in Country Life, 27 Jan. 1983). The capital was invented by the architect George Dance (1741-1825) and first used in 1788 on the facade of his 'Shakespeare Gallery' in Pall Mall. By the Victorian age the idea had been ridiculed and forgotten, so that the following comment by a successful London professional architect of the period is somewhat unexpected and I think worth quoting. The author is Samuel Angell, F.I.B.A. (1800-1866). Referring to Dance's Shakespeare Gallery, he especially praises 'the pilaster capital, one of the happiest and most original efforts that has been produced upon the few varieties we have from the invention of Callimachus. The successful application of the ammonite here introduced for the volute is surely a lesson to us that we need not confine our ideas for enrichments to Nature's Flora, but that in her shells and aquatic productions there is a rich and wide expanse for the student to avail himself of, and to apply in the enrichments of his art. It has often surprised me that after the admirable application of the Echinus by the ancients as a moulding, we have not followed up the idea by adopting the forms of other shells of equally beautiful outline.' (from 'Sketch of the professional life of George Dance, architect, R.A.' The Builder 5 (1847): 335).

(Note: the reference to the Echinus is to the supposed derivation of the cushion-like form of the Greek Doric capital (and of mouldings with similar profiles) from the shape of an inverted sea-urchin).

Michael Kerney

OCCURRENCE OF LIMAX TENELLUS MULLER NEAR KIDMORE END, S. OXFORDSHIRE

On 4th. December 1982 whilst examining the molluscan fauna of Green Dean Wood, (N.G.R. SU/6878), near Kidmore End, Oxfordshire I found five specimens of the slug Limax tenellus beneath a beech log. On 11th. December 1982 another specimen was located beneath a smaller log adjacent to the original one.

Although this is a new 10 km-square record it is not a new Vice-County Record (V.C. 23), however it is an interesting extension of the known range of this slug. The only previous record from V.C. 23 is from Woods at Checkendon, dated 1909, in the next 10 km-square to the north (M. P. Kerney pers. comm.).

Green Dean Wood varies in elevation between 80 and 95 m O.D. The higher area is essentially a beech plantation (Fagus sylvatica) of recent origin on Plateau Gravels overlaying chalk, whilst the lower area, where L. tenellus was found, is open beech woodland directly on chalk. These trees are approximately 100 - 120 years old.

L. tenellus is usually considered to be restricted to old woodlands. However, close to the site in Green Dean Wood sub-fossil shells and opercula of Pomatias

elegans (Müller) were found in some numbers. In Highland Wood, a wood of similar age and structure, separated from Green Dean Wood by the A4074, sub-fossil Pomatias elegans and a single Helicella itala (L.) shell were found. Hence the question of whether or not L. tenellus is really restricted to old woodland was raised.

Maps dating back to 1790 held in the Reading Reference Library and back to 1766 in the Oxfordshire County Archives, showed both woods to have more or less the same boundaries as today. Written evidence went back further with a reference to Hydeland Grove (Highland Wood) dated 1534 in Margaret Gilling's book 'The Place-Names of Oxfordshire', (C.U.P. 1954). In the context of Green Dean Wood it is probably safe to say that L. tenellus is a relict species of a once old beech wood that has since been replanted.

C. Oldham in a paper published in J. Conch., vol. 18, pp. 209-210, 1928, referring to the distribution of L. tenellus in Britain said '... its history is an apt illustration of how an animal may be overlooked if we are ignorant of its mode of life.' It is, however, easy to assume knowledge of the 'mode of life' but ignore the long-term history of the site.

Michel R. Hughes

A BIOLOGICAL RECORDING WEEKEND NEAR SELBORNE, HAMPSHIRE

Over the weekend of 1 - 2 May 1982, a multi-disciplinary biological recording meeting was held which undertook the preparation of species lists for Noar Hill, Selborne (a nature reserve of the Hampshire and Isle of Wight Naturalists' Trust) and Shortheath, Oakhanger which is a Site of Special Scientific Interest. As is usual for sites of this kind, the wild flowers, birds and butterflies have been investigated, but there is still a need for lists of some of the more obscure groups like molluscs, together with an assessment of the ecology derived from the interpretation of fauna lists. This meeting was held under the auspices of the Hampshire Environmental Record Centre which is part of the county museum service and all records have been sent to this data bank. In addition to work on mosses, liverworts, lichens, woodlice, millipedes, centipedes, insects, harvestmen and pseudoscorpions in which members of this Society were involved, we also participated in mollusc recording, although the long dry spring made collecting far from easy.

Saturday 1 May was devoted to recording on Noar Hill (SU/74-31-), an area of chalk grassland developed on abandoned chalk pits and one where plant succession was under way giving rise to some scrub and with very little bare chalk rubble. Cernuella virgata was not found alive and the snails were typical of a stable, well-developed turf. In addition to the downland habitat of the nature reserve, an investigation was also made of the fauna of the surrounding beech hanger. Altogether 34 species of slugs and snails were found in the reserve and 27 species in the beech wood. The assemblage of species was typical of chalk grass and woodland habitats in a southern location: there were no particular rarities, and the most unusual species was Macrogaster rolpheii that has a comparatively limited distribution, mostly in the south-east of Britain, but is remarkably abundant in the Selborne area. The few obvious gaps in the list are slugs and it is hoped that moist autumn weather on a future visit will bring out remaining species like the tree slug, Limax marginatus, which must have been hidden away deep in crevices in trees.

Sunday 2 May was spent at Shortheath Common (SU/77-36-), a remarkable site for heathland and bog plants, but with soil pH levels mostly in the range of 4 - 5, it is not surprising that molluscs were limited both in variety and in numbers. Twelve species of land snails and slugs were found and 1 species of freshwater snail in the lake (Gyraulus albus). The molluscs recorded were mostly slugs and thin-shelled glass snails (zonitids) which do not need much lime, but there were some species more typical of richer habitats (Monacha cantiana, Cepaea nemoralis and

Trichia striolata) living around the car park, a disturbed area where the soil was no longer acid (pH7.5). In spite of the acid nature of Shortheath Common, we did not locate the calcifuge snail Zonitoides excavatus and that remains to be searched for on another occasion.

Full species lists are in the Hampshire Environmental Records Centre, Chilcombe House, Chilcombe Lane, Bar End, Winchester, Hampshire. If any members of the Society would like to contribute lists of molluscs for Hampshire sites, they should write to Mrs. Janet Grant at the above address who will send sheets for entering the records.

June Chatfield

SOME RARE AND INTERESTING CONES

The collection of cone shells in the Zoological Museum of Cambridge University is large and varied, and comprises several individual collections, principally those of Jane Saul and R. MacAndrew.

The following is a description of some of the more rare and interesting shells.

Conus adamsonii Broderip, 1836

There is only one specimen of this very rare species, and it comes from the Saul collection. The species is seldom seen in good condition, and this specimen is no exception, being very faded in colour, and the thick lip is worn blunt and smooth. What colour remains is a dull cream, with sparse orange-brown spots. There is a trace of white powder inside the white-coloured mouth and on the columellar lip. It is a solid, bulky cone, 40.1mm in length, and the sides are slightly inflated below the shoulder, which is broad and rounded, and the spire low and bluntly pointed. However, the shape of the shell, unusually broad, and smoothly tapering, and the gloss on the wide, rounded spiral ridges, make it still an attractive shell.

Conus aurisiacus Linnaeus, 1758

There are six specimens of this species, but three are of small size and look like beach specimens. The other three shells measure in length 57.6mm (from the Saul coll.), 57.5mm and 49.8mm (both the latter are from the MacAndrew coll.). The shell from the Saul collection, measuring 57.6mm in length, is an interesting specimen. It is a moderately heavy shell, with quite a good gloss, broadly cylindrical and widest just below the shoulder. It has a very bad heal break on the dorsum, and another heal break on the columellar lip. The lip and the base are both very rough and chipped, but although the shell has faded a little, the colours are still good, and it appears a bright, attractive shell. The body whorl is white, tinged with pink. There are heavy, raised spiral ridges, and these are coloured in alternate dashes of white and dark chestnut. Two broad pink spiral bands brighten up the shell, one at the shoulder, and one in the mid-body area. The shell measuring 49.8mm from the MacAndrew collection, is in much better condition, but it is smaller. Its colouring is similar.

Conus bullatus Linnaeus, 1758

There are six specimens of Conus bullatus in the Museum collection. Three are from the Saul collection, two from the MacAndrew collection, and one from the S.P. Woodward collection. The largest shell is from the Saul collection, measuring 65.9mm in length and 34.1mm at its widest point. It is quite a thick, solid shell, but light in weight. The shape is quite distinctive, smoothly convex, broad below

the shoulders, and narrowing sharply from the mid-body to the base. The spire is unusually high in this specimen, there are stepped whorls, and the protoconch is almost perfect. The lip of the shell is smooth and unchipped, and the mouth is bright orange in colour. The body whorl is mainly orange, with an irregular all-over pattern of white spots. There is also an irregular scattering of pinkish-brown spots.

Conus cedonulli Linnaeus, 1767

There are five specimens, three belonging to the Saul collection and two to the MacAndrew collection. The largest specimen comes from the Saul collection and measures 42.5mm in length. This shell is moderately heavy, and the sides are slightly convex. The shoulders are broad and rounded. The spire is heavily coronated and moderately high. There are growth flaws on the body whorl, and the lip is very rough, but perfect specimens are unusual in this species. The shell is bright yellow-gold in colour, with white map-shaped patches outlined in red-brown. The body whorl is covered with broadly spaced, fine spiral ridges, bearing small granules. These are red-brown in colour and give the appearance of spiral lines, made of red-brown dots, covering all the shell regularly.

Conus granulatus Linnaeus, 1758

There are seven specimens. Six from the MacAndrew collection, and one from the Saul collection. The Saul specimen is labelled Conus granulatus var. verulosus Kein. It is worn and faded, and probably a beach specimen. The best one is from the MacAndrew collection and measures 38.4mm in length. This shell is moderately heavy. The shoulder is quite broad and roundly angled, and there is a moderate spire. The body whorl is pinkish-cream in colour and covered with broad spiral ribs, separated by narrower grooves. These spiral ribs are coloured with bright pink, dark brown, and light brown spots or dashes, making brighter bands, spiralling round the body of the shell. There are dark brown stripes at the shoulder, and the base has a pink background with dark red and dark brown dashes. There is a growth mark half-way round the body whorl, but the lip is smooth.

Conus thomae Gmelin, 1791

There is only one specimen of this very rare shell and it belongs to the MacAndrew collection. It is a good looking, strong shell, measuring 69.4mm in length, moderately light in weight, and with a very high gloss. The shoulders are broad and narrowly angled. The spire is moderate, and sharply pointed. The body whorl is glossy white, the sides are straight and taper to a long narrow base. The lip is smooth and in quite good condition except for slight roughness near the base. The mouth is white. The body whorl is covered with many spiral rows of small orange-brown squares fused into short dashes. These rows fuse into two wide spiral bands of darker orange in the mid body. The orange colour is brighter in the pattern on the shoulder.

Conus violaceus Gmelin, 1791

There are three specimens all labelled Conus tendineus. Two are beach specimens and come from the J.S. Gardiner collection. The third is a large and beautiful specimen from the MacAndrew collection measuring 52.6mm in length. The shell is fairly light, very elongated and cylindrical in shape. The sides are slightly convex below the shoulder, and then straight. The shoulders are narrow and not distinct from the moderate spire. The body whorl is covered from base to shoulder with narrow spiral ridges separated by deep grooves. These are absent at the shoulder. The shell is dark brown blotched with patches of white. The white coloured area is greater on the dorsal side. There is a small area of violet colour at the base. This is a really glossy shell, and it is the high gloss on the spiral ridges that is most attractive, with the swirling pattern of white against shiny brown. The mouth is white with a slight tinge of violet near the lip. The

lip and the protoconch are in very good condition.

I am very much indebted to Dr. Martin Bishop, Associate Curator of Malacology at the Zoological Museum, for allowing me access to the collection, for initially sorting the shells to be identified, and for his advice and help with identifications.

Barbara Spalding

EXTRACTS

TRAVELS IN BRITISH GUIANA 1840-1844, by Richard Schomburgk.
Translated and edited by Walter E. Roth.

Volume 1

Chapter 4, p. 82, para. 286 & 7

We reached the mouth of the Waini and landed on a sandbank.
"The extensive elongate bank consisted of an accumulation of sand, shell, and shell fragments which the powerful current had collected there.
Although the real native country of many of these snails and shells was the Indian Ocean, Senegal, China and the South Seas, they must nevertheless also be forthcoming on some as yet unknown stretch of the Atlantic Ocean, because the current could not have brought them from these situations here. I found *Marginella coerulescens* Lam., *Natica marochiensis* Lam., *Buccinum Miga* Adans, *Dolium fasciatum* Lam., *Nucula rostrata*, *Fusus Morio* Lam., *Pyrula melongena* Lam., *Purpura cataracta* Lam."

Chapter 4, p. 151, para. 529

"Even at low tide the place was swampy."
"Imagine a fair number of children tumbling about like goblins in the ashes and heaped up dirt, and likewise men as well as women stiffened with similar filth."
"Great heaps of emptied shells of a large snail (*Ampullaria urceus* Fers), which I saw here for the first time, led us to believe that the animal must be a favourite with the residents."

Chapter 4, p. 161, para 561

"A large quantity of *Ampullaria urceus* which some bustling women had already boiled and prepared by daybreak the following morning, seemed to show pretty plainly that, like herring salad with us, it serves as a pick-me-up for the disturbed nervous system. The mollusc is cooked in its shell, which is then broken and the entrails of the creature removed: sprinkled with vinegar the muscular portions offered quite a delicious dish."

Chapter 7, p. 233, para 708

Itaballi Cataract, Essequibo River.
"I found a number of pretty snails, *Melania*, sticking on to the granite crags immediately below the surface of the water, but it would have been trouble spent in vain to search for a single undamaged specimen amongst the innumerable quantities, --- all were mutilated, and several turns of the pointed whorls were broken off in every one. Just as the rocks below were dotted with these molluscs, so were those above it, as well as the river-side trees, festooned with a similarly countless number of small bats. I saw these wonderful creatures hanging head down not only upon the northern aspects of the trees and rocks, but also in full glare of the sunshine."

"On arriving at the banks of the Quayé, we greedily sought in vain the refreshing and cooling waters which the glowing sun had long ago consumed: its bed like the banks of the Amucu lay full of shells of *Ampullaria guianensis* and *papyracea* Spix. But what passionate mollusc-eaters the water and swamp fowl of this district must be, for amongst the thousands of empty shells not a single one was found uninjured!"

TRAVELS IN BRITISH GUIANA 1840-44, by Richard Schomburgk.

Translated by Walter E. Roth, Vol. 2, J.J. Weber, Leipzig, 1848.

Chapter 9, p. 278, para. 656

"When, next morning, armed with a gun and accompanied by some Indians, I strolled along the swamp, I came across several heaps of the shells of *Ampullaria guianensis* and *papyracea*, which were stacked either under one of the trees or at least close to a bush. From some of the shells the mollusc had been extracted only a short time before, but the large proportion on the other hand must have been exposed for years to the weather. From what the Indians said it was a black ibis of which they showed me several wading around in the swamp, that was the zealous collector. This peculiarity of eating its prey in a fixed spot I had never heard of before with any bird, and hence it was all the more regrettable that its caution and shyness frustrated all our efforts to obtain a specimen. I found eight such heaps, each of which was four feet high. Probably each bird had its own spot."

Chapter 11, p. 348, para. 846

"In the many small forest streams which we passed during the course of the day, but which are almost completely devoid of water during the dry months, I found *Ampullaria orinoccensis* in considerable quantities: I sought in vain however for the large *Ampullaria urceus*. I was satisfied here that the *Ampullaria* living in the small creeks that are mostly dried up during the dry season lie embedded in the solid mud for months at a time without having a drop of water and yet continue to live within their operculum-closed shell: my attention was drawn to the fact by my companions ploughing them up from out of the hardened bottom, for they regard these snails as delicacies."

CANOE & CAMP LIFE IN BRITISH GUIANA, by C. Barrington Brown, 1876. Published: Edward Stanford.

Chapter 14, p. 367

"In the sands at the bottom of the shallows in the narrow parts of the Berbice River I found numbers of a species of *Mycetopus*. Fine river shells are very abundant on many of the rivers, especially of the *Melania* family, which inhabit the running water of the cataracts. *Castalias* are found on the Rupununi, and *Hyria syrmatophora* and *Hyria corrugata* on the Essequibo, near Oupocari."

from Betty M. Smith

CONCHOLOGICAL SOCIETY OF GREAT BRITAIN & IRELAND

963rd. (Ordinary) Meeting held on 18th December 1982 at B.M.(N.H.)

In the Chair: Mr. J.F.M. de Bartolomé with 43 members and friends present.

Nominations and Elections to Membership: 4 Full Members,

Gillham, Mrs. M.J., [REDACTED], Thurcaston, Leicester, [REDACTED]
Meldrum, D., [REDACTED], Uphall, West Lothian, Scotland.
Narbeth, C., [REDACTED], St. Albans, Herts., [REDACTED]
Tattersfield, Dr. P., [REDACTED], Horfield, Bristol, [REDACTED]
1 Junior Member,
Taylor, Simon, [REDACTED], Danbury, Chelmsford, Essex, [REDACTED]

Paper Read: 'Zonation of intertidal Mollusca on Malta' by G.W. Richards.

Announcements and Correspondence

It was announced that this meeting marked the centenary of the appointment of a Recorder of the Society (in December 1882).

Any other business

Natural history stamps were auctioned for the benefit of the Society's funds.

Meeting closed at 5.36 p.m.

Exhibits

- | | |
|----------------------|---|
| A.R. Arthur | - Prizes of the Mediterranean! |
| J.F.M. de Bartolomé | - <u>H. aspersa</u> & <u>H. laticosta</u> from odd localities & in odd circumstances. |
| T. Crowley | - Golden Cowry & cameo shell. |
| S.P. Dance | - Compendium of Seashells by R.T. Abbott & S.P. Dance. |
| M. Fogan | - <u>Vitrea subrimata</u> . |
| J.D.R. Fryer | - Mixed shell assemblages. |
| T. Gascoigne | - <u>Conus</u> sp. |
| D. Holyoak | - Clausiliidae from the Balkans. |
| M.R. Hughes | - <u>Limax tenellus</u> from a 'recent' beech wood near Reading. |
| J. Light | - Aberrant form of <u>Polinices poliana</u> from Porthcurno. |
| J.E. Llewellyn-Jones | - The Story of a Shell: 'The Mussel'. |
| P.E. Negus | - A group of Triassic ammonoids. |
| | - Fossil molluscs from one of the James Tennant Collections, with an article by Diana Negus. |
| J. Nunn | - Assorted information of interest to the Society. |
| G. Osborn | - <u>Placuna sella</u> Gmelin 1791. |
| T. Pain | - The European species of <u>Plicifusus</u> Dall, 1902 (Buccinidae). |
| | - Two rare land pulmonates from Peru and Malaya. |
| A. Rundle | - Intestines and stomach of a fossil <u>Nucula</u> . |
| E. Sandor | - Family Buccinidae. |
| | - A shell with a history. |
| R.P. Scase | - <u>Murex cervicornis</u> , <u>Strombus campbelli</u> & <u>Macra coppingeri</u> from the Expedition of the H.M.S. 'Alert' 1878-1882 and their connection with Staff-Surgeon Coppinger & Lt. Col. J.F. Bensley. |
| | - Also a shell key-ring received 2 days ago from N. Queensland. |
| M. Seddon | - Clausiliidae from northern Norway. |
| B. Verdcourt | - Snail look-alikes; larval cases of Psychidae (Lepidoptera), bag-worms. |
| N. Withers | - Land shells from Paphos, Cyprus. |

The 964th (Ordinary) Meeting held on 15th January 1983 at B.M. (N.H.)

In the Chair: Mr. J.F.M. de Bartolomé with 49 members and friends present.

Death of Members: The deaths of 4 members, occurring over the last year were announced; Mr. R.B. Janson, Mr. F.G. Wagner, Miss B. Temple, Prof. H.P. Moon (Emeritus Professor of Zoology, Leicester University).

Nominations and Elections to Membership: 3 Full Members,

Meyer, M., [REDACTED], Durban North, Natal 4016, South Africa.
Mildren, A., [REDACTED], Winterbourne Down, Bristol, [REDACTED]
Perrone, A., [REDACTED], 74100 Taranto, Italy.
Transfer to other membership: 1 (Junior to Full)
Degazon, Miss Susanna, [REDACTED], Bedale, N. Yorkshire.

Membership Subscriptions: Mrs. Fogan reminded all members who pay by Bankers Order to update them.

Lecture: 'Litter' by Mrs. E. B. Rands

Announcements and Correspondence: Mr. Pain announced that in future, details of field meetings would appear in the Newsletter, beginning with the March issue.

Any other business: A book was auctioned for the benefit of the Society's funds.

The meeting closed at 5.05 p.m.

Exhibits

A. Norris	- British Vertigos
R.W. Morrell	- Opisthostoma from Borneo & Sarawak
	- Miniature Eocene fossil mollusca from Gant, Hungary
	- paratype of <u>Palaina pagodula</u> Bavay & Dautzenburg, Vietnam
R.P. Scase	- 3 specimens of Atlanta & Carolina
W. Karo	- <u>Cypraea guttata</u> Gmelin 1791 Bohol, Philippine Islands
A.P. Oliver	- <u>Bullas</u>
E. Sandor	- Family <u>Buccinidae</u> , Genus <u>Engina</u>
	- Family <u>Mitridae</u> , Genus <u>Vexillum</u> , Subgenus <u>Pusia</u>
J. Nunn	- Assorted information of interest to the Society
Mrs. E.B. Rands	- 'Litter' and various rubbish
T.E. Crowley	- 'Porcupine and Lightning' shells
T. Pain	- 1. Genus <u>Opisthostoma</u> Blandford 1861 (Cyclophorides) S. India - Malaya - Borneo
	2. Genus <u>Tomocyclus</u> Crosse & Fischer 1872
	Type by original designation <u>T. simulacrum</u> (Moralet)
	(Prosobranchia - Cyclophoridae) Alta Vera Paz Prov.
	Guatemala (endemic)
B. Coles	- Some common Jamaican land shells found by sieving leaf litter

965th. (Ordinary) Meeting held on 19th February 1983 at B.M. (N.H.)

In the Chair: Mr. J.F.M. de Bartolomé with 41 members and friends present.

Nominations and Elections: 6 full members, 1 Family, and 2 transfers of membership,

Alonso, P.-M., [REDACTED], Salamanca, Spain.

Miller, D.J.P., [REDACTED], Colchester, [REDACTED]

Moncur, A., [REDACTED], Aberdeen.

Naggs, F.C., Dept. of Zoology, British Museum (Natural History), Cromwell Road,
London, SW7 5BD

Norrie, Capt. D.J., NI Regt. AAC, BFPO 808

Ventris, P.A., Subdept. of Quaternary Research, Botany School, Downing Street,
Cambridge.

Dr. M. Worsfold and Mr. T.M. Worsfold, [REDACTED],
Oswestry, Salop, [REDACTED]

Transfer of membership: Junior to full member,

Gaywood, M., [REDACTED], Ottery St. Mary, Devon, [REDACTED]

Full to family member,

Wilson, Miss A., and Mr. D.E. Wilson, [REDACTED], Hall Green, Birmingham,
[REDACTED]

Announcement: The Trustees have received a certificate of 10 $\frac{1}{4}$ % Exchequer Stock to value of £2,200; with an accompanying note: 'For the Conchological Society in lieu of a legacy'. The Council has passed a vote of thanks to the anonymous donor, and this will be acknowledged in the Newsletter.

Lecture: 'Land Snails of the American Mid-West' by Dr. J. Chatfield

Announcements and correspondence: Mr. R. Mitchell was due to talk to the Society on April 16th. He is now unable to do so, but will be able to do so on May 21st. The Open Exhibition will therefore be moved to the April meeting.

The meeting closed at 5.07 p.m.

Exhibits

- | | |
|---------------------|--|
| E. Sándor | - Family <u>Ovulidae</u> Fleming 1828 |
| A.P.H. Oliver | - The Harps |
| A. Seccombe | - Strombs |
| P. Palmer | - Fossilised intestines of bivalve molluscs - <u>Nuculidae</u> |
| Hon. Editor | - Books received for review |
| B. Coles | - Some Arkansan Land Molluscs |
| J. Chatfield | - A few books, maps and specimens to illustrate the lecture on land snails of the American Mid-West |
| B. Colville | - Some American Land Snails
Books: Eastern Land Snails Burch
American Museum Guide to Shells Emmerson & Jacobs |
| J.F.M. de Bartolomé | - Levantina: Corfu to the Caspian |
| T. Pain | - The <u>Megalobulimus terrestris</u> complex in Bahia Province, Brazil |
| J. Nunn | - Assorted information of interest to members of the Society |

FIELD MEETINGS 1983 (JULY TO SEPTEMBER)

Sat.-Sun. 9th-10th July Dawlish, South Devon.

Leader: Miss J.T. Sawyer.

Marine meeting to the South Devon coast.

For details and accommodation available send S.A.E. to Miss Sawyer, [REDACTED], Wembley Park, Middlesex, [REDACTED] (Tel. [REDACTED]).

Fri. evening 8th. July - Trains from Paddington to Exeter (St. Davids) at 17.25 and 18.25, arriving 19.36 and 20.15. Advise Miss Sawyer if transport required from Exeter Station.

Sun. 24th July

Joint meeting with the Northampton N.H.S.

Leader: Mr. G. Osborn, [REDACTED], Olney, Buckinghamshire, [REDACTED] (Tel. [REDACTED]).

Meet at the Humfrey Rooms, Castilian Terrace, at 11.00.

Train dept. Euston 09.03, Northampton arrive 10.29.

Advise Mr. Osborn if coming by train.

Sat. 17th September

Calcareous habitats in South Leicestershire.

Leader: Mr. I.M. Evans (Tel. [REDACTED] - day only).

Meet at Leicester Station at 10.30. Train from St. Pancras dept. 08.45, Leicester arrive 10.10.

All records obtained will contribute towards a Leicestershire Mollusca atlas. Bring packed lunch.

Sun. 16th October

Autumn Slug Foray (Details in September Newsletter).

NOTE: Train times are given for your guidance only. Check with B.R. before you travel. A new timetable is due in May.

T. Pain, Field Meetings Organiser

[REDACTED], Millbank, London, [REDACTED] (Tel. [REDACTED])

SHELL IDENTIFICATION KITS - THANK YOU FOR YOUR HELP

The Shell Kits have been available now for nine months and we have been able to make a small profit from the sales, having covered our set-up costs. Many members have given us invaluable help by sending both boxes and shells, some of which were specially collected. We would like to say a heartfelt thank-you to the following, without whose assistance the project would not have come to fruition: Mrs. E.B. Rands; Miss K.M. Cobley; Mr. and Mrs. C.D. Drake; Miss R.S. Holt; Mr. I.J. Killeen; Dr. J. Llewellyn-Jones; Miss J.M. Nelson; Dr. J.D. Nunn; Dr. A.J. Rundle; Miss J.T. Sawyer; Dr. S.M. Turk; Mr. F.R. Woodward; Mr. D.R. Worth and many others.

The Identification Kits are intended for those who are beginning to collect British marine shells and need a little help getting to know the various families of molluscs in our fauna. It is so much easier to name shells by comparing them with actual specimens than trying to match them with two-dimensional book illustrations. Each kit contains a set of shells, a checklist, introduction, conservation leaflet and Conchological Society leaflet. Each species is in a self-seal polythene bag with a label which gives the scientific name, one English name, habitat information and some assessment of rarity. Of course, all the shells in the kits are the commoner ones, which are easily found on the seashore. Because all but one of the species were collected dead there can be no question of damage to natural populations. We have endeavoured to include representatives of most of the larger families in the British fauna.

Although we do not post the Kits because of the fragility of many of the species, it is usually possible to get them to within collecting distance by asking a member of the Society who comes to London meetings to take it home with them. Alternatively, why not try a meeting? There is the usual business, scientific papers, a talk, lots of exhibits to look at and friendly people to talk to during the tea-break. There are four Kits to choose from:

Sandy shore	containing 39 species	cost £4.50
Rocky shore	containing 31 species	cost £3.50
Muddy & estuarine shores	containing 14 species	cost £1.50
Complete set	containing 78 species	cost £7.50

If you would like a kit please ring Eleanor Fogan (01-691 5684) or Celia Pain (01-821 7674), preferably in the evening, or write, our addresses are in the membership list. Please give us about two weeks notice in case the Kit has to be made up. We look forward to receiving your orders.

Eleanor Fogan
Celia Pain

GENERAL NOTES

I very much regret to announce the death of Mr. A. E. Ellis on 27th. February. He was a Past-President, Editor and an Honorary Member and contributed greatly to the success of this Society. He gave a great deal of help and advice 'behind the

scenes', often seasoned with wit, and he will be missed by all the Officers and others who came in contact with him. A formal obituary will appear in the Journal of Conchology in due course.

P. E. Negus

SEA AREA ATLAS OF MARINE MOLLUSCS OF BRITAIN AND IRELAND

Requests for members' free copies of the sea area atlas continue to trickle in but, so far, less than one in six members have claimed their copy. Plenty are still available from me by sending a size 5 "Jiffybag" or similar, addressed and stamped £1.20 (second class post).

Non-members may purchase copies from Nature Conservancy Council, Interpretative Branch, Attingham Park, Shrewsbury, Shropshire, SY4 4TW, price £6.50 incl. p. & p.

It is regretted that some of the early copies provided by NCC were imperfect in that pagination of the last few pages was muddled. Correct copies of the last few pages are available by sending me a suitable stamped addressed envelope, address below.

Will any members who can add records to those in the atlas, or who wish to work in an area or query any particulars, please write to the area representative concerned; their addresses are given in the atlas.

D. R. Seaward, Marine Recorder, 3 Summerlands, Yeovil, Somerset, BA21 3AL

THE MALACOLOGICAL SOCIETY COUNCIL has agreed that Supplements 10, 11 (and from 13 onwards) to the Journal of Molluscan Studies will be available at $\frac{1}{3}$ discount to members of the Conchological Society of G.B. & I. for bulk orders of 10 or more copies during the period that Supplements are available to their own members at a reduced rate (normally one year from date of publication).

The Supplements available are:

- No. 10 E.d.B.-R. Marcus. Systematics of the genera of the order Ascoglossa (Gasteropoda) Normal price £6
No. 11 V. Fretter & A. Graham. The Prosobranch Molluscs of Britain & Denmark Part 7 - Heterogastropoda Normal price £6

Will members who are interested in this offer please send the appropriate remittance ($\frac{1}{3}$ discount off normal price) (cheques payable to the Conchological Society of G.B. & Ireland) indicating the Supplements which they wish to purchase to the following address: Miss J. D. Nunn, [REDACTED], Upper Norwood, London, [REDACTED]. This offer closes June 1983.

DONATION

The Trustees of the Society acknowledge the receipt of a certificate for £2200 10 $\frac{1}{4}$ % Exchequer Stock 1995 given "in lieu of a Legacy".

The Council of the Society at its meeting on 19 February 1983 unanimously passed a Resolution of most grateful thanks to the Donor.

VICTORIAN NATURALISTS IN TENBY

This is the title of a paper by Dr. Margaret Davies, originally published in 1981 in The Pembrokeshire Historian, now available as an offprint. Copies are

obtainable from Tenby Museum, Castle Hill, Tenby, Dyfed, at 65p inclusive of postage and packing.

The paper gives details of a resident Tenby naturalist, Dr. Dyster and also of eminent visitors who came to study marine life there. These included the zoologist T. H. Huxley, who spent a honeymoon-cum-collecting trip in Tenby and Philip Henry Gosse, Victorian microscopist and subject of the biography Father and Son. Both of these visitors were helped by Dr. Dyster during their stay.

I AM COLLECTING UP INFORMATION ON THE COMMON EDIBLE MUSSEL - *Mytilus edulis* L. and am asking for members help. If anyone knows of or has any large, either commercially fished or otherwise, mussel beds near them that are present today anywhere around the coast of England, Scotland, Wales or Ireland could they send me brief details of place (locality), position on the beach, whether fished or not, how long you have known of its presence and any other useful facts or information. Could you drop me a line about it/them. I will reply and return postage automatically and in due course an article will, I hope, come out in the Newsletter including all or some of the results. Could you address your letter as J. E. Llewellyn-Jones, [REDACTED], Thundersley, Essex, [REDACTED].

FOR SALE. We are suppliers of tropical sea shells, land snails, coral and sea curios to collectors, schools and colleges. S.A.E. for lists.
Nature of the World, 19 Bell Lane, Fetcham, Leatherhead, Surrey.

FOR SALE. We have a LARGE STOCK on CONCHOLOGICAL journals and books. Please send your wants or your offers if you want to sell to:
ELSEVIER ANTIQUARIAN DEPARTMENT, General Manager Dieter Schierenberg,
4 Lippijnstraat, Amsterdam, Netherlands. Tel.: 20 - 861541.

ULSTER MUSEUM CATALOGUE OF IRISH LAND AND FRESH WATER MOLLUSCA. Will all Members who have ordered this publication (from Mrs. M. Fogan) please note that the publication date is expected to be in early autumn - September or October. The price is now expected to be £9.00 or £10.00.

Please send any queries or further orders to:

Mrs. H.C.G. Ross, Ulster Museum, Botanic Gardens, Belfast, BT9 5AB

BRITISH MARINE BIVALVES. Collecting between tide-marks and going for dead specimens wherever possible, I have built up a collection of exactly 100 species from the British List. With many of the remaining species being small and/or inhabitants of deep water, rate of growth of the collection has slowed down somewhat and a new find is an exciting event. The latest find was fresh specimens of *Lyrodus pedicellatus*, found in a small piece of timber washed up on the strandline at Shell Ness in Kent. I am sure that there are other members of the Society who do not allow themselves to be lured by the rather obvious attractions of cones and cowries and appreciate the more subtle pleasures of collecting bivalves. I would be pleased to hear from any such person who would be interested in swapping locations and any overseas member interested in swapping actual specimens.

W. H. Pocock (A.I.B.) [REDACTED], Farnham, Surrey, [REDACTED]

Duplicated by: SPEEDWELL PRESS, Trap Road, Guilden Morden, Royston, Herts.

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NON-MARINE ATLAS : IMPORTANT NOTICE

Preparation of the second edition of the Atlas of non-marine Mollusca of the British Isles is now well under way. I should therefore be grateful if lists of Mollusca held by members could be sent to me as soon as possible. It is hoped that map production at Monks Wood will begin in 12 to 18 months time. All records must be entered on standard recording cards; a supply of these will be sent to any member on receipt of a stamped addressed envelope at least $4\frac{1}{2} \times 6\frac{1}{2}$ inches in size.

The new edition will show at least two date-classes on all maps: pre-1965 only, and 1965 onwards. Modern records are therefore wanted not just for the remaining poorly known areas of the British Isles (see map in Journal of Conchology vol. 31 (1982), p. 133) but also for some areas where systematic mapping first began in the early 1960s, notably around London.

A number of new features will be incorporated in the second edition, including an explanatory text to accompany each map describing habitat requirements, factors responsible for changes in distribution, and conservation problems.

Michael Kerney, Department of Geology, Imperial College, London, SW7 2BP

THE IUCN INVERTEBRATE RED DATA BOOK

The need for mollusc conservation, particularly of non-marine species, has been recognised for some years. Land snails include some of the most vulnerable terrestrial invertebrates and many species have become extinct over the last century. The accelerating rate with which natural vegetation is disappearing is a threat to terrestrial molluscs everywhere, and is compounded by the effects of introduced animals and in some cases over-exploitation. This is nowhere more noticeable than in the Pacific where the rate of extinction on many islands has been described as catastrophic. About half the species in the genus Achatinella, endemic to Oahu, Hawaii are now extinct and the endemic species of Partula in Moorea in the Society Islands may well become extinct by 1987. Even in temperate countries land snails are under severe pressure. The well known Roman snail, Helix pomatia, revered in French cuisine, has been much reduced through over-exploitation and the scattered remnant populations are under pressure from habitat disturbance and pesticides.

In many countries freshwater molluscs are in trouble from pollution and alteration of watercourses. The Freshwater pearl mussel, Margaritifera margaritifera is now threatened throughout much of Europe as a result of past over-exploitation for pearls combined with current serious pollution. The North American mollusc fauna is renowned for its wealth of endemic naiads but many of these are already extinct. The intensive effort being expended on management and recovery plans for the more

endangered species shows how mollusc conservation can be put into practice.

Although threats to marine species are less obvious, pollution and commercial over-exploitation may be affecting certain species although it is generally recognised that sensible amateur collecting will not damage populations. The Giant clams in the family Tridacnidae have disappeared over much of their range, and the Queen conch, Strombus gigas, has been seriously over-fished in the Caribbean. The need for management of such economically important species on a sustainable yield basis cannot be too heavily emphasised, and encouragement must be given to mollusc mariculture projects.

These examples, among many others, are discussed in the newly published Invertebrate Red Data Book. The IUCN Red Data Books are acknowledged as the authoritative international works on threatened species. The volume on invertebrates presents a wide-ranging and balanced set of case histories illustrating pressures on invertebrate populations and habitats and the range of threatened invertebrates worldwide. For each major phylum, the biology, significance to man and conservation requirements of the species are discussed in general and detailed accounts are given for about 200 selected taxa, 50 of which are illustrated. This volume is a small start to the massive task of documenting the world's threatened invertebrates, determining priorities and providing the information necessary to implement the appropriate action but it is hoped that it will stimulate and encourage efforts towards invertebrate conservation at the national level. Future IUCN invertebrate Red Data Books will include a volume specifically for molluscs.

The IUCN Invertebrate Red Data Book, compiled jointly by S. M. Wells, R. M. Pyle and N. M. Collins, published by IUCN, Gland, Switzerland (50 + 632 pages) is available from the Conservation Monitoring Centre, 219c Huntingdon Road, Cambridge, CB3 0DL, U.K., price £14 (inc. p & p).

N.B. In the U.S.A., Canada, Latin America and the Caribbean, orders should be placed with: UNIPUB, Box 433, Murray Hill, New York, N.Y. 10016, U.S.A.

THE MOLLUSCA OF THE ORKNEY ISLANDS

In the months May and June 1981 I stayed on Mainland, the largest of the Orkney Islands, as part of a training-course in fieldwork for my study Anthropology.

In my scarce free time I had the opportunity to collect molluscs. The Orkneys, about 100 islands of which $\pm$ 20 are inhabited, are situated at the north of the Scottish mainland. The crossing by ferry takes two hours.

Most inhabitants (+ 17,500) live on the island Mainland. There are two small towns situated on Mainland, Stromness with about 1700 inhabitants and Kirkwall, the capital, with about 4800 inhabitants. It was in this place that I did my fieldwork.

The landscape of the Orkneys is shelving but there are exceptions like the island Hoy and the cliffs. Notable in the landscape is the almost complete absence of trees. This was effected by climatic transformations about 3000 years ago. The climate is quite moderate, in summer the temperature is around 15°C and in the winter around 4°C. These temperatures are influenced by the Gulf stream. There is always wind on the Orkneys.

Fortunately I soon met Mr. J. Maeson, who showed me different find-spots. I was very lucky because Mr. Maeson drove me from one find-spot to another by car. So it wasn't necessary for me to cycle against the wind!

He also gave me the following kinds of molluscs:

from Marwick on the island Mainland (west coast): Acmaea testudinalis (Müller), Arca tetragona Poli, Emarginula reticulata Sowerby and Velutina velutina (Müller).

from Aiker Ness, Sands of Evie on the island Mainland: Gari fervensis (Gmelin).

from the Bay of Meil on the island Mainland: Zirfaea crispata (Linné).

from the Rothiesholm Bay on the island Stronsay (one of the northern islands):

Cyprina islandica (Linné) and Tricla lignaria (Linné).

In exchange I gave him most of the non-marine Mollusca which I collected (they are indicated with JM). Mr. Maeson had not collected these molluscs before. But I mostly collected marine molluscs. I hadn't enough time to collect non-marine molluscs intensively.

Non-marine find-spots (indicated with La = land or Fr₁ = freshwater):

12.05.1981: wall along the road by Saverock (co-. 43. 13.)¹

Clausilia bidentata (Stöm) JM, 10 specimens

11.06.1981: wall by Highland Park distillery (co-. 451 093)

Discus rotundatus (Müller) JM, 1 specimen

Aegopinella nitidula (Draparnaud) JM, 1 specimen

24.06.1981: Loch of Harry (co-. 303/304 129/128)

Theodoxus fluviatilis (Linné) more than 20 specimens, about half for Mr. Maeson

30.06.1981: Loch of Kirbister (co-. 374/372 073/072)

Potamopyrgus jenkinsi (Smith), Lymnaea peregra (Müller) and Sphaerium corneum (Linné) of all species more than 20 specimens, about half for Mr. Maeson

Marine find-spots. All the species are indicated in the table.

1 by Saverock (co-. 411/416 132/130.5), date 12.05.1981

small shingle-beach with sloping rocks

2 Aiker Ness, Sands of Evie (co-. 372/379 264/266), date 17.05.1981

sandy beach with rocks at one side

3 Point of Buckquoy (co-. 24./25. 28./29.), date 31.05.1981

rocky shore with some small shingle beaches and at one side a sandy beach. At low tide one can find very fine specimens in the little pools

4 Bay of Kirkwall (coastline) (co-. 443/435 126/131), date 17.06. 1981

rocky shore with a shingle beach behind it. In the sand between the rocks some specimens can be found

5 Car Ness (co-. 462/467 142/147), date 23. 06. 1981

rocky shore with a shingle beach behind it. On the shingle beach many fragments of the species Modiolus modiolus (Linné). Between these fragments also perfect specimens of this and other species. Also in the sand, between the rocks, and in the grit-banks, one can find very fine specimens of different species.

6 Mill Sand (co-. 514/516 081/079), date 23.06.1981

not a real beach, but at low tide one can walk, with boots, on the sea-bottom. This is the find-spot of the species Akera bullata Müller nana. According to R. Rendall a sub-species of the Orkneys.

7 Loch of Stenness (co-. 305/303 126/127), date 24.06.1981

a salt water lake

8 Stembister? Clivie Bay (co-. 543/546 026/027), date 30.06.1981

a very bad, rocky, find-spot, all the specimens are broken. But it was the only place where I found fragments of the species Aporrhais pespelecani (Linné) and Colus gracilis (da Costa)

¹The co-ordinates (co-.) are of the maps from the Ordnance Survey. I used the sheets 6 (Orkney-Mainland) and 7 (Orkney-Southern Islands).

9 island Burray, beach by the 4th. Churchill causeway (co-. 480/490 954), date 04.07.1981. At the beginning of the Second World War some of the Southern Islands were linked up with the island Mainland, by means of a causeway. This, to prevent attacks on the British Navy by German submarines. At the outside of the causeways sandy beaches arose.

I was limited in the amount of shells which I could take back home, although a fellow student took a box of shells for me in his car. For that reason I also tried to do observations on the spot.

Explanation of the table:

The numbers at the top of the columns are the find-spot numbers.

I collected the species which are indicated with x.

Other data: Le = alive

D = doublet

L = single valve

F = fragments

Estimation of the quantities: 1 = less than 10 specimens

2 = 10 to 100 specimens

3 = more than 100 specimens

By small quantities, I sometimes indicate the number of specimens found, in brackets ().

Finally I want to thank Mr. J. J. van Aartsen, Mr. H. Huneke and Mr. P. Kaas who helped me by the identification of different species. Also I want to thank Mr. C. Karnekamp for the drawings.

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The Dutch version of this article appeared in 'De Kreukel' (17th. volume, numbers 9 & 10, page 67 - 78, December 1981), produced by the 'Malacologische Contactgroep Amsterdam & Omstreken'.

I want to end with two questions:

- 1 Can someone help me in finding a copy (photocopy) of Rendalls article.
- 2 Can someone give me more information on the species Akera bullata Müller nana.

A. D. P. van Peursen

2317 AD Leiden
The Netherlands

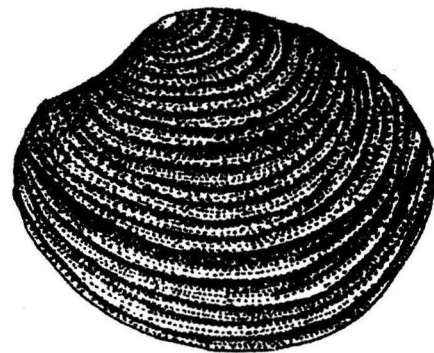
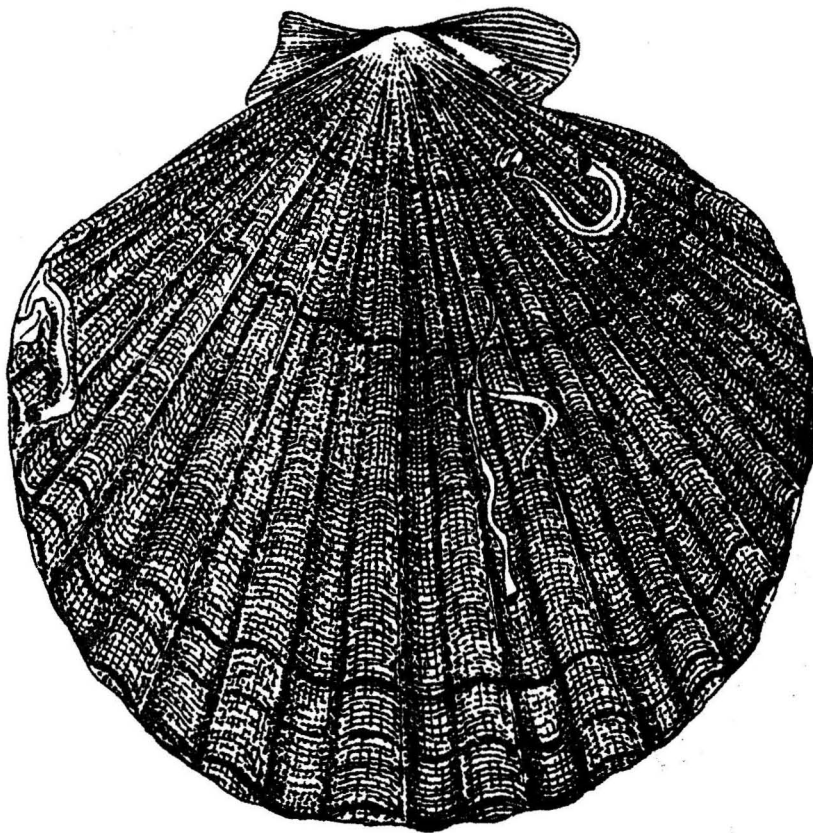


FIGURE 1

At the top: Aequipecten opercularis

Find-spot: Orkney island Mainland, Bay of Kirkwall
Actual size

At the bottom:

At the left: Venus verrucosa

Find-spot: France, Bretagne Suscinio

this species is only reproduced for comparison with Venus casina
Actual size

At the right: Venus casina

Find-spot: Orkney island Mainland, Car Ness
Actual size

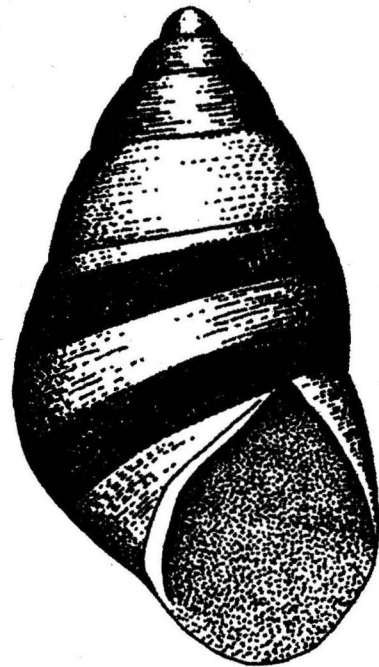
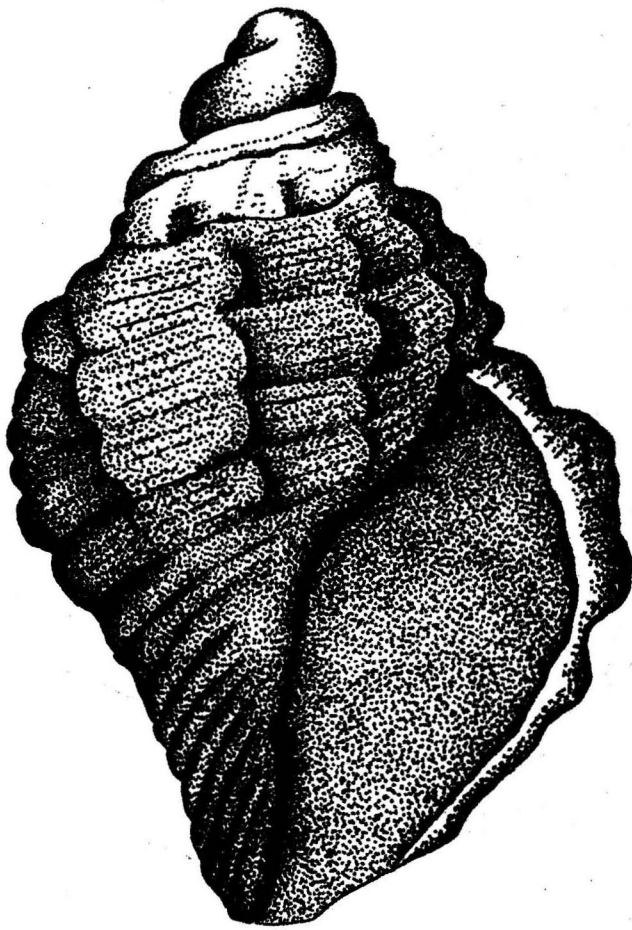


FIGURE 2

At the top: Nucella lapillus lapillus
juvenile

Find-spot: Orkney island Mainland, Aiker Ness Sands of Evie
16 x

At the bottom: Cingula cingillus

Find-spot: Orkney island Mainland, Point of Buckquoy
16 x

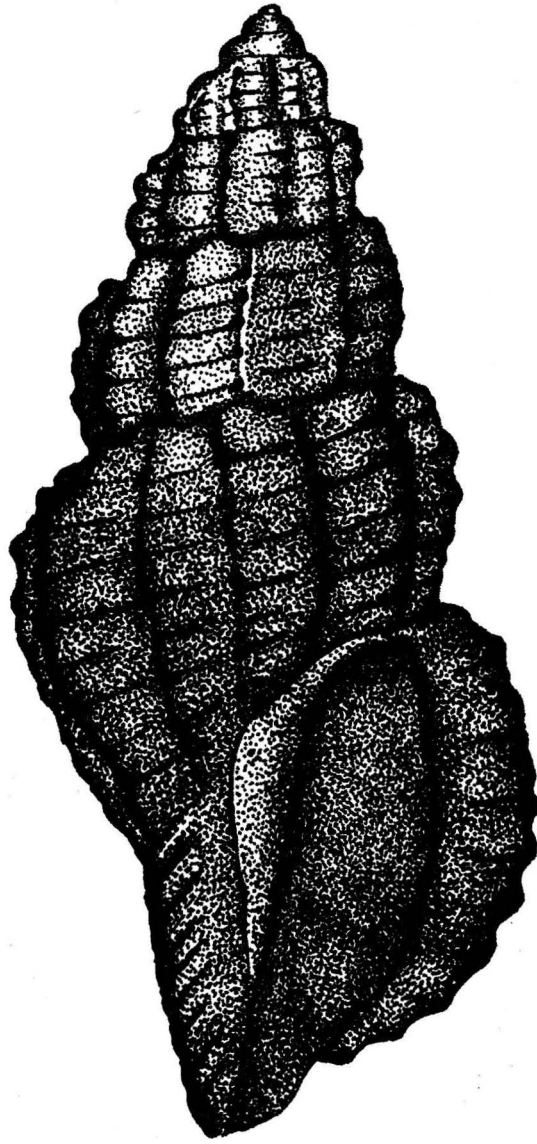
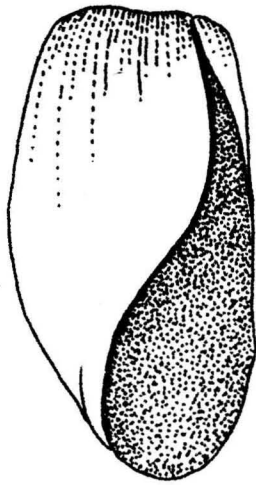


FIGURE 3

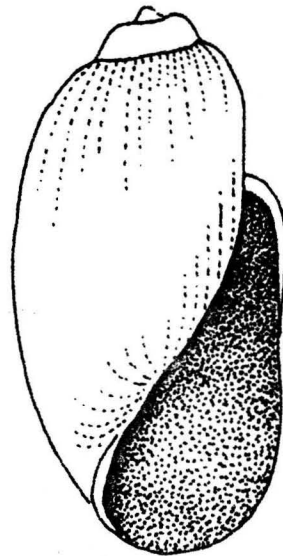
Philbertia linearia

Find-spot: Orkney island Mainland, Point of Buckquoy
16 x

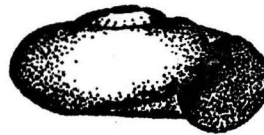
NOTE: All drawn species are in the collection of A. D. P. van Peursen



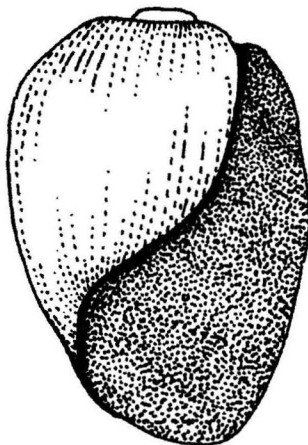
1 Retusa truncatula



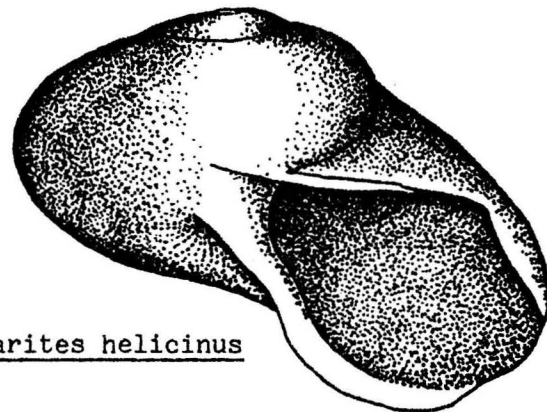
2 Retusa turrita



3 Skenopsis planorbis



4 Akeria bullata nana



5 Margarites hellicinus

FIGURE 4

- Find-spots: 1 Orkney island Burray
 2 Orkney island Mainland, Aiker Ness Sands of Evie
 3 Orkney island Mainland, Point of Buckquoy
 4 Orkney island Mainland, Mill Sand
 5 Orkney island Mainland, Aiker Ness Sands of Evie

All are 16 x

GENUS Pelecypoda	1	2	3	4	5	6	7	8	9
<u>Aequipecten opercularis</u> (Linne)				L2,x	x(2L)				x(1L)
<u>Anomia ehippium</u> (Linne)									L,x
<u>Astarte sulcata</u> (da Costa)					x(1L,1D)				
<u>Cerastoderma edule</u> (Linne)	L1	L2,D2,x	L2	xD	L3,D2	D3			L1
<u>Chlamys nivea</u> Macgillivray					x(1L,1D)				
<u>Chlamys varia</u> (Linne)					x(1L)				
<u>Cyprina islandica</u> (Linne)		x(3L)					F		
<u>Dosina exoleta</u> (Linne)		x(1D,L)							
<u>Ensis</u> sp.		D2,L2	F		L1	L1			
<u>Ensis arcuatus</u> (Jeffreys)		xD							
<u>Ensis siliqua</u> (Linne)		x(1D,2L)							
<u>Glycymeris glycymeris</u> (Linne)					D3,x				
<u>Hiatella arctica</u> (Linne)		xL	x(1D)		xD				xL
<u>Hinnites distortus</u> (da Costa)					x(1L)				x(2L)
<u>Lasaea rubra</u> (Montagu)	xL,D		xL,D						
<u>Lucinoma borealis</u> (Linne)		x(1L)							
<u>Lutraria lutraria</u> (Linne)		x(1D)			L1,F				
<u>Modiolus modiolus</u> (Linne)					D3,x				
<u>Modiolus phaseolinus</u> Philippi					xD				
<u>Monia squama</u> (Gmelin)					x(1L)				
<u>Musculus discors</u> (Linne)		x(1L)							
<u>Mya arenaria</u> (Linne)				L2			Dx,3		
<u>Mytilus edulis</u> (Linne)	D2,L2	D3,L3	xD	D3,xD	D2,L3	D3	D3		L1
<u>Pecten maximus</u> (Linne)	L1			L2,xL x(1D)	L3,xL x(1D)				
<u>Spisula solida</u> (Linne)									L3
<u>Spisula subtruncata</u> (da Costa)		L1							L1
<u>Tellina tenuis</u> (da Costa)		D1,L2							L1
<u>Turtonia minuta</u> (Fabricius)	xD,L	xD,L							
<u>Venus casina</u> (Linne)	x(1L)				D2,xD				
<u>Venus fasciata</u> (da Costa)		x(1D,2L)			x(2D,2L)				
<u>Venus striatula</u> (da Costa)		L2		D1,L1					
<u>Venerupis rhomboides</u> (Pennant)					xD				
<u>Venerupis senegalensis</u> (Gmelin)		L1,D1		D3,x	xD				L1
Chitonida									
<u>Lepidochitona cinereus</u> (Linne)			x		x				

GENUS Gastropoda	1	2	3	4	5	6	7	8	9
<u>Acmaea testudinalis</u> (Müller)					x(1)				x
<u>Acmaea virginea</u> (Müller)			x(1)						
<u>Akera bullata</u> (Müller) <u>nana</u>						x			
<u>Alvania crassa</u> (Kammacher)		x							
<u>Alvania punctura</u> (Montagu)		x							
<u>Aporrhais pespelecani</u> (Linné)								F(2)	
<u>Buccinum undatum</u> (Linné)	1	F, Le1, 1		2, F, x	2, x			F2	
<u>Calliostoma zizyphinum</u> (Linné)		1, x	x, Le2		3			1	x
<u>Capulus ungaricus</u> (Linné)			x(1)		x(1)				
<u>Cingula cingillus</u> (Montagu)			x						
<u>Cingula semistriata</u> (Montagu)		x	x						x
<u>Colus gracilis</u> (da Costa)								F1, x	
<u>Gibbula</u> sp.	2	Le3	Le3		3	1	1	Le3, 3	Le1, 3
<u>Gibbula cineraria</u> (Linné)	x	x	x						x
<u>Gibbula tumida</u> (Montagu)			x						
<u>Gibbula umbilicalis</u> (da Costa)	x	x	x						x
<u>Lacuna pallidula</u> (da Costa)		x							
<u>Littorina littorea</u> (Linné)	2, x	2	Le3, x	3, x	2			Le3, 2	Le3, 2
<u>Littorina obtusata littoralis</u> (L.)	3, x	3, x	Le3	3, x	3	2	2	Le1, 2	Le1, 3
<u>Littorina saxatilis rudis</u> (Maton)	1, x	1, x	Le2	2	2			1	Le1, 1
<u>Margarites helicinus</u> (Phipps)		x							x
<u>Nassarius incrassatus</u> (Ström)		x	x					F	x
<u>Neptunea antiqua</u> (Linné)					2, x				
<u>Nucella lapillus</u> (Linné)	3, x	Le3	Le3, x	3, x	3	2	1	3, Le3	2, Le1
<u>Onoba aculeus</u> (Gould)		x	x						x
<u>Patella aspera</u> (Lamarck)			x						
<u>Patella vulgata</u> (Linné)	3, x	Le3	Le3, x	3	3, Le3			3, Le3	3, Le1
<u>Patina pellucida</u> (Linné)		x	x		x				
<u>Peringia ulvae</u> (Pennant)		x	1				Le3, x		
<u>Philbertia linearis</u> (Montagu)			x						
<u>Retusa alba</u> (Kammacher)		x							
<u>Retusa truncatula</u> (Bruguière)									x
<u>Retusa turrita</u> (Müller)		x							
<u>Rissoa parva</u> (da Costa)		x	x		x				x
<u>Rissoa parva</u> (da Costa) var. <u>interrupta</u> (A)	1	x	x						x
<u>Skeneopsis planorbis</u> (Fabricius)		x	x						
<u>Trivia arctica</u> (Montagu)		x	x						

GENUS Gastropoda

	1	2	3	4	5	6	7	8	9
<u>Trivia monacha</u> (da Costa)			x					x(1)	F,x(1)
<u>Trophon truncatus</u> (Ström)					x(2)				
<u>Turritella communis</u> Risso		F1			F1				
<u>Velutina velutina</u> (Müller)									x



NON-MARINE MOLLUSCA NEW TO ORKNEY

While assembling records towards a list of the non-marine Mollusca of Orkney I found that the following half dozen species, all apparently new records for the county (v.c.111) are not credited to Orkney in the 8th. Census (J. Conch. Lond. 31; 63-71. 1982).

Details are:

<u>Ovatella myosotis</u> (Drap.)	St. Margarets Hope, South Ronaldsay, 18.4.1974, shells only. Coll. I. F. Smith, <u>det.</u> S. M. Smith.
<u>Leucophytia bidentata</u> (Mont.)	Longhope, Hoy, 12.7.1972, coll. K. Smith; Bay of Firth, Mainland, 24.5.1975, coll. I. F. Smith, and Quivals, Sanday, 27.5.1976, coll. N.F.McM. One record (Hoy) marked on <u>Atlas</u> map, but not listed in <u>Census</u> . Specimens from all three loci in Merseyside County Museums.
<u>Arion distinctus</u> Mabilie	St. Margarets Hope, South Ronaldsay, 1.7.1979, coll. N.F.McM. <u>det.</u> Miss Davies.
<u>Milax sowerbyi</u> (Fer.)	Kirkwall (garden), 31.7.1969, coll. N.F.McM., <u>det.</u> A. E. Ellis. On <u>Atlas</u> map, but not in <u>Census</u> .
<u>M. budapestensis</u> (Hazay)	Egilsay (garden), 28.4.1964, coll. N.F.McM., conf. Quick; Stromness (garden), 7.8.1971, coll. N.F.McM. Both this sp. and <u>M. sowerbyi</u> are marked as Orcadian in the <u>Atlas</u> , but are not in the <u>Census</u> .
<u>Limax cinereoniger</u> Wolf.	Wild ground, Rousay, Aug. 1967. Coll. Miss E. B. Bullard and given to N.F.McM. from whose possession it mysteriously disappeared. Fortunately, careful notes had been made of its appearance and these were submitted to Mr. Ellis who considered that the specimen had been correctly named. I suspect that this specimen is the basis for the map-record in the <u>Atlas</u> , although it does not appear in the <u>Census</u> .

N.B.: "Atlas" is, of course, the Atlas of the non-marine Mollusca of the British Isles, ed. M. P. Kerney. 1976.

Merseyside County Museums, Liverpool. 22nd. February 1983

N. F. McMillan

COLLECTORS IN EAST AFRICA - 7. S. W. BAKER

Sir Samuel Baker (1821-1893)

S. W. Baker was born in London on 8th. June 1821, the son of a wealthy ship-owner who directed a bank and a railway. Naturally he was well educated including a finishing in Germany. He married a clergyman's daughter and went to Ceylon to found an agricultural settlement; later, in March 1859, he was a construction manager on the Danube Railway and throughout his life an inveterate big game hunter, but later in his life it is said he regretted having killed so many elephants. His first wife died in 1855 and Baker is usually assumed to have been married to the young lovely blonde Hungarian girl 15 years his junior who accompanied him to Africa but in fact they were not married until 4 Nov. 1865. Baker had actually saved this girl Florence from what would have been a very different life by buying her at a slave auction in Bulgaria in January 1859 for a sum never revealed*; Florence was soon to experience hardships and see scenes of cruelty totally foreign to the Victorian ladies of the time. The fact that Baker had a mistress rather than a wife was of course a social crime of great magnitude. The information soon got about. Long after they were married, Queen Victoria, who was soon informed by well-wishers, was quite annoyed that 'Bertie' (later Edward 7th.) had socialized with the Bakers and

indeed had subjected 'Alix' (later Queen Alexandria) to unsuitable people. She never ever received Lady Baker despite the fact she was a darling of the British public. Livingstone spoke of "Baker's woman" and General Gordon, who was Baker's successor as Governor in the Sudan, was often very critical. Although in some ways the typical Victorian hunting shooting clubman type, he was also a good linguist and author. He thoroughly enjoyed daring hazardous journeys and his acquaintance with Speke probably stimulated his interest in Africa. It was in April 1861 he took Florence to Africa and in February 1863 had the honour to be the first white man to welcome Speke and Grant at Gondokoro after their walk from Zanzibar; and she was the first white woman to get to a source of the Nile. He placed his three vessels at their disposal and supplied them with stores. Later he explored a lake he called Albert Nyanza and collected some bivalves in it; these were described by H. Adams in 1866.

On returning from his Lake Albert expedition he spent a few quiet years at Hedenham Hall in Norfolk writing up his Nile work and also an adventure tale obviously in a large part autobiographical. Later he was approached by the Khedive Ismail and went into service with the Egyptian government. On the 1st. April 1869 he was appointed Governor General of the Equatorial Nile basin for four years with the rank of pasha and major-general in the Ottoman army. He was supposed to ensure the subjection to Egyptian authority of the countries to the south of Gondokoro, the suppression of the slave trade, the introduction of regular commerce and the opening to navigation of the great lakes about the equator. He was the first Englishman to hold high office in the Egyptian government and was in no way supported by the English Foreign Office. He returned to England in 1873 and was much feted by the Geographical Society and others. He visited Egypt and India many times and hunted elephant in Africa and Ceylon, tigers in India, deer in Japan and bears in the Rocky Mountains. He enjoyed vigorous health and showed remarkable tenacity and resource as an explorer. He died on 30th. December 1893 at Sandford Orleigh near Newton Abbot where he had bought a small estate in 1874; Florence did not die until 1916.

*This very romantic story is excellently told in R. Hall 'Lovers on the Nile'. London 1980 which is highly recommended.

List of molluscs described from material collected by S. W. Baker

<u>Unio acuminatus</u> Adams, 1866 (type not found in BM)	Lake Albert	= <u>Caelatura acuminata</u> (Adams, 1866)
<u>Unio bakeri</u> Adams, 1866 (type not found in BM)	Lake Albert	= <u>Caelatura bakeri</u> (Adams, 1866)

REFERENCES

- Adams, H. (1866). List of the shells collected by Samuel White Baker Esq., during his recent Explorations in Central Africa. Proc. zool. Soc. 1866: 275-6
- Smith, E.A. (1888). On the shells of the Albert Nyanza, Central Africa, obtained by Dr. Emin Pasha. Proc. zool. Soc. Lond. 1888: 52-56

B. Verdcourt

COLLECTORS IN EAST AFRICA - 8. J. W. GREGORY

J. W. Gregory (1864-1932)

John Walter Gregory was born in London on 27th. January 1864, the only son of a wool merchant. He joined the British Museum (Nat. Hist.) in 1887 and remained an assistant in the Geology Dept. until 1900. From then until 1904 he was professor of geology at Melbourne University, and from 1904 until 1929 at Glasgow University. He then retired to Essex having travelled to most parts of the world including Tibet, Peru, China, Russia, Australia, Africa, Canada, New Zealand, etc..

Gregory arrived in East Africa as a member of an abortive expedition in 1892. Since he very understandably did not want to return with nothing to show for the time spent, he organised a trip to the Great Rift Valley and north to Lake Baringo. The only white man in the party, he managed to ascend Mt. Kenya to 15,000 ft. and stood on the Lewis Glacier, possibly the first time anybody had done so, certainly the first white man to do so. Being a geomorphologist he could really make the most of this opportunity. He later gave a brief description in his book of the physiography of the south-western slopes and discussed glacial geology at considerable length. He discovered old moraine material in the forest at an altitude of only 9,800 ft. and, above the forest zone, recognised the wide range of glaciation phenomena extending from 11,000 ft. up to the peaks. Of particular interest is Gregory's contention that the mountain was covered by a shield or dome of ice rather than by a system of long valley glaciers. A sketch map of Gregory's made in 1893 shows the Lewis Glacier extending several hundred feet further down than it does today, and his map also shows only one of the two icefalls which are visible at the present time. The upper one is shown covered by the glaciers and marked by a line of crevasses. He linked the maximum of glaciation with the maximum extension of the East African Lakes - the embryo of a local pluvial-glacial correlation hypothesis. He picked up a number of molluscs which Smith wrote about in 1894; and also collected some in spirit since Godwin Austen reported on some Trochonanina in 1895. Several of the slugs he collected are still unworked - I did not know of the existence of the material until after my own studies on the group. He also made a study of the volcanic geology of the mountain and of the Great Rift Valley and he wrote several papers and books on the subject. One is amazed how much he managed to do during a relatively short expedition. His book "The Great Rift Valley" 1896 is very interesting reading, particularly to anyone who has lived close to the areas he has written about. His extensive work gained him election to the Royal Society in 1901. He met his death in the rapids of the Urubamba River at Pongo de Mainique in Peru in June 1932.

List of molluscs described from material collected by J. W. Gregory

- Limnaea elmeteitis Smith, 1894. Kenya, Lake Elmenteita & Lake Baringo. = Lymnaea natalensis Krauss, 1848. Syntypes: BM 1893 . 12 . 22 . 89-95, lectotype with red spot (selected by Connolly but not published)
- Streptaxis kibweziensis Smith, 1894. Kenya, Kibwesi = Gonaxis kibweziensis (Smith, 1894). Holotype: BM 1893 . 12 . 22 . 71
- Vitrina baringoensis Smith, 1894. Kenya, Baringo & Mt. Kenya. A Urocyclid of uncertain position. Syntypes: BM 1893 . 12 . 22 . 56-9 3 small shells and one large one with red spot, marked by Connolly and here selected as lectotype. As has been suggested on the box by someone in pencil, two species are represented, one of which might be a Vitrina but the lectotype is certainly a Urocyclid (Helicarionid of African authors). There has been much confusion over this name. Connolly included it in a list of species having apical whorls with punctured striae and Peter Mordan has confirmed this for the largest shell; Hubendick referred a true Vitrina to this name and Forcart a species of Degneria but both are probably wrong. Only the dissection of topotypes would solve the problem and the type localities are vague and not close to each other
- Zingis gregorii Smith, 1894. Mt. Kenya = Vicariihelix gregorii (Smith, 1894). Syntypes: BM 1893 . 12 . 22 . 40-52 & 1937 . 12 . 30 . 1977-1981, lectotype marked with red spot

REFERENCE

Smith, E.A. (1894). A list of the land and fresh-water Mollusca collected by Dr. J. W. Gregory in East Africa during his expedition to Mount Kenia, with descriptions of a few new species. Proc. malac. Soc. Lond. 1: 163-168, figs. 1-5

B. Verdcourt

THE CONCHOLOGICAL SOCIETY OF GREAT BRITAIN & IRELAND

The 966th. (Annual General) Meeting held on 19th. March 1983 at B.M. (N.H.)

In the Chair: Mrs. S. M. Turk with 49 members and friends present

Death of a member: The death of Mr. A. E. Ellis, Honorary member and former President of the Society was announced

Appointment of Scrutineers: Mrs. Pain and Mr. Worth agreed to serve as scrutineers again this year, and were so appointed

Announcement: Mrs. Turk announced that the Council had unanimously decided to confer Honorary membership on Mrs. Fogan, the Hon. Treasurer

Nominations and Elections: 7 full members, 1 junior member and 1 transfer

Bunting, Miss S., [REDACTED], Brislington, Bristol [REDACTED]

Cretella, M., [REDACTED], 80128 Napoli, Italy

Geyran, K., [REDACTED], Istanbul, Turkey

Gillman, M., Postgraduate P/holes, Building 44, University of Southampton, Southampton

Jones, A.T., [REDACTED], Dudley, W. Midlands

Moore, B.W., [REDACTED], Batheaston, Bath, [REDACTED]

Pitchford, G.W., [REDACTED], Southwell, Nottingham, [REDACTED]

Junior

Workman, N.I., [REDACTED], Thornbury, Bristol, Avon, [REDACTED]

Transfer of membership: from full to family membership

Light, Mrs. J., [REDACTED], Godalming

Light, B.N.R.,

Report of the Council 1982/83: read by the Hon. Secretary and accepted

Report of the Accounts 1982/83: Copies of the Accounts were circulated, and the Report was read by the Hon. Treasurer; both were accepted

Report of the Non-Marine Recorder: read and accepted

Report of the Marine Recorder: read and accepted

Report of the Hon. Junior Member Officer: read and accepted

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

Announcements: It was announced that on Saturday 2nd. April there would be a meeting at the house of Mrs. Rands to meet representatives of 'Hampshire Micro' concerning microscopes

Mrs. Fogan announced that she had been sent a journal from Hungary (N.H. Museum) to exchange for the Society's Journal. The Society does not exchange, but a member could do so privately if he/she wish- to do so.

Mrs. Rands announced that several books were available for sale

Mrs. Turk announced that the Non-marine Atlas and the Concordance would be available at the meeting at a reduced price

Presidential Address: 'The Non-marine Mollusca in Cornwall'

Election of Auditors: Dr. Lloyd-Evans and Mr. Petterd have agreed to continue as auditors and this was confirmed by the Meeting

Results of the Postal Ballot: All of the nominations were confirmed

Announcements and Correspondence: A collector has written to request contact with members interested in Onchidacea

A request for help with obtaining photographs of 3 British land species was received from the prospective author of a book about threatened British wildlife

Any other business: Mr. Negus requested material, principally long articles for the Newsletter

The Meeting closed at 5.14 p.m.

Members Exhibits

- | | |
|-----------------|--|
| J. D. Nunn | - Assorted information of interest to members of the Society |
| S. Turk | - Distribution past and present, and ecology of Cornish Non-marine Mollusca illustrating address |
| E. B. Rands | - Book, 'Directory of Natural History Societies' |
| P. E. Negus | - Rudist Lamellibranchs - Hippurites |
| B. Coles | - Review Copy of Solem Endodontoid Land Snails |
| W. Karo | - <i>Conus vicdani</i> (Phil. Is.)
<i>Tibia delicatula</i> (South India)
<i>Strombus kleckhamae</i> (Phil. Is.)
<i>Fimbria sowerbii</i> (W. Australia) |
| J. Light | - Pectinidae of American waters |
| G. W. Pitchford | - Clausilidae British and European
<i>Theba pisana</i> Muller from Porthgiddan Cove, The Island, St. Ives, Cornwall
<i>Papustyla pulcherrima</i> I. Rensch, Manus Island |
| E. Sándor | - Family Thaididae |
| T. Pain | - The <i>Murex aculatus</i> problem solved? |
| A. P. H. Oliver | - Mud creepers! and a left-handed cone! |

The 967th. (Ordinary) Meeting held on 16th. April 1983 at B.M.(N.H.)

In the Chair: Mr. T. Pain with 32 members and friends present

Minutes of the last meeting: Line 1 in 'Election of Auditors' was amended to read "....Dr. Lloyd-Evans and Mr. Edwards have agreed ...", and then accepted and signed

Nominations and Elections: 3 full members:

Bell, Dr. M., Dept. of Geography, university Road, Bristol, BS8 1SS

Garrett, H.J., [REDACTED], Rainham, Gillingham, Kent

Wells, Miss S.M., [REDACTED], Cambridge

Lecture: There was no lecture. Instead there was an Open Exhibition

Papers read: 1. Distribution of Land and Freshwater Mollusca in Corsica
by D. Holyoak
2. The Marine Mollusca of Kuwait, Arabian Gulf
by B. A. Glayzer, D. T. Glazer, and K. R. Smythe

Announcements and Correspondence: 1. There will be a Field Meeting at Weymouth from 29th. April to 2nd. May, led by Mrs. J. Light. Details of accommodation are available after the meeting from Mr. Pain
2. The BSCC is holding its Annual Shell Show on 23rd. April at Napier Hall, Hyde Place, London, and is open to the public between 1 p.m. and 5.30 p.m.

The Meeting closed at 4.35 p.m.

Exhibits

M. B. Seddon	- European <u>Helix</u>
J. F. M. de Bartolomé	- Interbreeding between species (??) of <u>Tingitana</u>
J. D. Nunn	- Assorted information of interest to members of the Society
C. P. Palmer	- Evidence of life in fossils
R. P. Scase	- <u>Conus adamsonii</u> Brod. 1836 ('The Rhododendron Cone') and associated literature
T. Pain	- Genus <u>Pyrolofusus</u> Morch 1869 (type by orig. desig. <u>Fusus deformis</u> Rue) 'Arctic Seas'
A. P. H. Oliver	- The <u>Melongaidae</u> , Rapanas, Thais, and <u>Turbinillidae</u> - 'Volutes'
E. Sándor	- Family <u>Marginellidae</u> Fleming 1828

PUBLICATIONS RECEIVED

Poirieria, Vol. 12, No. 1, n.d. (Conchology Section, Auckland Institute and Museum).
Editor: Derek Lamb

Among the usual lively tales of local shelling expeditions and rareties discovered occurs an article of considerable significance. This is entitled 'Toheroa - a vanishing Morsus. Paphies (Mesoderma) ventricosa (Gray, 1843)' by Norman Douglas.

The Toheroa is a sand dwelling mollusc, a bivalve which grows upwards of four inches in length and was much prized for food; in fact, it was so common that the author dug it for bait in his youth at Irwin's Gap on the Manukau Peninsula and later, at Taurangaruru, some twenty miles to the south. Now it is reported that the Fisheries Inspectors 'have found two specimens only during the course of 1981 and have proclaimed another closed season for the following year'.

Douglas has spent much time investigating the life of these bivalves and the likely reasons for their decline. He noted that the Toheroa had a habit of shifting station when the tide was almost full in; dozens of them would let themselves out of the sand, to be swept by the next wave to another location. Then they would up-end quickly and disappear under the sand when the retreating wave left them. This observation led him to the discovery that the half-inch baby toheroa live in the sand almost at high water mark and just under the surface, moving down the beach as they grew larger.

In 1940 American servicemen, training along the coast, built roads to the

beaches and made considerable use of them for transport. From 1950 to 1980 motor traffic on the beaches has multiplied many times. There are now no toheroas.

In the 1950s anglers' clubs were formed in the areas of Muriwai and Ninety Mile Beach. Everyone drove along the beaches in their cars and pounded over beds of tuatua (Paphies (Mesodesma) subtriangulata (Wood, 1828), which were so numerous that they could not all get under the sand. The annual fishing contest brought something like two thousand cars using the baby bivalve habitats for a highway - in fact, these areas are now officially classed as public highways and carry tourist buses daily. Naturally, the shells are now all gone.

Of what use is it then, to enforce a 'closed season', making it illegal to dig and eat the toheroa when its habitat is deliberately destroyed? It isn't the gourmets who have killed off the shells, after all, but that destroyer of so much, the motor vehicle. The history of the buffalo and the passenger pigeon show us that enormous populations are often no defence against rapid extinction and conservation may well be a much more intricate matter than might appear at first.

T. E. Crowley

GENERAL NOTES

FIELD MEETINGS - AUTUMN 1983

Saturday 1st. October Flitwick Moor, Bedfordshire
Joint meeting with the Beds. N.H.S.
Leader: Dr. B. Verdcourt (Telephone: [REDACTED])
Meet at Flitwick Station Car Park at 11.00
Train from St. Pancras dept. 10.13 - Flitwick arr. 10.57

Please note: The Autumn Slug Foray arranged for Saturday 16th. October is CANCELLED.

Advance Notice: Dredging off Weymouth, June/July 1984.

If there is sufficient demand a boat can be hired for a day's dredging. The cost will be £20 per person, minimum number 10. The full amount to be paid on booking. No refund can be considered unless the trip is cancelled due to adverse weather conditions. Those interested please contact the field meetings organiser as soon as possible.

Field Meetings Organiser: Mr. T. Pain, [REDACTED], Millbank, London, [REDACTED]
Telephone: [REDACTED]

HELP WANTED. Mrs. Lesley Howes, [REDACTED], Thornton Heath, Surrey, is involved in archaeological work on Roman/British sites and is anxious for help in identifying molluscs found, especially oysters.

She is currently preparing a Report on a site at Beddington, Surrey. Please write if prepared to give assistance.

CONCERNING BERYL RANDS

I would like to correct a misconception that seems to be creeping into the minds of some members. Our ex Honorary Secretary, Mrs. E. B. Rands did not RESIGN from the post - she RETIRED and was duly honoured by the Society by being made an Honorary Life Member.

We are glad to hear that her health has improved steadily and that the virus infection, which caused her doctors to recommend retirement, has at last left her system.

Anyone wishing to write to Mrs. Rands should mark the envelope PERSONAL and omit the words 'Conch. Soc.' This will ensure that she opens the letter herself - all correspondence marked Conch. Soc. is automatically redirected unopened.

Newsletter Editor

BOOKS FOR SALE

I have been given two boxes of books with a wide range of molluscan interests, British and Foreign Marine and British and Foreign Non-Marine.

I am in the process of making a list of the titles for distribution to any Conch. Soc. member interested in purchasing any. Please send a foolscap size S.A.E. to Mrs. E. B. Rands, [REDACTED], Luton, Bedfordshire, [REDACTED] for price list. To give overseas members a chance - no books will be sold until after Christmas. Please mark envelope PERSONAL.

MOLLUSCAN HEROES AND VILLAINS

Read all about Lambis violacea the first ever feminist mollusc; Turbinella pyrum who sees himself as Vishnu's Messiah and speaks with an Indian accent; Tridacna gigas the overweight coward who runs a "take-away restaurant" and Nautilus pompilius the supreme ruler of all the molluscs, in:

THE NAUTILUS AND THE GANG OF THREE

by Jacques K. Lee

Published in USA at \$6.95. Special offer to members of the Conchological Society of G.B. & I. - £3.75 plus 50p for postage and packing. Only limited stock available in UK. Order your copy before the end of November and we will have it signed by the author for you. Do not forget to mention to whom it should be dedicated. Ideal Christmas present for conchologists of all ages. Cheques should be made payable to Preciousshells.

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FOR SALE. We are suppliers of tropical sea shells, land snails, coral and sea curios to collectors, schools and colleges. S.A.E. for lists.
Nature of the World, 19 Bell Lane, Fetcham, Leatherhead, Surrey.

FOR SALE

We have a LARGE STOCK on CONCHOLOGICAL journals and books. Please send your wants or your offers if you want to sell to: ELSEVIER ANTIQUARIAN DEPARTMENT, General Manager Dieter Schierenberg, 4 Lippijnstraat - Amsterdam - Netherlands. Tel.: 20 - 861541

WANTED - E. Rolan, [REDACTED], Vigo 2, Spain, is looking for Hinia reticulata from several places, specially the var. nitida Jeffreys from Thames estuary and River Orwell. In return he can send shells from Spain, Cape Verde (cones specially) and other areas.

FOR SALE - Shell collection in cabinet, about 2000 shells, Cypraea, Conus, Strombus, Voluta and numerous others - some rarities. List on request - price £350 or £400 with small, very good cabinet. Elizabeth M. Allison, [REDACTED], Yarmouth, I. of W.
[REDACTED]

Duplicated by: SPEEDWELL PRESS, Trap Road, Guilden Morden, Royston, Herts.

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ON REFERRING TO SCAPHOPODS

People often say to me "I've got a Dentalium for you to identify", leading me to expect one of those big colourful things from the Far East. It is something of an anticlimax when an Antalis vulgaris, from Brighton or Bexhill, is placed in my hand; for the name Dentalium led me to expect a Dentalium (type species Dentalium elephantinum Linné 1758). I'm not complaining, I like Antalis vulgaris, even when all the ornament is worn off, but it is not nearly so handsome as Dentalium elephantinum, D. aprinum, and D. formosum from the East Indies.

The trouble is due to a combination of two factors: a fruit-and-apples situation and a tetchy impatience on my part. My learned and respected friends, so careful to distinguish Textilia from Leptoconus, and Cernuella from Helicella, fall apart when confronted with a scaphopod and refer it to 'Dentalium' regardless; which is not unlike calling all fruit 'apples'. Again, I'm not complaining, I like apples: but there are bananas, oranges, tomatoes, and gooseberries as well. In fact, in one of the currently available classifications of the Scaphopoda (1) there are thirty nine genera - and only one is Dentalium!

Doubtless a lot of eyebrows shot up at 'thirty nine genera', but before bringing them down again I'll send them even higher with the claim that thirty nine is not enough, for there are fossil scaphopods which find no place in any of the published genera. A case in point is the well-known and common 'Dentalium' decussatum J. Sowerby 1814 from the Gault Clay of S.E. England.

There is a widespread and justified belief that the class Scaphopoda Bronn 1862 is a small group - "Probably not more than a couple of hundred species all told". Three years after receipt of that information I had nearly a thousand named and described forms in my card-index; half of these were living, the rest fossil, and all had survived Pilsbry and Sharp's (2) monumental sort-out in 1898, or have been described since. In the face of this it strikes me that thirty nine genera is not that extravagant.

In addition to the raised eyebrows I know that there are dedicated 'lumpers' out there convinced that most of the thousand named forms (I didn't say 'species') should be swept into synonymy with a few hundred manageable taxa, which would be easy enough so long as one looked no closer than six feet. When I began scaphopod studies, and 'studies' is a rather grand word for the floundering confusion of those first years, I was told that scaphopods all look the same, which is true from a distance of six feet; but, close-up under magnification, they all look different. In the face of manifest difference, 'lumping' is a tricky enterprise requiring carefully constructed arguments why things which are demonstrably different should be regarded as the same. A scaphopod 'lumper' would need a very long spoon indeed, and if he tackled the cadulids he may sink altogether without trace. Bertrand Russell; after a long session writing Principia Mathematica, is supposed to have laid down his pen and said "Logic is hell" - the same could be

said about cadulids. But I digress from the main purpose of this article which is to dispel a few wide-spread myths about scaphopods with some hard facts. Around a thousand distinguishable and named fossil and living forms have been described, and most of these will stand since Pilsbry and Sharp have already dealt with the major synonyms. The forty odd genera are already brim-full and a return to the days of just 'Dentalium' and 'Cadulus' will not be greeted with much enthusiasm by scaphopod workers. All scaphopods divide into two major divisions: bigish chaps with a conical foot and small ones with a vermiform foot. I elevated this division to ordinal rank in 1974 calling the former Dentalioida and the latter Siphonodentalioida. So there are three basic ways one can refer to scaphopods without getting into deep generic waters: if you are sure that your specimen is not a worm tube or a caddis fly larva, you can call it a 'scaphopod'. If it is small, up to 10mm, with a vermiform foot or with a constricted aperture looking like a miniature baby's bottle, you can call it a 'siphonodentaloid'. If it is big and ribbed, or big and smooth with a conical foot you can call it a 'dentaloid'. However 'scaphopod' will do for either, and these three informal vernacular terms, being independent of the rules of nomenclature need not change with the formal names of taxa. Scaphopods will always divide into big dentaloids and small siphonodentaloids whatever these divisions are formally called.

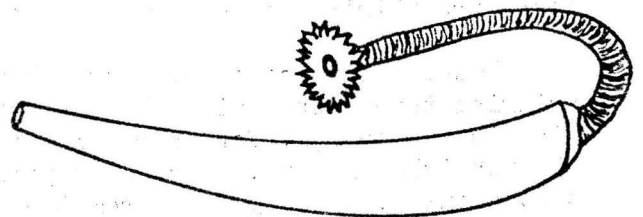
class SCAPHOPODA

order Dentalioida



< 130 mm

order Siphonodentalioida



< 10 mm

Finally, a couple of anecdotes to show that, despite my efforts, it is still difficult to take scaphopods seriously.

In 1920 Henderson (3) monographed the scaphopods of the east coast of America. A number of undescribed forms included several cadulids, all looking like minute baby's bottles. One of them, bigger than the rest and all of 10mm, he called Cadulus elephas: (Henderson 1920, p.107, pl.17, fig. 10).

During 1979 I was sent a collection of scaphopods from the Gulf of Eilat to name. One of them, a smooth dentaloid, had six naticid holes drilled down one side making it look just like a flute; and there were several others, with fewer holes, but nearly all down one side. Somewhere in the Gulf of Eilat there is a wild demented naticid gastropod furiously drilling holes in empty scaphopod shells - snarling and muttering "I know you're in there somewhere".

Being serious about scaphopods is quite a serious business.

- Scaphopod Mollusca. The Veliger, 17 (2): 115-123.
2. Pilsbry, H.A. and B. Sharp, 1898 Manual of Conchology (Tryon), Vol. 17, Scaphopoda.
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Phil' Palmer

THE LAND AND FRESHWATER MOLLUSCA OF THE GLAMORGAN CANAL NATURE RESERVE

In January 1978, as part of a contract with the City of Cardiff Parks Dept., sponsored by the Manpower Services Commission, I took part in an ecological survey of the Glamorgan Canal Reserve, (NGR ST/14.81), to ascertain the floral and faunal diversity of its 41.5 acres. A study of the Mollusca of the County of Glamorgan had been conducted by Dean (1926) and an account of the mollusc species of the reserve given by Chatfield (1974, 1976). This study looks at the distribution of the Mollusca on the reserve.

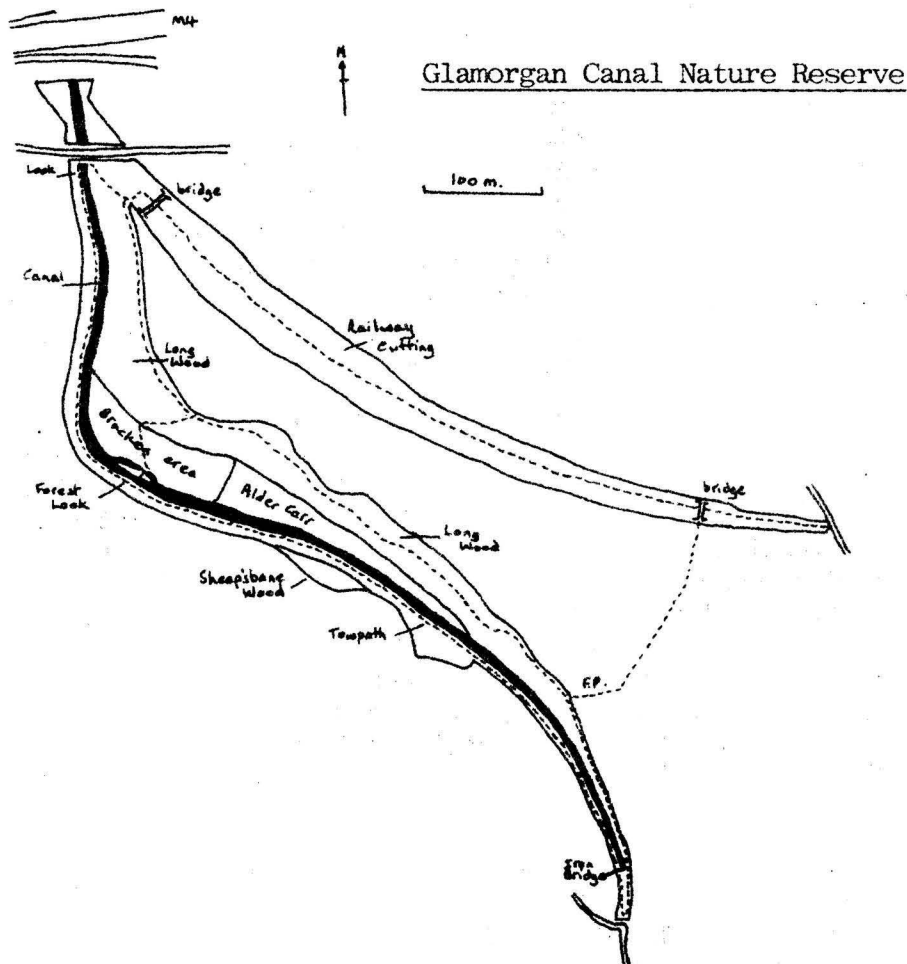
Glamorgan Canal, built to carry coal by barge from Merthyr Tydfil to Cardiff Docks, was completed in 1798, but the advent of the railways, which reduced transportation time, led to the eventual decline of the canal. Just under one mile of canal and adjoining woodland was acquired by Cardiff City Council in 1944 and designated a nature reserve in 1967. In June 1973 the City Council purchased 13.86 acres of the disused Coryton Railway from British Rail, a cutting which runs from the northern end of the reserve in a south-easterly direction.

The whole of the reserve was looked at, essentially from the point of view of its vegetation, and 7 different habitats were identified (see map).

- 1) The Alder Carr - an area sandwiched between the canal and the base of the Longwood scarp slope. It is a permanently wet and heavily shaded locality with trees growing on 'islands' of roots and rich humus. Alder (Alnus glutinosa) is the dominant tree species though Ash (Fraxinus excelsior) and Sycamore (Acer pseudoplatanus) occur. Tufted Sedge (Carex acuta) and Marsh Marigold (Caltha palustris) are very common. Water feeds into this site from the canal and from springs which form a spring-line at the base of the scarp slope, (pH of the spring water 7.0). The margins of this area are drier with thick leaf-litter and a ground cover of Ramson (Allium ursinum), Bluebell (Hyacinthoides non-scripta) and Dog's Mercury (Mercurialis perennis).
- 2) Sheepsbane Wood - this is a poor fen adjacent to the canal towpath. Alder (Alnus glutinosa) and a few Ash (Fraxinus excelsior) are permanently in water. As in the previous site the trees form 'islands'. It is a very shaded locality, the bed of which consists of heavily decayed leaf matter. An acid soil, pH 5.5 distinguishes this site from the previous one. The aquatic vegetation includes Hemlock Water-Dropwort (Oenanthe crocata), Marsh Marigold (Caltha palustris) and Floating Sweet-Grass (Glyceria fluitans).
- 3) Bracken area - a level area of 1.5 ha. between Long Wood and the canal, with a soil pH of 5.5, which until about 20 years ago was foraged by pigs but has now been allowed to go wild. The vegetation is dominated by Bracken (Pteridium aquilinum) with Bramble (Rubus fruticosus agg.) and some Hawthorn (Crataegus monogyna).
- 4) Railway Cutting - a long abandoned cutting which has been allowed to generate into a wooded area. The vegetation is quite dense in places. Soil pH varies between 7.0 and 7.5 and soil moisture is lower on south facing slopes. The dominant vegetation is Sycamore (Acer pseudoplatanus) with Oak (Quercus robur),

Ash (*Fraxinus excelsior*) and Hawthorn (*Crataegus monogyna*). The ground flora includes Male-Fern (*Dryopteris filix-mas*), Hart's-Tongue Fern (*Phyllitis scolopendrium*), Ivy (*Hedera helix*), Ramson (*Allium ursinum*) and a great covering of mosses on the damper north-facing slope.

- 5) Longwood - This wood, which runs the length of the reserve, is on a steep scarp slope overlooking the River Taff flood-plain. What is now the flood-plain had been a thick deposit of glacial debris before being excavated by the R. Taff. The wood is on what remains of the glacial debris, which consists of gravels, sands and clays. The soil has a pH of 5.5, though pockets registering 7.0 are found in the highest part of the wood. Beech (*Fagus sylvatica*) is dominant with Oak (*Quercus robur*), and Ash (*Fraxinus excelsior*), Holly (*Ilex aquifolium*) and Hawthorn (*Crataegus monogyna*) are frequent. The steepest part, at the northern end of the reserve, has a fairly closed canopy, and coupled with ground surface mobility inhibits the development of a ground flora. The southern end is less steep and the ground is carpeted in Ramsons (*Allium ursinum*).
- 6) Canal Bank - Much of the bank consists of silt and mud dredged from the canal bed, overlying alluvial gravel. The pH is 7.5. The flora is unspectacular. Trees follow the towpath for much of its length.
- 7) The Canal - The canal lies on the alluvial flood-plains of the R. Taff to the south of a Carboniferous Limestone ridge through which it flows. The pH of the canal water is 8.0 (Gillham 1969). The section of canal on the reserve is the sole part still holding water. At its southern end it has been sealed off and the water drains off into the Melingriffith feeder. The vegetation of the canal is very rich, details of which are given in Gillham (1969).



Eighteen sites were selected for sampling land snails, being representative of the different habitats. The pH of the soil for each site was determined using the BDH method. The larger snails were sorted by hand and a fine sieve mesh was used to extract the smaller species from air-dried leaf-litter and top soil. A record of species on a present or absent basis was made for each site. The freshwater species were collected using a pond net from the canal outflow and the canal walls, and by hand from stones and logs in the water and aquatic vegetation (see Table 1).

TABLE 1	ALDER CARR	SHEEP'SBANE WOOD	BRACKEN AREA	RAILWAY CUTTING	LONG- WOOD	CANAL BANK	CANAL
<u>Terrestrial Species</u>							
<u>Carychium minimum</u>	*			*			*
<u>Succinea putris</u>							
<u>Cochlicopa lubrica</u>	*			*	*	*	
<u>Columella edentula</u>	*				*		
<u>Lauria cylindracea</u>						*	
<u>Acanthinula aculeata</u>	*				*	*	
<u>Punctum pygmaeum</u>	*				*		
<u>Discus rotundatus</u>	*	*	*	*	*	*	
<u>Arion circumscriptus</u>					*	*	
<u>Arion hortensis</u> agg.					*		
<u>A. intermedius</u>			*		*		
<u>Vitrina pellucida</u>	*			*	*	*	
<u>Vitrea crystallina</u>	*			*	*		
<u>Nesovitrea hammonis</u>	*					*	
<u>Aegopinella pura</u>	*			*			
<u>A. nitidula</u>	*		*	*	*	*	
<u>Oxychilus draparnaldi</u>						*	
<u>O. cellarius</u>	*				*	*	
<u>O. alliarius</u>	*		*	*	*	*	
<u>O. helveticus</u>	*			*	*	*	
<u>Zonitoides excavatus</u>		*					
<u>Z. nitidus</u>						*	
<u>Deroceras laeve</u>	*						
<u>D. reticulatum</u>	*				*		
<u>Euconulus fulvus</u>	*			*	*		
<u>Ceciloides acicula</u>						*	
<u>Clausilia bidentata</u>	*			*	*	*	
<u>Zenobiella subrufescens</u>				*	*		
<u>Trichia hispida</u>	*			*		*	
<u>T. striolata</u>				*	*		
<u>Cepaea nemoralis</u>	*			*			
<u>C. hortensis</u>	*					*	
<u>Helix aspersa</u>						*	
<u>Freshwater Species</u>							
<u>Viviparus viviparus</u>							*
<u>Bithynia tentaculata</u>							*
<u>Potamopyrgus jenkinsi</u>							*
<u>Lymnaea stagnalis</u>							*
<u>L. palustris</u>							*
<u>L. peregra</u>							*
<u>Aplexa hypnorum</u>	*						*
<u>Physa fontinalis</u>							*
<u>P. gyrina</u>							*
<u>Planorbarius corneus</u>							*
<u>Planorbis planorbis</u>							*

TABLE 1 Continued	ALDER CARR	SHEEP'SBANE WOOD	BRACKEN AREA	RAILWAY CUTTING	LONG- WOOD	CANAL BANK	CANAL
<u>Anodonta cygnea</u>							*
<u>Sphaerium corneum</u>							*
<u>Pisidium amnicum</u>							*
<u>P. personatum</u>	*						
TOTAL NO. OF SPECIES FOR EACH HABITAT	23	2	4	15	19	18	14

The Glamorgan Canal Reserve has a rich molluscan assemblage. Chatfield (1974) lists a further 11 species for the reserve, which were not seen during the course of this study (see Table 2).

TABLE 2

<u>Acicula fusca</u>	<u>Valvata piscinalis</u>	<u>Pisidium obtusale</u>
<u>Carychium tridentatum</u>	<u>Lymnaea truncatula</u>	<u>P. milium</u>
<u>Arion subfuscus</u>	<u>Planorbis carinatus</u>	<u>P. subtruncatum</u>
	<u>Gyraulus albus</u>	<u>P. hibernicum</u>

The total number of species can be broken down into the following:

	TERRESTRIAL SPECIES	FRESHWATER GASTROPODS	BIVALVES	TOTAL
Recorded during present survey	33	11	4	48
Recorded in Chatfield (1974, 1976) though not during this study	3	4	4	11
TOTAL	36	15	8	59

Abundance and distribution of terrestrial species is clearly influenced by habitat diversity but moisture, shelter and the degree of alkalinity or acidity of the soil are very significant factors. None of the species are rare. However, within a British context species such as Zenobiella subrufescens and Zonitoides excavatus have a distinctly western distribution.

Of the freshwater species Physa gyrina Say is of particular interest. Details of its discovery near Cardiff can be found in Dean (1920), and its discovery in the Glamorgan Canal by S. P. Dance in Chatfield (1974). Anodonta cygnea and Viviparus viviparus are uncommon Welsh species, though the other species are quite typical of slow calcareous waters.

Because of the diversity of species the Nature Conservancy Council is considering including the Glamorgan Canal Reserve in their Invertebrate Site Register.

I am grateful to Dr. J. E. Chatfield (then Assistant Keeper of Zoology at the National Museum of Wales, Cardiff) for her patience in teaching me to identify the Mollusca and for guiding me in their study.

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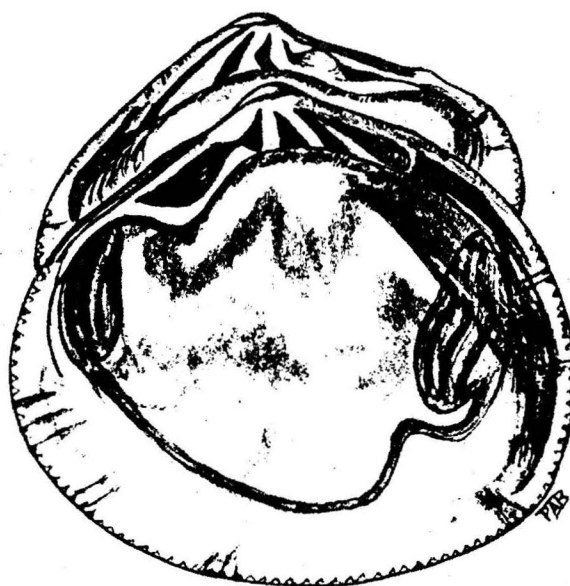
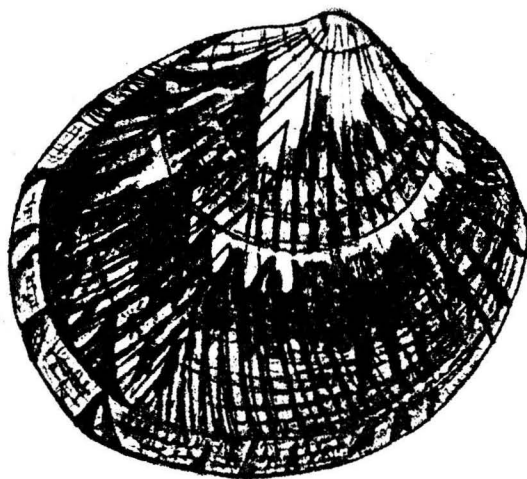
Michel R. Hughes

A JAPANESE BIVALVE, GAFRARIUM DIVARICATUM (GMELIN) FOUND ON THE NORTH CORNISH COAST

To the Cornish tales of the unexpected, the most recent example of which has been the whelk shell from Tristan da Cunha found at Hayle by Mrs. Jan Light (see Conch. Newsletter No. 82: 27-28 and No. 84: 66-67), I must now add an account of a Japanese venerid, Gafrarium divaricatum (Gmelin). In 1966 near Towan Sands, Newquay on the north coast of Cornwall, Mr. C. A. Brind found a living specimen on the surface of the sand. Subsequently he found three more examples, all separate valves, at Constantine Bay (c. 1970), Bedruthan Steps (c. 1971) and Watergate Bay (1975). Mrs. C. J. Pain kindly identified the species, but neither she nor Mrs. N. F. McMillan who also saw one of the valves, could hazard a guess how it arrived on the Cornish coast, except, as Mrs. McMillan suggested, as an aquarist's throw-out: the many marine aquaria now being kept, with species from many parts of the world, opens up a new source for aliens, as casuals or permanent additions to our fauna! In its native country, this bivalve lives intertidally in sandy gravel, so the light mobile sand of the north Cornish coast which contains very little burrowing fauna, would seem hardly suitable. However, one can conceive that a small colony might have survived for a while in a more sheltered position, once it had reached this country. My first suspicions centred on the Japanese or Pacific Oyster, Crassostrea gigas (Thunberg) which is present in the Camel estuary on the north Cornish coast. However, import restrictions combined with cleansing and breeding programmes before any seed is distributed, make accidental introductions from this source highly unlikely. Moreover, the Japanese Oyster was not brought into the Camel until the late 1970s, so whatever twist there is to this particular tale, it remains unknown.

I am grateful to Mrs. Celia Pain and Mrs. Nora McMillan for their help and interest, and to Mrs. Trish Burton for her drawing of the Newquay specimen. The drawing appears at the head of the next page (126).

Stella M. Turk



Gafrarium divaricatum x2

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David S. Reese

MOLLUSCS IN OMAN

Readers may be interested in reading an account I recently came across of the marine life of Qurum beach in Oman. I found some pretty bizarre ways of collecting shells during some of my travels but never had to resort to shooting them!

I have not been able to find the genus Intrari mentioned in 'Seashells of Oman', by Donald and Eloise Bosch but perhaps this is not surprising. It must be very difficult to find a shell which digs down 100 feet into the seabed!

Extract from "Where Time Stood Still; a Portrait of Oman" by The Duchess of St. Albans, 1980. (from P. Cambridge)

"Qurum beach goes on for ever, all the way up the Batinah coast as far as the very north of Oman, about 200 miles along to the Musandam Peninsula. Thousands of shells lie about on the sand and long ribbon-like ridges of broken fragments snake along, marking the limit of the last high tide. There, like milestones dotted the length of the beach, great lumps of brain coral lie about among the shells with the disconcerting aspect of outsize human brains. As these lumps are riddled with tiny holes they are used as bricks for building private houses in the Gulf, and I have seen some desirable residences in Sharjah made entirely of this type of coral, forming intricate lacework patterns all over the walls. Owing to the infinitude of these minute cavities, the slightest breath of air filters through, keeping the temperature inside deliciously cool.

The Indian Ocean contains all the right ingredients, not to speak of the balmy environment, necessary to nurture the most intricate and extravagant shapes in the world of cowries, volutes, cones and bivalves. The most astonishing among these creatures is the giant clam, Tridacna Gigas, which lurks in the shallow coral waters of the coast, and grows to the imposing size of a couple of metres long. They are what is known as suspension feeders, which really means a kind of roving dustbin, sucking up whatever delicacies may be floating around. But should they come upon lean times, the crafty creatures have developed a second string by manufacturing food in their very own tissues. This is known as zooxanthellae, unicellular algae living right inside the viridian mantle lobes (the vast bright-green lips of the creature). This cunning alternative forms a kind of home-grown vegetable patch which is cropped whenever required and dispatched down to the digestive system to be dealt with in the usual manner.

Another variety of this ingenious breed, a kind of bivalve with smooth round pink cheeks called Intrari Intraria, grows to a mere six inches in width, and hides his shame by digging deep down in the sea bed, over 100 feet into the soft ooze before he can feel secure. Having reached this secluded spot, he ventures out a hairy arm through which he breathes and sucks up any left-overs which come drifting down from the richer layers above. He is a humble fellow, and not choosy about his food - which is just as well in that neighbourhood.

The melon shell, about the same size as its fruit namesake, has a smooth pink shiny doorway, reaching from end to end for the monstrous head and foot all-in-one which creeps out to seek its food and meet its friends on the ocean floor. A

conchologist friend of mine who collects this particular mollusc tells me she has to shoot it to bits with a revolver before it will lie down and keep still. When they can get hold of these shells, the fishermen use them for bailing out their boats in bad weather. The spider conch, or *Lambis Lambis* to use its Latin name, is regarded as a very tasty morsel, roasted in its shell on the beach and consumed on the spot. The money cowries are as thick as thieves everywhere and come in all sizes. In order to keep their shine, they have to be caught alive, and persuaded to leave home by hook or by crook. If allowed to die in their beds, the shells grow quite dull, and no amount of polishing with face cream or olive oil will bring the glow back into their cheeks. Top shells, whose lustrous iridescent inner lining was used for making mother-of-pearl buttons, were saved from extinction through over-fishing in the nick of time by the break-through of the plastic button."

REPORT ON SYMPOSIUM ON QUATERNARY NON-MARINE MOLLUSCA, 23 APRIL 1983

This informal symposium was organised jointly by the Conchological Society of Great Britain and Ireland and the Quaternary Research Association. Increased interest in Quaternary land and freshwater molluscs was reflected by an attendance of over thirty, many of them being members of both the Conch. Soc. and the Q.R.A.

Thanks are due to the Chairmen, J. G. Evans and R. B. G. Williams, to I. M. Fenwick, D. Hill and M. B. Seddon for help with arrangements and to the Dept. of Typography and Graphic Communication (University of Reading) for use of their facilities.

D. T. Holyoak

MOLLUSC ANALYSES OF TWO NEOLITHIC SITES ON THE COTSWOLDS

Recently Alan Saville's excavation of a henge at Condicote and a long barrow at Hazleton have provided palaeoenvironmental evidence from the Cotswolds. Below the Hazleton barrow was a subsoil feature containing a small assemblage of shade-loving species including *Acicula fusca* and one example of *Vertigo alpestris*. This assemblage probably represents climax woodland significantly predating the monument. Unfortunately the upper horizons of the old land surface were devoid of Mollusca. Post-monument environmental evidence is provided by samples from the quarries, the secondary fill of which contained largely shade-loving species suggesting a degree of regeneration following the monument's construction. An overlying stabilization horizon probably represents a long hiatus when few molluscs were preserved, above this is colluvium with a restricted open country assemblage. The sequence of ecological changes in the Condicote henge ditch 11 km away is closely comparable, though here there are also shade-loving species in the primary fill and the secondary fill has a much larger shade-loving assemblage implying that the henge may actually have been constructed within woodland. Thus both sites have produced evidence of post-monument woodland regeneration suggesting perhaps that Neolithic sites on the Cotswolds may not have been constructed and used in such a uniformly cleared and tame landscape as archaeologists have tended to assume extrapolating from John Evans' work in Wessex.

Martin Bell, Department of Geography, University of Bristol

MOLLUSCAN BIOSTRATIGRAPHY OF FLANDRIAN SLOPE DEPOSITS IN THE SOUTH DOWNS

The biostratigraphy of Postglacial dry valley infill deposits have been studied in Sussex, at Asham Quarry near Lewes and at the Devil's Dyke near Brighton.

Sections at these sites show Late-glacial chalky solifluxion deposits overlain by a Postglacial soil that has been buried by colluvial deposits.

Analysis of the sediments has revealed that they contain molluscan assemblages representing biozone z of the Late-glacial and biozones d, e and f of the Post-glacial. Particular attention has been paid to the biozones e and f that are attributed to man's influence on the environment. The base of biozone e is defined by the re-expansion of the grassland species as a result of forest clearance by man, and zone f by the appearance of Helix aspersa, an introduced Mediterranean species that became widespread in lowland Britain during the Romano-British period. In the later part of zone f the most recent immigrants, the "common" helicellids appear and expand, namely Ceruella virgata, Candidula gigaxii and lastly Candidula intersecta.

Caroline Ellis, Dept. of Geology, Imperial College

APPLICATION OF BIOLOGICAL STATISTICS TO FOSSIL MOLLUSCAN DATA FROM ASHAM QUARRY

Three biological statistical methods have been applied to the molluscan data from Late-glacial and Postglacial sediments at Asham Quarry, near Lewes. Two species composition parameters proposed by Hurlbert (1971, Ecology 52, 577-86) demonstrated low "diversity" in the relatively unstable open country environments of the Late-glacial (biozone z) and during vegetation clearance in the Postglacial (biozone e) and a high "diversity" in the stable woodland environment (biozone d). A marked decrease in diversity is demonstrated prior to the biozone change indicating that these measures are probably more sensitive to environmental change than conventional zoning criteria. Comparison with the absolute number of Mollusca allowed the differentiation of sedimentary from environmental change. These proposals were tested by comparison with a completely independent data set, the life expectancy data of the juvenile stage of Trichia hispida, which also demonstrated the possibility of distinguishing small climatic fluctuations from random fluctuations due to sample error.

David Gordon, Geography Dept., Bristol University
and Caroline Ellis, Dept. of Geology, Imperial College

THE INTERPRETATION OF MOLLUSCAN ASSEMBLAGES FROM ARCHAEOLOGICAL DEPOSITS

Two points are made about molluscan analyses from archaeological deposits. One concerns the use of diversity indexes, the other the context of the assemblages.

Diversity indexes reduce much of the information in an assemblage to a single value, thus allowing easy assessment of a sequence and comparison of assemblages from different sites. Most useful is the Shannon-Wiener index which combines (a) a measure of evenness of the distribution of numbers among the species with (b) the number of species. The Brillouin index incorporates, additionally, the total number of specimens. Diversity indexes are only informative at the level of species diversity and must be used with more conventional ecological interpretations.

The context of molluscan assemblages, especially whether from ditches or extensive level areas, is crucial to their interpretation. Stable grassland may survive for long periods, even in the absence of grazing, if there are no sites for woody species to invade. On the other hand woodland often develops in ditches where breaks in the soil surface allow colonisation.

In the Avebury area of north Wiltshire regeneration of woodland in the later

Neolithic took place, although some sites remained as grassland from earlier times. The grassland was tall and ungrazed, so both types of environment suggest a reduction in land utilisation by prehistoric groups. The diversity of the woodland faunas was as high as those of the Atlantic forests, but the total range of diversity in the later Neolithic was much greater.

J. G. Evans, Department of Archaeology, University College, Cardiff

TAPHONOMY OF MOLLUSCA IN AN ALPINE RIVER

A few pioneer studies in fluvial taphonomy have stressed the need to delineate the variables that control transport of organic remains in order to determine the means of accumulation of fossil assemblages. Experimental methods have been used as a means to identify factors that are significant in controlling shell transport by water. Using a recirculating flume attempts have been made to delineate these factors using a range of shell material.

Sediment transport equations suggest that shape, size, and density are the most important factors controlling particle transport. Thus a range of shells have been classified into shape categories, and within these categories the average critical entrainment velocity for a number of shells has been determined, varying shell size, density and size of bed material. It is hoped to link critical entrainment velocity of shell particles to these factors in some quantitative way which would aid interpretation of fossil assemblages.

Initial results have shown that size and shape are both significantly correlated with critical entrainment velocity. Multiple regression analysis has shown that size and shape account for 42.7% of the variance in critical entrainment velocity. It is hoped to raise the level of "explanation" by including the variable, density, in the analysis. This work is at present continuing.

L. Harris, Geography Dept., Sheffield University

ARE THERE MODERN ARCTIC ANALOGUES FOR THE MOLLUSCA OF THE DEVENSIAN?

Faunas of land and freshwater Mollusca similar to Devensian fossil assemblages from southern England have been sought at a number of locations in the Arctic. Study regions on two high-Arctic islands with continuous permafrost (Banks Island, N.W.T., Canada; Vest-Spitsbergen) both lacked land snails. Banks Island had two aquatic species, both of them living in habitats with unusually mild thermal regimes. No aquatic molluscs were found on Vest-Spitsbergen. Physical processes and some aspects of the floras in these two regions appear similar to those reconstructed for the Middle Devensian in England, so it is surprising that their molluscan faunas are markedly poorer. One possible explanation for this difference is the shortness of the arctic summer.

Richer land snail faunas were found in rocky coastal sites in arctic Norway, where sea-spray was a source of bases. A large form of Pupilla muscorum comparable to the English Devensian form occurred there, in markedly salty habitats. It was accompanied by a number of other land snails, locally including Vallonia pulchella, Vitrina pellucida, Oxychilus alliarius, Clausilia bidentata, Balea perversa and Arianta arbustorum, several of which do not occur in the Devensian deposits in England. Thus, no close match was found for the English Devensian faunas, suggesting perhaps that the environments examined do not closely match those of the Devensian.

D. T. Holyoak, Department of Botany, University of Reading

The site, which lies beneath a low terrace of the Great Ouse downstream of Newport Pagnell, was found by C. Young in 1981. The deposits fill a channel in the Upper Lias. They consist of a thin gravel at the base covered by 1.7 m of organic muds topped in turn by two suites of gravel which are divided by a silty clay layer. The organic muds have yielded Mollusca (D.H.K.), ostracods (J.E. Robinson), pollen (R.L. Jones), plant macros (J.H. Dickson), insects (G.R. Coope). The sedimentology and stratigraphy are being described by C. Young and C.P. Green.

The Molluscan sequence from the organic deposits can be zoned into three. At the base a zone dominated by Valvata piscinalis and Bithynia tentaculata but which also contains Corbicula fluminalis, Pisidium ammicum and P. moitessierianum also indicative of moving water. In this zone also are small numbers of land Mollusca largely of grassland type (Pupilla muscorum) but also the shade demanding taxa Discus rotundatus, Azeca goodalli, Clausilia pumila and Cochlodina laminata.

The bulk of the samples from the organic mud yield a fauna indicative of a clear pond. The Mollusca are dominated by Gyraulus laevis with the pond bivalves Sphaerium corneum and Pisidium casertanum.

The upper levels of the organic mud contain a more varied planorbid fauna dominated by Anisus vortex, Armiger crista and Hippeutis complanatus together with Acroloxus lacustris. This fauna probably marks the infill of the pond and increasing quantities of aquatic vegetation, a trend confirmed by the increase of the marsh species Lymnaea truncatula, Oxyloma pfeifferi and Vallonia pulchella.

As a whole the fauna contains 43 taxa. Such a number and the individual species present are clearly indicative of warm, probably interglacial conditions. The age of the fauna is unclear although evidence from insect remains suggests an age intermediate between the Hoxnian and Ipswichian.

D. H. Keen, Dept. of Geography, Lanchester Polytechnic

THE POSTGLACIAL HISTORY OF NON-MARINE MOLLUSCA IN THE BRITISH ISLES

In recent years much new information has been obtained on the Postglacial (Flandrian) history of non-marine Mollusca in the British Isles. Studies have focussed on three main types of deposit: (1) chalk muds and rubble (solifluxion debris) deposited during the Late-glacial period (13,000 - 10,000 BP); (2) tufaceous (spring-chalk) deposits spanning the period between 10,000 - 5,000 BP; (3) slope washes resulting from human forest clearance episodes (after 5,000 BP). In many dry valleys in southern Britain it is possible to observe this tripartite stratigraphy in direct superposition. Detailed quantitative analyses of the Mollusca from such profiles led to the conclusion that after the Last (Devensian) Glaciation, land snails recolonised Britain in an ordered sequence. The consistency of this biostratigraphical sequence prompted the definition of a series of molluscan assemblage zones, analogous to pollen zones, which are recognisable over large areas of southern Britain. Radiocarbon dating has provided a means of assessing the synchronicity of these zones in different regions and attempts have also been made to correlate them with the standard Godwin pollen zonation. Certain regional differences have emerged both in the character of the zonal assemblages and in their dating. Such dates throw considerable light on biogeographical history.

R. C. Preece, Sub-department of Quaternary Research, Cambridge

ABSTRACT - THE BIOSTRATIGRAPHY OF FLANDRIAN TUFA DEPOSITS IN THE COTSWOLD AND
MENDIP HILLS

Detailed biostratigraphical study of tufaceous and associated deposits at sites in Kent, has enabled the establishment of a series of local molluscan biozones. The basic pattern of such zones has been recognised from similar deposits at isolated sites in other parts of England and Wales. However, little biostratigraphical work has been completed for sites in South Western England, only one at Blashewell being analysed in any detail.

A study was introduced of the mollusca (plus associated biota, ^{14}C dates of critical zone boundaries being given wherever possible) from -

(1) Deposits within the fairly restricted region of the Cotswold and Mendip Hills.

and (2) where such deposits were of sufficient extent laterally separated sections.

In order to show -

(1) That regional biozones could be isolated and how they compared with those from Kent,

and (2) that although facies variation existed it did not obscure the local picture.

Molluscan biozones resembling Z, E and F were only described from two sections but those similar to A, B, C and D could be seen clearly at all sites. The major differences from the Kent biozones being the much earlier appearance of Leiostryla anglica and the later arrival and expansion of Vitrea crystallina. A number of local variations were also described.

M. J. Willing, Geography Laboratory, University of Sussex

REVIEWS

'Slugs' by Shaun Hutson.

A Star Paperback book, published by W. H. Allen & Co. Ltd., 1982. Price: £1.60

"They slime, they ooze, they kill - ". The 'eyecatching' cover of this novel, depicting a slug eating a very feminine eye, must have sold a number of copies to slug fetishists like myself.

The publishers' blurb on the back of the book states that, "one female slug can lay one and a half million eggs a year - a fact which holds terrifying consequences for the people of Merton". This statement, if it was true, would cause shudders of horror in all gardeners throughout the world, as well as devastating agriculture and threatening starvation on a world-wide basis. This in itself would have produced a horror of ~~horror~~ stories. Unfortunately the author, under the old adage "a little knowledge is a dangerous thing", must have thought that this statement was true. As well as making simple mistakes like talking of "female slugs", the book also combines totally unrelated aspects such as the liking for damp house cellars and drains, a beloved habitat of such species as the yellow slug Limax flavus, and the carnivorous preferences of the three species of Testacella. Add to this the fact that he does not seem to know of the existence of Arion ater, or at least to have been aware of how big this slug can grow, and you have a malacological muddle.

The slug he has concocted from his knowledge is externally identifiable as Arion ater, growing to about 8 inches in length. The text states that "a common black slug is about three quarters of an inch long". Its jaws are those of a species of Testacella, as it is construed as a carnivorous species, eating 'live'

meat, including people. The slugs must also have originated in warmer climes to have come into contact with the disease Schistosomiasis.

If, however, you overlook the series of scientific misconceptions, and are able to take the book purely as a piece of science fiction, in the true horror mould, then this book has a lot to recommend it.

The plot relates the discovery of a series of partially-eaten corpses in the village of Merton. The subsequent investigations by the health department officer, and his local natural history contact at the Merton Museum, lead to the conclusion that a new, genetically aberrant species of slug has developed in the Merton district. The slug is carnivorous with a preference for warm-blooded animals, especially man, and seeks its prey after emerging from its hiding places in vast number. No one can escape now read on

A. Norris

'The Nautilus and the Gang of Three' by Jacques K. Lee.
Vantage Press, New York, U.S.A., 1983. \$6.95. Available in the U.K. from
Precioushells, 2A Vant Road, London, SW17 8TJ (01-767 5265) at £3.75 + 50p postage.

This might be called an anthropomorphic book, and shells are regarded for the purposes of the story, as thinking beings, capable of human activities - and failings.

To quote the book jacket: "Three important sea shells are out to challenge the position of a fourth, Nautilus Pompilius, heretofore always regarded as the supreme ruler of all the molluscs. So an international, underwater conference is called, with molluscs travelling from all over the world A hermit crab manages to sow 'pandemonium' among the different camps"

Curiously enough, although the molluscs from oceans far apart afford each other familiar recognition, none of them seems able to realise that the villain is a non-mollusc.

The book was originally written for the author's young son and the style is simple and straightforward, encouraging the view that it is a modern form of fairy-story, suitable mainly, but perhaps not entirely, for children. It is described in a duplicated hand-out as 'an adventure story as well as an educational book': this combination is notoriously difficult for an author to handle, as anyone who has read the Victorian novel 'Glory of the Sea' by 'Darley Dale' will agree, but in the present instance the scientific portions of the book will interest only the complete non-conchologist; they are quite painless.

The characters of the shells are said to be modelled on well-known individuals such as Mohammed Ali, Gandhi, Shakespeare, Pope John Paul, etc., but these portrayals are hardly brought out, since the book is too short to develop them as much as one would like. It is in fact 37 pages long, nine of which consist of witty and accurate drawings.

Mr. Lee's book introduces us to a world of fantasy of a particularly modern kind, likely to appeal to many children, and to introduce them to the world of natural history. Lifetime interests have been founded on less.

T. E. Crowley

Molluscos de la Ria de Vigo, 1, Gastropodos. By Emilio Rolan M.
Published and distributed by Ediciones del Sar-Velograf, Milladoiro, s/n,
Santiago de Compostela, Spain. 1983. ISBN: 84-300-8957-84. 383 pp. Price

This book begins unconventionally to English eyes. Instead of a title page there is a sketch map for fishermen showing where molluscs are to be found in the Vigo estuary. It then suffers from a large number of preliminaries: foreword, introduction and justification, "finalidades" and (finally) acknowledgements. The estuary is described physically, geographically, geologically and sedimentologically (the last by F. Villas). There is next a description of the area covered, recording and collecting methods, identifications and list of stations where samples or collections were taken, another foreword, three keys (to Molluscan classes, families and genera), a list of 435 validated species, a line drawing with Spanish gastropod terminology. Finally, the bulk of the book consists of entries for all 479 species that have been thought to have lived in the Vigo area. The species have been arranged "taxonomically". The orders, families, etc., are also given.

I am sorry that I have to embark on another list, but this is the only way to bring out the full scope of this excellent book. For each species the information is arranged under the following headings: scientific name including authority and date; distribution map, shaded or as points; photographs and line drawings; synonyms; description of shell; variations found; dimensions (mm); habitat, abundance, zone and weed; depth; the animal, its distinguishing features as found by the author and collaborators; distribution in the estuary and a list of the recording grid squares in which it was found; behaviour in the species' natural habitat and in an aquarium; vernacular names used by local fishermen; cited by whom, to live in the estuary: a summary of published records; bibliographic references, a list of numbers referring to the bibliography at the end of the book. Needless to say, not every species is treated with information under all the headings, even so, this is a very extensive and all-embracing work.

It is the synthesised knowledge and observations of Emilio Rolan and a dedicated team of biologists, skin divers, fishermen, mollusc enthusiasts and friends accumulated since 1965 when the survey began. In many ways Dr. Rolan and his friends tackled more than they could really cope with, but it is a very creditable performance and a model for other amateur marine survey groups to emulate.

The area covered by the survey includes, as well as the Vigo estuary, the Galacia Bank (c. 120km west of Vigo) and the intervening continental shelf. The lower depth for the survey was 3000 metres. I think that they should have left the offshore survey for another book. The area within the estuary is subject to similar environmental conditions, producing graded but related habitats whose parameters are fairly well known. The deep water habitats on the Galacia Bank and the continental shelf are less known and much less easily sampled. There appears to be no overlap in the fauna of the estuary and its surroundings and the bank and deep continental shelf. Only 4 samples came from the Galacia Bank and 3 from the continental shelf, but the literature records are numerous as the Porcupine, Talisman and Traveilleur research vessels sampled in this area in the past. Much of the material from the Galacia Bank is in poor condition as the photographs show. Material from great depths may have been accumulating there for hundreds, even thousands of years, so there is no certainty that the species was living there unless it was collected alive. The author decided that since so many interesting molluscs are, or were, found in these offshore areas they should be included. I feel that his efforts would have been better directed if more checking of facts gleaned from the published literature had been done, with much more editing of the manuscript, especially the bibliography, would have eliminated many silly little mistakes.

The nomenclature used in this book often differs from that used here, but as some synonyms are given it is possible to equate our names with theirs. Some of the nomenclature and identifications too, are inexplicable, for instance Charonia lampas (Linné) is called C. rubicunda (Perry) (an Australian species). Even if

they were the same species the rules of nomenclature demand that the oldest available name should be used, i.e. C. lampas.

Dr. Rolan has put right one nomenclatural problem by re-naming an Onoba, O. vigoensis which was previously known as O. affinis Jeffreys, 1844, found to be preoccupied by Rissoa affinis Aradas, 1847. The re-named species has been fully described and figured. Perhaps not the best place for nomenclatural tinkering?

There are several un-named species illustrated and discussed. I think that many of these can be referred to other species in the book, for instance, species 42, Tubiola sp, is most likely to be a small Skeniopsis planorbis.

The line drawings and photographs range from indifferent to good, but on the whole good prevails. The combination of photographs and line drawings is ideal, I would wish that many more authors and publishers would follow this example. Obscure detail can be emphasised in the line drawings while the photographs give a good overall impression. There are some nice scanning electron micrographs of apices and shell sculpture. There should be no problem using the illustrations to identify shells, even if, like me, you cannot read Spanish. Let's hope that Emilio Rolan has managed to get all his identifications correct, no easy matter as he admits, but he has obtained the help of some eminent malacologists including Dr. Bouchet of Paris.

Although Emilio Rolan has included fully figured and described upper shore and freshwater species he has contented himself with merely listing the Saccoglossa and Nudibranchia. Perhaps he feels that there have already been many beautiful books and monographs covering these groups.

On the whole the book is a good buy for anyone interested in the marine Mollusca of north-west Spain. It is as easily usable by a beginner as by an expert, but you may find that this book will pose more problems than it solves, however this can be stimulating too.

Celia Pain

"THE HEYDAY OF NATURAL HISTORY" BY LYNN BARBER. JONATHAN CAPE, 1980. £9.50

Chapter 11, p. 159-160. In the first half of the nineteenth century there were still countless private natural history collections which, in their field, surpassed the national collections. One of the last, and one of the greatest, was the shell collection amassed by the English conchologist Hugh Cuming (1791-1865) which must stand as a representative for all the hundreds of other private collections which flourished in this era.

Some biographers believe Cuming to have been illiterate: certainly he was of humble origins and spent his early manhood working as a sail-maker in Valparaiso, Chile. But by the age of only thirty-five, he had made enough money to retire from business and devote himself full-time to his hobby. In his specially fitted yacht, the Discoverer, he toured the islands of Polynesia, the western coast of South America, and the Philippines, scouring their beaches and dredging their shallows. His tours were like royal progresses: he would gather all the natives and children on the beach, show them what he wanted, give them each a bag, and promise to reward the finders of the biggest haul or the rarest specimens. His name was known in all the South American ports, thanks to his sail-making years, and sailors and fishermen would hoard special shells to sell to him on his next visit. Cuming was a dealer as well as a collector. Whenever he heard of a naturalist going out to some conchologically virgin shore, he would offer to pay his expenses in return for shells. The duplicates could be sold to amateurs, or exchanged for better specimens. Of course, Hugh Cuming was lucky in his speciality - shells are small,

light, durable, easy to recognise, and need no laborious preparation - but he was also unusually businesslike. And he endeared himself to his closest colleagues by never writing a single scientific paper. While men like G. B. Sowerby II and Lovell Reeve built their reputations by describing the Cuming finds, all Cuming wanted was to bask in the satisfaction of ownership. Albert Gunther of the British Museum recalled seeing him at Zoological Society meetings in the 1860s:

Cuming attended the meetings regularly, always occupying the same seat, and invariably appearing in evening dress. Poor Martens (Dr. Eduard von Martens) was severely reprimanded by him when he appeared as a guest at a meeting with muddy boots. Cuming never uttered a word at any meeting...He lived a solitary widower, always working at his collection of shells, but never describing a species.

In 1846 Cuming believed that he was dying and wrote to the British Museum Trustees offering his collection for £6,000, an absurdly modest price. At that time, it numbered 52,789 specimens, representing at least 18,000 species and including many type specimens and holotypes. This was almost twice as many shells and species as the British Museum then owned, but the Trustees (against the advice of all eminent naturalists) refused the offer, which was perhaps as well since Cuming then survived for another nineteen years, and when the British Museum did finally buy the collection from his executors for £6,000 it was even larger and finer than in 1846. No sooner had the collection been moved to the British Museum than Mrs. J. E. Gray, wife of the Keeper of Zoology, carried the open drawers of shells across a courtyard in a howling gale and all the labels blew away. The Cuming collection has been a source of vexation and controversy to conchologists ever since.

(from Betty M. Smith)

COLLECTORS IN EAST AFRICA - 9. J.H. SPEKE

John Hanning Speke (1827-1864)

During the famous journey of 1858 which resulted in the first European sighting of Lake Tanganyika by Sir Richard Francis Burton (1821-1890), his companion, Capt. J.H. Speke (1827-64), collected a few shells on its shores. One of the most fascinating problems of East African conchology was thus made known before almost any of the more ordinary molluscs of the area had been described! These found their way back to the British Museum where S.P. Woodward (1821-1865) remarked on their curious marine appearance. The incredible arguments which were to fill hundreds of articles and several books were soon to begin. Was Lake Tanganyika an inland Jurassic sea cut off and isolated with subsequent freshening of the water? E.A. Smith, when describing more shells from the lake in 1881, drew attention to the possibility. The subsequent discovery of a jelly-fish in the lake by Dr. Böhm seemed to clinch the matter. Later of course, freshwater jelly-fish were found in other lakes and rivers, and different theories (which I touched on in my first Presidential address) came to prevail. Woodward's early perspicacious placing of the shells in the Melaniidae is now known to be correct. Later Speke made the famous journey accompanied by Capt. J.A. Grant (1827-1892) during which the first collections of dried plants were brought back from the interior of East Africa and one of the sources of the Nile found; that perennial problem which had vexed men since antiquity (though I suspect some ancient Egyptians probably penetrated far south), was at least partially solved. Volumes have been written about Burton and Speke, two men so different in character that it is difficult to see how they could have tolerated each other for a moment. Burton was a romantic arabist who spoke some thirty languages, had translated the Arabian Nights and more recondite erotica, a strange mixture of fastidious scholar and debauched libertine, but one of the best informed and scholarly of Victorian explorers. Speke was a more conventional respectable young Victorian. About all they had in common was toughness

and a remarkable facility for learning languages. Those who wish to read more about this fascinating pair will find an excellent account in Alan Moorehead's 'The White Nile'. Some very revealing remarks made by Speke about Burton in some of his letters to others are mentioned in an auction catalogue for the sale of J.A. Grant's papers which is well worth reading (see beneath). Speke and Burton were to have wordy battles later in England and even now no one is quite certain that Speke's death was due to "accidental discharge of his own gun", the verdict returned by the coroner's jury - the faint possibility that he committed suicide just before he had agreed to meet and argue with Burton on a public platform is perennially suggested and, if true, very sad because Speke was right and Burton wrong over the fact that Lake Victoria was a source of the Nile.

List of molluscs described from the material collected by J.H. Speke

- Iridina (Pleiodon) spekii Woodward, 1859. Tanzania, Lake Tanganyika. = Pleiodon (Cameronia) spekii (Woodward, 1859). Holotype in BM 1859.12.23.8
- Lithoglyphus zonatus Woodward, 1859. Tanzania, Lake Tanganyika. = Spekia zonata (Woodward, 1859). Syntypes in BM 1859.12.23.10 (two specimens, one marked with black dot by Connolly? selected as lectotype)
- Melania (Melanella) nassa Woodward, 1859. Tanzania, Lake Tanganyika. = Lavigeria nassa (Woodward, 1859). Syntypes in BM 1859.12.3.11 (two specimens, one not marked with black dot selected as lectotype)
- Unio burtoni Woodward, 1859. Tanzania, Lake Tanganyika. = Grandidieria burtoni (Woodward, 1859). Holotype in BM 1859.12.23.9 (also figured by Sowerby, 1866, Conch. Icon. 16 Unio species 251, pl. 47, fig. 251)

References

- Catalogue of Autograph Letters, Literary Manuscripts and Historical Documents.
Volume 1 Tuesday 13th. March 1979. Sotheby's, London.
- Moorehead, A. 1960. The White Nile. pp. 385, numerous illustrations and maps.
London.
- Woodward, S.P. 1859. On some new freshwater shells from Central Africa. Proc.
zool. Soc. Lond. 1859: 348-350, pl. 47/figs. 1-4.

B. Verdcourt

INTERNATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE

c/o. British Museum (Natural History), Cromwell Road, London, SW7 5BD
Reference number: ITZN 11/4 (A.N.(S.) 126 21 July 1983

The Commission hereby gives six months' notice of the possible use of its plenary powers in the following case, published in the Bulletin of Zoological Nomenclature, volume 40, part 2, on 15 July 1983, and would welcome comments and advice from interested zoologists.

Correspondence should be addressed to the Secretary at the above address, if possible within six months of the date of publication of this notice.

Case No. 2332 Mactra sachalinensis Schrenk, 1862 (Mollusca, Bivalvia): proposed

conservation.

R. V. Melville, Secretary

Reference Number: ITZN 59

The following Opinions have been published by the International Commission on Zoological Nomenclature in the Bulletin of Zoological Nomenclature, vol. 40, part 2, on 15 July 1983:

Opinion Number

- 1251 (p. 88) Dicranodonta Woods, 1899 (Bivalvia, Cucullaeidae): designation of type species.
- 1253 (p. 92) Chromodoris californiensis Bergh, 10 May 1879 (Mollusca, Gastropoda): conserved.
- 1254 (p. 94) Prohysterocheras Spath, 1921 and Neokentrocheras Spath, 1921 (Cephalopoda, Ammonoidea): designation of type species.

The Commission regrets that it cannot supply separates of Opinions.

R. V. Melville, Secretary

GENERAL NOTES

CHRISTMAS 1983: The Newsletter Editor sends Seasonal Greetings and Good Wishes for the New Year to every reader.

YOUR NEWSLETTER IN 1984: I need more articles about 3 - 4 Newsletter pages long as well as all kinds of shorter reports, news items and information. I shall be very pleased to have something from Junior members - collecting experiences or visits to see shell collections in museums for example. I hope to have more line drawings of shells and mollusc anatomy, maps and diagrams too. There is room for contributions at all levels, beginners, experienced collectors and researchers both amateur and professional. So remember, it is your contributions which produce your Newsletter.

P. E. Negus

T. E. CROWLEY. There is an article on our centenary President in The Oxford Times, 21 May 1982, with a portrait, on the occasion of the publication of his book, The Beam Engine (Senecio Press, Oxford).

WANTED: Dr. E. Rolan from Vigo, Spain, [REDACTED], is looking for spp. of Hinia reticulata nitida, Jeffreys from the Thames or Orwell rivers. Around 20-30 spp in alcohol or formalin. In exchange offer Conus from C. Verde Is., shells from Vigo or another country.

ELSEVIER ANTIQUARIAN DEPARTMENT, Lippijnstraat 4, 1055 KJ Amsterdam, Netherlands specialises in Malacological journals and rare books. Please ask for specialised catalogues and offer us your set of Journal of Conchology. Tel.: 20-861541.

FOR SALE: We are suppliers of tropical sea shells, land snails, coral and sea curios to collectors, schools and colleges. S.A.E. for lists.

Nature of the World, 19 Bell Lane, Fetcham, Leatherhead, Surrey.

MOLLUSCAN HEROES AND VILLAINS: Read all about Lambis violacea the first ever feminist mollusc; Turbinella pyrum who sees himself as Vishnu's Messiah and speaks with an Indian accent; Tridacna gigas the overweight coward who runs a "take-away restaurant" and Nautilus pompilius the supreme ruler of all the molluscs, in: THE NAUTILUS AND THE GANG OF THREE by Jacques K. Lee. Published in USA at \$6.95. Special offer to members of the Conchological Society of G B & I - £3.75 plus 50p for postage and packing. Only limited stock available in UK. Ideal present for conchologists of all ages. Cheques should be made payable to Preciousshells. PRECIOUSHELLS, 2A Vant Road, London, SW17 8TJ Tel.: 01-767 5265.

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