

PORCUPINE NEWSLETTER

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The recent meeting at Portaferry, although sparsely attended would appear to have been a resounding success and it is hoped that the proceedings will appear in the next edition of the Newsletter later this year.

Included in this issue are details of the Autumn meeting to be held at Portsmouth on the 23/24th September, 1978 with the theme "The Ecological Impact of Seaweeds". The proposed programme can be found on pages 92 and 93 and promises to be invaluable to anyone interested in marine ecology and members wishing to attend should notify the organisers as soon as possible.

Membership continues to remain steady, numbering some 117 individuals and institutions scattered as far afield as the U.K., Germany, Australia, etc., and a current list of members accompanies this Newsletter. Any additions or corrections to the annotated interest of members should be sent to the Secretary or Editor for inclusion in future issues.

Finally, members are reminded that contributions comprising reviews, notices of forthcoming events, news of personal and joint research projects, requests for information, etc., should be sent to the Hon. Editor of Porcupine, Mr. F.R. Woodward, South Shields Museum and Art Gallery, Ocean Road, South Shields, Tyne and Wear NE33 2TA, or to the Hon. Secretary of Porcupine, Dr. Shelagh Smith, Royal Scottish Museum, Chambers Street, Edinburgh EH1 1JF.

F.R. WOODWARD
Hon. Editor.

COMMITTEE NOTES

ACCOUNTS FOR THE YEAR ENDING 5th APRIL 1978

Income and Expenditure Account

Dr.	£	p	Cr.		
			£		
			p		
To Donations	202	50	By Stationery	7	19
Entrance Fees	26	00	Postage	56	71
Subscriptions for 1977	24	20	Speakers' Expenses	62	42
Subscriptions for 1978	200	60	Meetings	60	00
Receipts from Meetings	22	27	Excess of Income over Expenditure carried to		
			Balance Sheet	289	25
	<u>£475</u>	<u>- 57</u>		<u>£475</u>	<u>- 57</u>

Balance Sheet

Dr.	£	p	Cr.		
			£		
			p		
To Subscriptions paid in Advance	5	56	By Cash at Bank	633	93
Balance at 6th April 1977 ...	347	16	Petty Cash in Hand	8	04
Transferred from Income and Expenditure Account ...	289	25			
	<u>636</u>	<u>- 41</u>			
	<u>£641</u>	<u>- 97</u>		<u>£641</u>	<u>- 97</u>

Charles Pettitt, Norman A. Holme
 Hon. Auditors
 10 July 1978

David Heppell
 Hon. Treasurer
 1 June 1978

PORCUPINE SOCIETY MEETING

DEPT. OF BIOLOGICAL SCIENCES, PORTSMOUTH POLYTECHNIC

SATURDAY/SUNDAY 23/24 SEPTEMBER 1978

Local Secretaries: Dr. M. Carter and Mr. W. Farnham

Theme: The Ecological Impact of Seaweeds.

PROGRAMME

Saturday morning: Chairman: Dr. R. Parker

- 9.15 Address (Welcome by Dr. R. Parker, Deputy President Portsmouth Polytechnic.
- 9.30 W.F. Farnham (Portsmouth Polytechnic): The Introduction of Marine Algae into the British Isles.
- 10.10 P.W.G. Gray and N.A. Jephson (Portsmouth Polytechnic): Ecological Studies on Sargassum muticum.
- 10.50 Coffee
- 11.20 A. Chamberlain (Univ. of Surrey), J. Gorham and S. Lewey (Portsmouth Polytechnic): Physiological Studies on Sargassum muticum.
- 12.00 S. Gage (MOD Exposure Trials Station, Eastney): Ecology of Laminaria saccharina in the Solent.
- 12.40 Lunch

Saturday afternoon: Chairman: Dr. M. Carter

- 2.00 G. Blunden (Portsmouth Polytechnic): Some commercial uses of seaweeds.
- 2.40 M.D. Guiry (Portsmouth Polytechnic): Life history studies of carrogeenophytes.
- 3.20 Tea
- 3.50 H. Powell (S.M.B.A.): The distribution and ecology of Macrocystis.
- 4.30 R.L. Fletcher (Portsmouth Polytechnic): Studies on Marine Fouling Algae in the Solent.

Sunday morning: Chairman: W.F. Farnham

- 9.30 E.B. Gareth Jones (Portsmouth Polytechnic): Algicolous Fungi.
- 10.10 Y. Chamberlain (Univ. of Surrey): Crustose corallines at Bembridge, Isle of Wight.
- 10.50 Coffee
- 11.20 D. Kane (Shell Toxicology Laboratory, Sittingbourne). Sewage contamination and marine algal growth.
- 12.00 G. Russell (Univ. of Liverpool): Seaweeds as Environmental Indicators.
- 12.40 Lunch

Sunday afternoon: Chairman: Dr. E.B. Gareth Jones

- 2.00 D.E.G. Irvine (Polytechnic of North London): The Problems of studying the marine algae of the Shetland Isles.
- 2.40 J. Price, and I. Tittley (British Museum, Natural History): Distribution of Algae and the southern shores of the Thames.
- 3.20 Tea
- 3.50 I. Dixon and J. Hodder (Dunet Underwater Survey): To be announced.
- 4.30 W.E. Jones (U.C.N.W.): To be announced.

Details of Accommodation

People attending the meeting will be provided with accommodation in Rees Hall, one of the Polytechnic Halls of Residence, situated close to the Department of Biological Sciences.

An evening meal will be provided in Rees Hall on Friday, 22nd September, and all subsequent meals until the end of the meeting. The inclusive charge (full board) for the meeting will be £16.00 per person plus VAT.

MEETING AT PORTAFERRY, CO. DOWN, 23RD - 25TH JUNE 1978

Shelagh M. Smith

The small attendance at this meeting was disappointing, however, it allowed individual attention. Aspects of meiofaunal investigation covered included collection of material from intertidal sediments and abstraction of animals from sediment, and preliminary excursions into meiofaunal taxonomy and its problems, including temporary and permanent (if possible) preparation of specimens. It perhaps should not have come as a surprise that, using techniques suitable to their delicacy and size, meiofaunal animals are no more difficult to work with than those visible to the naked eye. Hence a fascinating world was revealed. Additionally Pat Boaden, Howard Platt and Jim Parker laid out a comprehensive demonstration of the literature on meiofauna. The weekend was thus very enjoyable.

We have been presented with Scubahystrix boadeni sp. nov. This remarkable 'creature' of which only one example is known, appeared at Portaferry last year. It is bluish green in colour, with a hollow subspherical papyraceous body covered in short blunt spines. It has four stout splayed legs about 10cm. long set low on the body, each with four flattened triangular digits; a cylindrical snout of about the same length widening slightly to a truncated termination 7cm. in diameter containing a pair of olfactory organs, above which is a pair of gold coloured cylindrical eyes about 5cm. in diameter and protruding 4cm. There is no clear demarkation between the head region and the body. On top of the body is a bottle-shaped apparatus with tubes passing to a circular disc-like mouth lying beneath and at the base of the snout. This may be a respiratory or buoyance aid. The animal is 42cm. long and 97cm. in girth. It is rather fragile and has poor resistance to desiccation. It has been suggested that the spines provide a habitat for its own commensal interstitial meiofauna.

FREELIVING MARINE NEMATODES

Howard M. Platt, British Museum (Natural History)

In a recent issue of this Newsletter (Volume 1, Number 4) Dr. Gibson gave a general description of the Phylum Nematoda, reminding us that they exist in an enormous range of habitats both parasitic and freeliving. It can also be safely stated that nematodes are the most abundant metazoan group and are of singular zoological, economic and medical importance. It is the purpose of this short contribution to focus your attention on the freeliving marine forms - to provide an impression of their current taxonomic situation, ecological role and a little of the specific methodology.

Although parasitic forms have been known since ancient times, it was only in the early part of this century that marine forms were studied in any detail. Prior to this time, a split had occurred between those zoologists interested in animal parasitic nematodes (calling themselves helminthologists) and those studying plant parasitic and soil forms (nematologists), leading to a fragmentation of much fundamental knowledge relevant to all nematodes. Marine nematologists tended to form a third distinct group although their links are closer to plant/soil nematologists, both because of the closer systematic connections between plant and marine forms and a common interest of both in ecology. Hopefully, these zoologically artificial separations will gradually become less distinct as greater emphasis is placed on the use of nematodes as biological models in such disciplines as molecular biology and with a reawakening to the fundamental importance of taxonomy.

Whilst helminthologists concentrate on the medical or veterinary aspects of their animals and plant nematologists emphasise the importance of crop infestations, the main impetus to study marine nematodes is to understand their role in marine ecosystems. Hence, great stress must be placed on taxonomic identification. This may at the outset appear a daunting task - almost 4000 nominal marine species assigned to about 450 genera have been described. Fortunately, marine nematodes are rather more varied (=interesting!) morphologically, so that identification down to genus level is in many cases relatively straightforward but time-consuming. However, variation within and between species is not well understood and the concept of a nematode species is still at a very fluid stage.

Reliable identification of the vast array is difficult even for an experienced worker - a problem compounded by the presence of undescribed species, inadequate descriptions and illustrations, lack of type specimens and the lack of keys. But these problems should not deter ecologists from including nematodes in their investigations. Specimens could be assigned to a code-numbered putative species. In this case, it is important to deposit slide-mounted voucher specimens in a recognised institution - it is hoped that ecologists (and others) will make use of the curatorial facilities offered by the BM (NH) for this purpose.

Marine nematodes are found associated with macroalgae and some invertebrates (e.g. in the gill chambers of crabs) but their main habitat is the sediments on the sea bed. They appear to occupy a multitude of niches, judging by their diversity - well over a hundred distinct species may be found within a few square centimetres. Many are microbivores, having small or non-existent buccal cavities. Others are herbivorous with larger mouths capable of scraping material off sand grains or ingesting diatom cells. Fewer, but still common, are the predatory or omnivorous forms which are usually equipped with teeth or moveable jaws for manipulating their prey. Clearly, trophic specificity could go a long way to explain their diversity but in reality almost nothing is known in detail of their feeding habits.

Professor Gerlach (1971) has recently speculated on the role of marine

meiofauna (of which nematodes are usually the principal component). He suggests that in relation to macrobenthos, the meiobenthos contribute some 15% to the food web. Clearly, the nematode burden could be significant in an economically important area such as a fish or shellfish nursery ground - either directly as food or indirectly by competing for the same energy source. McIntyre (1969) believes nematodes may be at the top of a food chain, and their main role is in recycling nutrients. There is still much to learn.

Finally, turning to methodology - the task is made easier by the relative ease with which marine nematodes can be fixed. They need not be studied live - in fact they rarely are. 4% formalin will normally be adequate except for certain specific purposes. The worms can be handled with a fine wire (tungsten is useful as it can be dissolved to a fine point in molten sodium nitrite) or a sharpened bird's quill. But after fixation they should be treated with special care to avoid the loss of diagnostically important setation. Alcohol is a bad preservative - anhydrous glycerine is mostly widely used and the process of dehydration is simple. The fixed animals are transferred to a mixture of distilled water: ethanol: glycerine (13:6:1 - v:v:v) and the water and ethanol allowed to slowly evaporate; preferably over a few days. The coverslip of the slide mount should be supported with small glass beads of an appropriate diameter and sealed with 'Glyceel' (if required to be permanent). Most workers find differential interference contrast of considerable help when examining the specimens microscopically.

A most important publication is the recent checklist of Gerlach and Riemann (1973/1974) which includes a complete (to 1973) list of the rather dispersed literature.

Gerlach, S.A., 1971. On the importance of marine meiofauna for benthos communities. *Oecologia* 6: 176-209.

Gerlach, S.A. and Riemann, F., 1973/1974. The Bremerhaven Checklist of aquatic nematodes. A catalogue of Nematoda Adenophorea excluding the Dorylaimida. *Veroff. Inst. Meeresforsch. Bremerh. Suppl.* 4: 1-404 (1973) and 405-736 (1974).

McIntyre, A.D., 1969. Ecology of marine meiobenthos. *Biol. Rev.* 44: 245-290.

THE WILLIAM BEAN SHELL COLLECTION - WOOD END MUSEUM OF NATURAL HISTORY, SCARBOROUGH

Ian Massey, Museum of Natural History, Scarborough.

William Bean (1787-1866) inherited land known as Bean's Gardens (a mixture of market garden and pleasure garden situated between Huntriss Row and Pavilion Square, Scarborough) from his father but took little interest in their maintenance. By 1816 the gardens no longer existed, having been sold for building purposes, and Bean presumably became financially secure as a result of their sale. There is no evidence that he had any other occupation - in 1814 on joining the Old Globe Lodge he was described as 'Gardener' but shortly after that date he was described as 'Gentleman' or 'Naturalist' - and after 1816 he seems to have devoted himself to the study of natural history and public service as a long serving member of the Town Council, Alderman and leader of the local Liberal party for many years.

In his early years he seems to have been particularly interested in entomology and botany. No entomological collections seem to have survived but his botanical specimens were donated to the Yorkshire Museum, York by his son Eugene in 1923. In 1824 Bean started his geological collection which was sold to the British Museum in 1859 for £500. However his collection of shells remained in the family until Bean's last surviving son Eugene died in 1926 when they were bought by the Scarborough Philosophical and Archaeological Society.

Because of lack of space in an already crowded museum, the contents of four of the seven cabinets purchased were merged into the others.

The collection is made up of Land, Freshwater and Marine species of mollusca collected on a world wide basis. It is again housed in seven cabinets as well as a large number of storage boxes and has at some time been amalgamated with the collections of J. Linton, Old Mill House, Normanby, Northallerton; William Gynge of Scarborough and Mr. Laverack of Malton, North Yorkshire. There are also numbers of specimens presented by such collectors as Charles Oldham, John W. Tayler, Sir R. Nawson, Ferrussac, Dr. Turton and Captain and Mrs. Hartley.

The British Marine Molluscs are perhaps the most important part of the collection. Almost all the British species are represented although there are some obvious gaps. A list of figured specimens is given below and other interesting species are Adula simpsoni from Shetland; a large number of sinistral and distorted specimens of Buccinum undatum from Blackpool and a sinistral Nucella lapillus from Scarborough that was exhibited by W. Gynge at the Jubilee Meeting of the British Conchological Society in 1926.

The collection was completely reorganised and brought up to date by Adrian Norris of Leeds City Museums in 1969 and is (quote) "perhaps the most interesting collection in Yorkshire".

FIGURED SPECIMENS

1. Hanleya hanleyi (Bean 1844) Holotype

A single specimen stuck on a card slip and labelled in Bean's hand "Chiton Hanleyi Bean. Scarboro. This specimen figd. in Hanley's Marine Conchology".

Note: the reference is to British Marine Conchology by Charles Thorpe, 1844. The Systematic Index of pp. XVII-IX is stated to be by S. Hanley Chiton hanleyi is figure No. 57.

2. Chiton pictus Bean 1844 ?Syntypes

In a circular glass-topped box (labelled Callochiton achatinus (Brown)) is a small disk of thin blue card labelled 34641.4.5.6 and bearing three chitons. Two are small, the central one about $\frac{1}{2}$ " long. This agrees with Bean's statement (Thorpe's British Marine Conchology p. 264) that he had only taken three specimens and the dimensions quoted length $\frac{1}{2}$ " breadth $\frac{1}{4}$ " agree with those of the largest (central) specimen on the card.

A synonym of Tonicella marmorea (Fab), fide Jeffreys, British Conchology Vol. III, p. 227.

3. Beringius turtoni (Bean 1834) Holotype

A fine live-taken specimen labelled Beringius, Dall (-Fusus) turtoni W. Bean, Scarborough. The label is not in Bean's hand as he always seems to have used Scarboro not Scarborough as on present label.

Full reference is Bean W., 1834 Magazine of Natural History Vol. 7 p. 493, fig. 61. Forbes and Hanley comment (History of British Mollusca, Vol. 3, p. 433) 'added to our fauna by Mr. Bean, who obtained it from deep water on the Doggerbank, off the Yorkshire coast'.

4. Nucella lapillus (L)

The famous sinistral specimen. A bandless white shell numbered on the lip 546.41.1 with an old label in Bean's hand 'Purpura lapillus Sinistral Var. Found by Jessy Bean Scarborough'.

5. Cantharidus clelandi (Wood 1828)

Box of specimens and more in plastic bag with an old label in Bean's hand "Trochus millegranus, Ireland, Philippi. The large specimen Figd. in Hanley's Marine Conchology".

The shell figured probably came from J.D. Rose-Cleland of Bangor, County Down, Northern Ireland who first found the species in Britain but it is not now possible to identify the actual shell figured. The box of specimens has an old label (whose?) with it "Trochus millegranus Oban Bay 25F."

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TYPE-LOCALITIES

Nora F. McMillan, Merseyside County Museums, Liverpool

I would like to draw attention to the following summary (in English) of a Dutch publication by Mr. L.J.M. Butot (dated 1977). The summary appeared in the duplicated newsletter of the Dutch Malacological Society (no. 181) - it runs as follows:

"Nature Conservation and type localities. An attentive nature conservation officer, although not a malacologist, happened to have a vague knowledge of the scientific importance of the Kaaskenswater near Zierikzee. When this brackish water lake was threatened by town expansion, he notified his provincial officer. This latter official, not being aware of type-localities and their scientific importance, requested further information. It soon became clear that taxonomists are usually not represented in conservation bodies and that the first line authorities as a rule do not know about the existence and importance of type localities; neither do they know about the presence of type localities in their regions. Nature conservation officers cannot be blamed for ignorance as regards type localities which is a purely systematic topic. It is the scientific responsibility of museum directors to inform conservation bodies about the location of type localities in the county. Their staffs can know in particular about those localities where the urgency of conservation surpasses the general importance of type localities. This is the case when types have been lost, or when only syntypes of allopatric origin are present.

Non-taxonomists should not try to solve problems in this respect, because of nomenclatorial and taxonomic consequences; non-taxonomists should not designate type localities by selecting lecto and neotypes".

Conservationists (environmentalists) as a rule do not realise the importance of type-localities and it is up to taxonomists to ensure that such sites are made known to the appropriate authorities.

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ON THE OCCURRENCE OF Onoba aculeus (GOULD, 1841) IN SCOTLAND AND IRELAND
(PROSOBRANCHIA: GASTROPODA)

Shelagh M. Smith

In the course of preparing the rissoid part of 'Prosobranchs of Britain and Denmark' Prof. A. Graham and Dr. V. Fretter asked for information on and loan of specimens which might be Onoba aculeus (Gould, 1841) rather than Onoba striata (Adams, 1797) = Cingula (Onoba) semicostata (Montagu, 1803). The former has not been previously recognised from Britain, and has been lumped with its congener as a common rissoid of the rocky littoral and shallow seas. The two are, however, generally easy to distinguish, the adult O. aculeus being smaller and thinner-shelled than the comparative O. striata, and in particular has few or no longitudinal ribs, these if present limited to the upper whorls. In the course of field work this year in the Outer Hebrides I got the impression that the two species differed not only in form but also in ecological requirements, O. aculeus inhabiting the fronds of a wide range of algae under various amounts of exposure to wave action, whereas O. striata was to be found in silty crevices such as under boulders, in Laminaria holdfasts and amongst the byssus of Mytilus edulis L., 1758. Further investigation of material in the Royal Scottish Museum in general supports this observation. I have now studied over 70 samples and have found that 90% of them are consistent. Of the others, there are 3 samples (2 from crevices, one from muddy Fucus serratus L. fronds where the species are mixed, and another 3 where I am doubtful of identification. One sample of O. aculeus comes from Laminaria holdfasts where the somewhat threadbare excuse is the extreme clarity of the water on an exposed coast, and 3 more of O. striata come from weed washings where a high percentage of the algal content was Corallina whose roots undoubtedly come into the category of muddy crevice rather than algal frond.

Samples have been obtained from the east coast of Scotland from near Berwick-upon-Tweed to Caithness (20+ samples), Orkney (6), Shetland (4), Outer Hebrides (30+), west coast of Scotland including the Clyde (6), west coast of Ireland (2) and east coast of Ireland (4). Additionally there are two samples from the Isle of Man. Clearly this evidence is slender as it covers a small area of the probable range of the species and the amount of material is inadequate. Under 1,000 individuals have been examined. Reports are urgently required from elsewhere.

Please contact/send specimens to Dr. V. Fretter, Department of Zoology, The University, Whiteknights, Reading, England.

REQUESTS FOR INFORMATION

STAUROMEDUSAE SPECIMENS

P.G. Corbin, Marine Biological Association, The Laboratory, Citadel Hill, Plymouth PL1 2PB.

I would much appreciate the loan of any specimens for examination of any species of Stauromedusae (Haliclystus, Lucernaria, etc.) from U.K. or any other area, in connection with a revision of the world species of the Order and their distributions. I will of course return all specimens after examination and identification.

SPECIMENS COLLECTED BY H.M.S. "CHALLENGER"

Dr. P.F. Lingwood, c/o Merseyside County Museums, William Brown Street, Liverpool.

I am currently, with Dr. I.D. Wallace of Merseyside County Museums, investigating the fate of specimens collected by H.M.S. "Challenger" (1872-1876). This pioneer circumnavigating expedition collected numerous marine organisms, sediment samples as well as occasional terrestrial biological and ethnographical specimens. Most material was eventually deposited at the British Museum where some 'duplicates' were later (1899-1900) redistributed to other institutions including the following:

Abderdeen, University
Aberystwyth, University College
Birmingham, Mason College
Bristol, University
Cambridge, University Museum
Cardiff, University College
Dundee, University College
Dublin, Museum of Science and Art
Edinburgh, Museum of Science and Art
Leeds, University College
Liverpool, Museums
London, Royal College of Surgeons
Manchester, Owens College Museum
Newcastle, Museum
Newcastle, Durham College of Sciences
Perth, Perthshire Natural History Museum
Sheffield, University College
Sheffield, Public Museums
Toronto, University
Warrington, Museum
Woking, Gordon Boys' Home
Worcester, Hastings Museum
Worcester, Victoria University

However these were not the only institutions to receive "Challenger" material as some items were obtained from experts identifying the specimens, members of the expedition crew or through subsequent re-dispersal from the original recipient institutions.

It is difficult to trace the movements of these specimens because of the number of individuals and institutions involved but I would be most grateful for any information on the present or past location of "Challenger" material if possible detailing the amount and type of material and how it was acquired.

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