Porcupine Newsletter

Volume 3 Number 1
JULY 1984

ISSN 0309 - 3085

CONTENTS

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DEATH. The death of Honorary Member Sir Frederick Russell is reported on p.11.

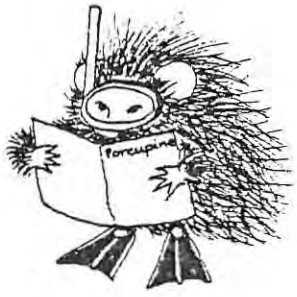
MEMBERSHIP. Still increasing steadily and still good value at £3 a year. Please sustain our success by recruiting a colleague or interested non-professional friend.

NEWSLETTER. The editor appeals again to members to contribute to PN. The feature: "Around the Marine Labs" has proved very popular. Would you like your lab to appear? Any lab in NW Europe is elegible. Please write.

PORCUPINE BANK. The promised revelations concerning the type locality of Thalassiohystrix scuba are held over pending fresh developments (= we can't afford to print any more rubbish about T. scuba in this issue). Don't miss the next number of PN.

FUTURE MEETING. The next "Porcupine" meeting will be a field meeting at the Fal estuary, beginning 21 September. Details are given in Notice 1 on p.8.

Frank Evans, Editor,
Dove Marine Laboratory, Cullercoats,
North Shields NE30 4PZ, England.



REPORTS OF THE EDINBURGH MEETING, 25 & 26 FEB. 1984 (cont.).

ESTUARINE AND COASTAL BENTHIC STUDIES CARRIED OUT BY THE SCOTTISH RIVER PURIFICATION BOARDS

Mike Elliott
Forth R.P.B. Estuary Labs., Port Edgar Marina, South Queensferry.

The U.K. approach to pollution control is based on environmental quality objectives and standards (EQO and EQS), in which quality objectives are defined and standards for those qualities are set depending on the characteristics and uses of the receiving body of water. One such EQO, of ensuring the health of benthic fauna and sediments in relation to their use by indigenous demersal fish populations, has resulted in a large effort being expended by River Pollution Boards on quantitative benthic studies. EC legislation and EQSs relating to the level of contaminants in organisms and water quality in relation to the health of organisms have necessitated qualitative benthic sampling being carried out by the RPBs. Changes in the structure and functioning of communities and organisms are studied in order to minimise the impact of polluting activities.

The RPBs' marine/estuarine biologists in general carry out several types of study with the aims of (a) detecting (i) the extent of problem areas, (ii) deterioration in receiving ares, (iii) recovery in areas of abatement and (iv) the component of the biota/environment at risk in relation to pollutant pathways; (b) attempting to predict changes in the biota/environment as a result of changes in discharge practices; (c) providing information which may be lacking for a particular area but which is needed to make a complete overall environmental assessment. These studies, together with chemical and hydrographical information , allow an environmental assessment of man's impact to be made and specifically provide information for the setting of consents (discharge licences) in relation to EQOs.

The studies require both quantitative and qualitative methods of sampling; the former where changes in communities or populations are under study, the latter where organisms are needed, for example, for contaminant accumulation studies.

The benthic surveying techniques and sampling effort differ with each RPB and the available resources, type of area and aims of the study. If an area is to be monitored regularly, a few stations with many replicates (3-10) are sampled; however, often there is no previous information regarding an area, in which case a larger number of stations with fewer replicates (1-3) would be sampled in a 'pilot study' which may then provide the basis for a later monitoring study. Of the equipment used, for deeper (>5m)

sublittoral areas both the Clyde RPB and Highland RPB use a Day grab ($0.1m^2$) whereas the FRPB use a Van Veen grab ($0.1m^2$) from survey vessels. The CRPB and FRPB also use a Craib corer ($0.0026m^2$) for taking small faunal samples, especially in areas with large infaunal populations, as well as samples for physico-chemical parameter analyses. The FRPB, when sampling shallow sublittoral particulate areas (<5m depth) use a small Van Veen grab ($0.023m^2$), together with taking cores, from a 17 ft. dory The behaviour of this grab has been compared to a similar sized Ekman grab ($0.0196m^2$) for use in shallow water and found to perform better under most conditions.

Hard sublittoral substrata and epifaunal and demersal fish are sampled qualitatively or semi-quantitatively by Agassiz, otter and beam trawls, naturalist's and clam dredges and by scuba diving. Intertidal areas are sampled quantitatively by a combination of quadrat and core techniques.

In benthic surveys, the RPBs study mainly the macrobenthos (i.e. that fauna retained on a 0.5 or 1 mm mesh), which have the advantages of wide use in the assessments of the effects of environmental perturbations, their taxonomic and methodological simplicity (relative to the micro- and meiobenthos), their integration over a long period of environmantal effects and, lastly, in making up the bulk of the benthic standing crop, they provide the major part of demersal fish food. It is often argued that the meiobenthos, in being short-lived with several generations a year, may react more quickly to environmental perturbations. However, methodological difficulties often preclude their use on a large scale.

The mesh-size used to study particulate bottoms is also a function of the type of area under study. The CRPB use a 0.5 mm mesh for all samples; HRPB use 0.5 mm mesh for intertidal and 1 mm for sublittoral samples. The FRPB use both meshes for each replicate at a station by sieving a large sample through a 1 mm mesh and a small sample through a 1 mm mesh over a 0.5 mm mesh; in the latter sample the 1 mm fraction is discarded. The mesh size is a compromise between sampling the small members of the macrofauna (many of which may be opportunistic, pollution-tolerant species or juveniles of larger forms), and yet reducing the effort spent on the survey while at the same time obtaining an accurate estimate of the basal, adult macrofaunal populations. The larger mesh size would dampen the large oscillations in abundance due to large numbers of short-lived juveniles.

The FRPB sampling strategy had been used on several surveys under different conditions. The data suggest that a 1 mm mesh will take, on average, 25% of the abundance, 90 % of the biomass and 82 % of the species number that would be taken on a 0.5 mm mesh. However, those proportions differ with area (coastal or estuarine, fine or coarse sediment, stressed or unstressed

community) It is suggested that if studies are concerned with the suitability of a benthic area as a feeding ground for demersal fish then biomass would be a major parameter studied and that a larger mesh would reduce sampling effort but stil give an adequate assessment of the diversity and available biomass.

It is argued that pollution control authorities should be concerned with the functioning of ecosystems as much as with the structure of communities, and with the interaction between the benthic fauna and other components and their physico-chemical environment. Studies on the functional aspects of ecosystems (i.e. those aspects concerned with rate processes) such as physiological, biochemical growth and productivity studies, may give (i) an indication of sublethal effects of pollutants, (ii) an early warning of effects, and (iii) more rapid methods of environmental assessment than is the case with community studies, which are often labour intensive.

Changes in the structure of benthic communities, in which species may be lost from the system and which may be regarded as catastrophic changes, will always be of value given the nature of polluting activities. However, because of constraints on the available manpower and time for benthic studies by the RPBs, the methodology of those studies is being reviewed constantly with respect to number of stations and replicates, the size and frequency of the samples taken, the faunal component studied and the mesh-size used. The CRPB are at present comparing the use of various mesh sizes and assessing the contribution made by each fraction to the total fauna and their use in community studies. It is argued that, in studying the benthos where minimal cost and effort are the major consideratins, there is a danger of over-compromising, which may in turn yield inaccurate or misleading information.

Finally, with respect to data presentation, it is argued that biologists have not always conveyed to non-biologists the importance of benthic studies in environmental assessments. A compromise has to be reached between, on the one hand over-simplifying a situation as complex as a benthic community and reducing it to a very few pieces of data (as in community diversity indices), the meaning of which can be conveyed to non-biologistss, and yet on the other hand still retaining the biological minutiae of the communities under study.

Acknowledgement is given to Anne Henderson and Peter Holmes of the Clyde RPB, East Kilbride, and Julian Hunter, Highland RPB, Dingwall, for providing much valuable information and comment.

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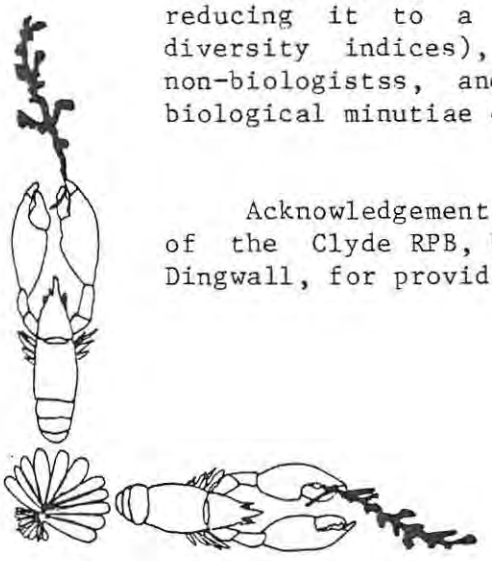

AIMS AND METHODS FOR SYSTEMATIC SURVEY BY DIVERS OF SUBLITTORAL ROCKY AREAS

Keith Hiscock

Field Studies Council Oil Pollution Research Unit,
Orielton Field Centre, Pembroke, Dyfed.

The main requirement for anyone undertaking a programme of survey and sampling is to understand the aims of the work. Once those aims are clear, the methods and equipment to be used will be much easier to determine. For this lecture, the methods applied to three different types of work were described and discussed:

* Descriptive survey and assessment of scientific interest and conservation value of an area.

* Quantitative sampling of communities to describe and compare the component species present.

* Monitoring to detect change.

For descriptive studies, the importance of being systematic and consistent in the selection of survey stations and the use of checklists was emphasised. But also, the use of descriptions in words and of line drawings to illustrate habitats and communities present was encouraged. Assessment of scientific interest and conservation value of a site can use standard criteria but relies mainly on the experience of survey staff.

Quantitative sampling by photography or collection is reasonably easily undertaken but the high degree of heterogeneity on sublittoral rocks makes the selection of representative sites very difficult. An example was given of a programme of sampling from an apparently homogeneous community which revealed differences between in situ survey, photography and samples, and provided data on the distribution of species within the community, minimal sampling areas, etc.

Monitoring to detect changes in sublittoral communities on hard substrata has almost entirely used photography up to the present. The advantages of stereo-photography against single photographs was discussed and it was suggested that single-quadrat photographs were adequate for most purposes. The use of viewpoint photographs of the same easily relocated area was also described and considered adequate for many purposes.

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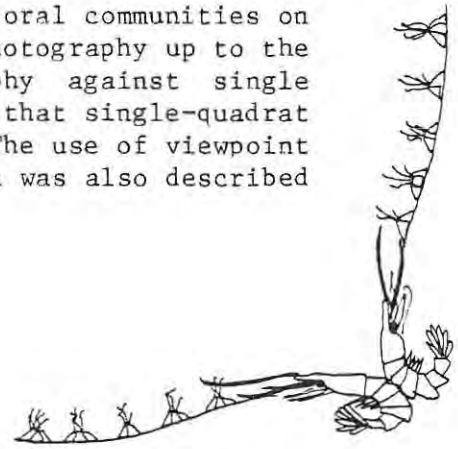

Porcupine Notes and News

OCEANOGRAPHY GOOD-NEWS-FLASH. Following a review of the four university oceanography departments (Bangor, Liverpool, Southampton and Swansea) by the UGC there is to be a major expansion of oceanography at two of them, Bangor and Southampton. The academic staff at Southampton is to be increased from nine to sixteen, including an extra marine biologist, making four. Southampton's Vice-Chancellor says "Clearly, the UGC is determined not just to cut university activities but also to build up academic work in marine science for the benefit of the nation and the university system as a whole." Well, he would, wouldn't he.

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TIGHT BARNACLES. When the Dove Marine Laboratory's research trawler was hauled up on the slip to be antifouled recently, it was noticed that the propellor had a barnacle settlement extending from the boss almost to the tips of the blades, a distance of some 18 inches. At full speed the propellor turns at well over 400 revs a minute. A back-of-an-envelope calculation suggests that the barnacles, Balanus crenatus, would experience a flow in excess of 40 knots.

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FOUL ANTIFOULING. Hull paint to counter fouling no longer contains the toxic nasties of yesteryear, the mercury, arsenic and so on that worked all too well in killing off animals and plants both on ships' bottoms and elsewhere. Nowadays, pollution-conscious antifouling paint companies base their paints on organic tin and copper. But a little sea-bird tells us that if you want some of the real stuff, complete with mercury, arsenic, etc., etc. it's still made in France.

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ANTIFOULING AGAIN. Oyster cultivation on the South Coast has done quite well recently, particularly in such places as Southampton Water. But apparently diseased, misshapen oysters have been appearing recently, to cut into the profits and worry growers. The sharp-eyed Burnham shellfish lab spotted that the nearer the oysters were to the local yacht marina the worse the problem became. You've guessed. It's the tin in the antifouling paint on the yachts, leeching out.

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Around the Marine Laboratories.

Number 10

The Port Erin Marine Biological Laboratory, Isle of Man.

The genesis of the Port Erin Marine Bioilogical Station dates from 1887, when Liverpool Marine Biological Committee set up a small laboratory in a disused signalling station on Puffin Island off the coast of Anglesey. They transferred their activities to Port Erin in 1892, and then to a larger building on the present site in 1902: the laboratory became part of Liverpool University in 1919.

Since then a succession of additions have been made to the buildings. The more recent include a new research wing in 1967, a lecture theatre in 1977, and in 1980 a major extension providing an extra teaching laboratory, and new library, workshop and diving unit. The complex now provides a substantial 2000m of working space, with the general provisions expected of a biological laboratory. These include an analytical laboratory, eight constant temperature rooms, and facilities for histology, photography and mainframe and microcomputing. There are also the special facilities required by a marine laboratory. An open sea water system provides plentiful unpolluted sea water at ambient temperature: this is piped to almost all laboratories, the CT rooms, wet bench and experimental aquarium areas, and large outdoor tanks. This provides excellent facilities for working with living organisms, including experimental aquaculture on a sustantial scale. A diving unit with qualified technicians can put eight divers into the water at a time. A series of boats, the two largest of 20m and 8m, provides the capability to operate throughout the Irish Sea.

There is easy access to a diversity of marine environments; rocky shores of varies geology and exposure, sandy

beaches, muddy shores and the benthic environment offer all grades of water movement and substrate type. The opportunities for diving are excellent.

The physical evolution of the Port Erin laboratory has been paralleled by a functional one. Until 1971 it was essentially a research institution, an had that rather anomalous position in the administrative heirarchy which has often been the lot of University marine laboratories. Then in 1971 the Department of Marine Biology was created, the Chair of Marine Biology established, and Port Erin began the first Honours Marine Biology course in Britain. Currently the department, with an academic staff of eight, carries out a balanced programme of teaching and research. Several introductory courses are taught, and the Honours Class numbers about thirty. There are some twenty postgraduates working for higher degrees. The research interests of the department are diverse, but include hydrography, the biology of both intertidal and subtidal algae, rocky shore ecology, the biology of Crustacea (both larval and adult) and Mollusca, biochemical genetics, fisheries and aquaculture. Practical applications include advising on commercial fishery management, aquaculature and pollution studies.

Short-term visitiors are always welcome, though space is often at a premium. The summmer vacation is least crowded, and simple but cheap hostel accommodation may be availble then.

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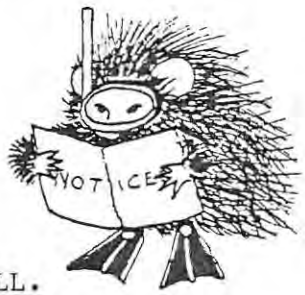

NOTICES

NOTICE 1. "PORCUPINE" FIELD MEETING IN CORNWALL.

A meeting has been organised to enable members to view and study certain aspects of the recently declared Voluntary Marine Conservation Area near Falmouth in Cornwall known as "The Roseland Reserve".

The meeting will begin on Friday 21 September and cover the week-end period of 22-23. It will be possible, however, for anyone who wishes, to stay on for the whole or part of the following week and an outline of activities will be sent to anyone who is interested.

A more detailed notice of this meeting appeared in the last PN. For further information please send a stamped addressed envelope to Member Roger Burrows, Department of Extra-Mural Studies, University of Exeter, 5 Walsingham Place, Truro, TR1 2RP.

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NOTICE 2. POLYCHAETE WORKSHOP.

A workshop on the identification of errant polychaetes, organised by the Estuarine and Brackish-Water Sciences Association and Heriot-Watt University, Edinburgh.

This workshop will take place at the Heriot-Watt University from Monday 25 March to Friday 29 March 1985. It will be led by Sue Chambers (Royal Scottish Museum), Peter Garwood (Dove Marine Laboratory) and Brendon O'Connor (Galway). The workshop will be of interest to those doing research on polychaetes, marine communities, and those carrying out marine and estuarine benthic surveys. It is hoped that participants (who should have some experience of identifying marine invertebrates) will bring their own problem specimens.

Further details can be obtained from Member Mike Elliott, FRPB Estuary Laboratory, Port Edgar Marina, South Queensferry, EH30 9SQ.

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NOTICE 3. SIGHTINGS OF LUTH: ADDENDUM & CORRIGENDUM.

Mrs. I.M. Simpson writes that the second paragraph of her account of the sighting of a luth, or leatherback turtle, Dermochelys coriacea in PN 2(10) should state that the animal was taken off the coast of Bernera, west side of Lewis. On reaching Stornoway it was landed and bought by a local hotel proprietor who is having it mounted for display purposes.

On 30 March 1984 a report was received at the Royal Scottish Museum that a luth had been stranded on a beach at Granton, Edinburgh. The specimen had obviously been there for some time as it was in a very decayed state and the head had been removed. Only the carapace measurement of 1.08m could be taken.

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NOTICE 4 NCC SURVEY OF COASTAL SALINE LAGOONS.

Coastal saline lagoons appear to be the marine habitat which suffers most by direct habitat loss and general degradation. Although a number of natural lagoos originating behind shingle or sand structures have now been 'reclaimed', many new lagoons have ben created through the flooding of coastal quarries and old salt works.

In order to plan an appropriate conservation strategy NCC are organising a survey of the resource. If you would like to contribute to this survey please write for details and a trial recording sheet to Member Roger Mitchell, Nature Conservancy Council, Chief Scientist's Team, PO Box 6, Huntingdon PE18 6BU.

PUBLICATIONS OF THE MARINE BIOLOGICAL ASSOCIATION OF THE U.K.

JOURNAL OF THE MARINE BIOLOGICAL ASSOCIATION OF THE UNITED KINGDOM
One volume per year, published in four parts by Cambridge University Press. Annual subscription (1984): £94 (£15 to members). The Annual Report appears in the last issue for each year.

OCCASIONAL PUBLICATIONS Research reports with limited distribution. No. 1 was published in 1980; no. 2 in 1983.

PLYMOUTH MARINE FAUNA 3rd ed. xliii,457p. 1957. £5 + postage.

THE PLYMOUTH AQUARIUM ILLUSTRATED GUIDE £0.50.

LIBRARY AND INFORMATION SERVICES PUBLICATIONS

BARTLETT, C.A. & MOULDER, D.S. A bibliography on marine and estuarine pesticide pollution. v.96p. 1976. £5.

MOULDER, D.S. & VARLEY, A. A bibliography on marine and estuarine oil pollution. vii, 129 pp. 1971. £3 or £1.50 microfiche.

and Supplement 1. v.152 p. 1975. £1.50 (microfiche only).
Supplement 2. v.156 p. 1978. £6.
Supplement 3. v.119 p. 1979. £6.

VARLEY, A. A Guide to the library. Revised edition. 1982. No charge.

ESTUARIES OF THE BRITISH ISLES: A bibliography of recent scientific papers.

No. 1. iv,32p. 1977. £1 (microfiche only).
No. 2. iv.38p. 1978. £2.50.

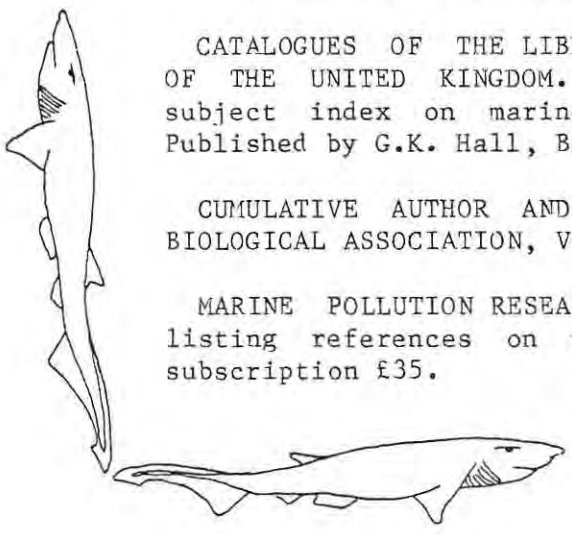
ESTUARIES AND COASTAL WATERS OF THE BRITISH ISLES: An annual bibliography of recent scientific papers.

No. 3. vi,129p. 1979. £5.50.
No. 4. vi,128p. 1980. £6.
No. 5. vi,139p. 1981. £6.50
No. 6. vi,131p. 1982. £7.
No. 7. vi, 85p. 1983. £7.
No. 8. 1984. £8.50.

CATALOGUES OF THE LIBRARY OF THE MARINE BIOLOGIACAL ASSOCIATION OF THE UNITED KINGDOM. Main catalogue, subject catalogue and subject index on marine and estuarine pollution. 16 vols. Published by G.K. Hall, Boston, Mass. 1977.

CUMULATIVE AUTHOR AND SUBJECT INDEXES TO JOURNAL OF THE MARINE BIOLOGICAL ASSOCIATION, Vols. 30-50, 1951-1970. 1978. £6.

MARINE POLLUTION RESEARCH TITLES: a monthly information bulletin listing references on marine and estuarine pollution. Annual subscription £35.



Obituary

HONORARY MEMBER SIR FREDERICK RUSSELL. We report with deep regret the death of Sir Freddy Russell, formerly the director of the Plymouth lab and one of the great marine biologists, on 5 June 1984, at the age of 86. Sir Freddy was elected an honorary member of Porcupine in February 1983 and although unable to attend meetings took a keen interest in the activities of the Society. Two days after Sir Freddy's death Member Paul Cornelius left this note in the editorial office:

"I saw Sir Freddy on 25 May, still talking happily about hydroids. He had had cancer of various parts, finally in the throat; but the end seems to have been swift since he was very alert two weeks ago. I don't thnk he had the slow, painful end often associated with that condition. We had a good chuckle about a number of things. I shall miss him."

So will all who knew him. While his best-known works are his volumes on the British medusae and on fish eggs and larvae his greatest contribution to our subject probably lay in his plankton work of the twenties and thirties. We shall not see his like again.

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Letters to the Editor

From Member Gill Bishop, Sharland Cottage, Morchard Bishop, Crediton, Devon.

Dear Editor,

Much as I admire Sue Evans's snorkelling porcupines in their various skilful exploits such as whale tail tattooing and computing, I was somewhat dismayed to see repeated in the last PN a spearfishing porcupine above news of the newly-formed Marine Conservation Society. Maybe a "KILL ONLY TIME" placard on the next Neptune's fork would be more appropriate.

(Both Thalassiohystrix scuba and the editor will drink to that! Please see the type specimen of T. scuba in more fitting posture on p 6. Ed.)

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From Member John Wilson, Institute of Oceanographic Sciences, Wormley, Godalming.

Dear Editor,

Just a note to say how good PN volume 2 number 10 is. The Newsletter is going from strength to strength. It is good to see the abstracts of the talks now coming out as 'short notes' rather than just a bald statement of what was talked about.

(You are very kind, John. It makes it all worth while. Remember, folks, contributions and suggestions are also valued. Ed.)

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GIANT SQUID STRANDED AT ABERDEEN

Peter Boyle
Zoology Department, The University, Aberdeen.

On Sunday, 8 January 1984 a large squid was seen in the surf off the rocks at Cove Bay, four miles south of Aberdeen. It was apparently dead when first seen and on the morning of Monday 9 it was found lodged among boulders on the shore at mid tide level.

Members of the Zoology Department of the University arrived at about ten am. The squid was complete except for the two tentacles. About 50 cm of one of these was visible and a detached portion of about 2 m was found elsewhere on the beach. Much of the skin was lost, distal portions of several arms were missing, and the eyes were collapsed, but otherwise the body seemed in good condition and quite fresh. In the weather conditions at the time nothing useful could be accomplished on the beach and the animal was taken back to the laboratory for dissection. This was accomplished with the help of local fishermen and a 'salmon barrow' (a platform with six handles for carrying nets).

The squid was probably Architeuthis dux (identified from A. C. Stephen, 1962, Proc. R. Soc. Edin. B, 68. It was a female with a large gonad of very small eggs. A number of tissue samples were removed and a range of measurements were taken, from which a selection follows:-

Mantle length (ventral)	1.70 m
Head (post margin) to arm tip (1st left)	2.47 m
Fin length (at attachment to mantle)	0.70 m
Gladius length (complete)	1.57 m
Inter-ocular distance	0.32 m
Length overall (estimate, excluding tentacles)	4.20 m
Girth of arms at base	0.25 m
Girth of tentacles at base	0.15 m
Girth of mantle (maximum)	1.40 m
Weight of arms (severed at bases, including estimates for missing parts)	34.5 kg
Weight of mantle muscle	59.7 kg
Weight of gonad	7.7 kg
Total weight (estimate)	168.4 kg

At the temperature of the aquarium seawater (5-6 above ambient) arm tissue was neutrally buoyant, tentacle tissue sank and mantle tissue floated.

We are grateful to those observant people at Cove who first noticed the animal, reported it and then assisted in taking it off the beach.

RECORDS FROM THE HAVEN, NEWTON-BY-THE-SEA, NORTHUMBERLAND.

Judy L. Foster-Smith
The Old School, Newton, Alnwick, Northumberland.

Newton Haven (55° 32'N 1° 37'W) is part of a long stretch of coastline which has been designated an area of 'outstanding natural beauty' (Fig. 1). Since 1963 the Haven has been administered by the National Trust, and this includes the area down to the low water mark which is leased by the Trust from the Crown Commisioners.

Last year I was fortunate enough to obtain a small grant from the British Ecological Society to make a preliminary marine survey of the Haven for the National Trust officers, with a possible ultimate aim of their preparing management plans for the site.

The study, which took place between May and October 1983, included two main objectives:-

(1) to describe and map the physical characteristics of the Haven, and

(2) to compile a list of species recorded for the site.

Most of the recording was littoral, although parts of the site could be examined only by snorkelling or diving.

The species list, perhaps of most interest to "Porcupines", consisted of 69 plants and 202 animals. Many of these were identified in the field, but when this was not possible samples were taken back to the house for closer examination. Algae were pressed in the traditional fashion (e.g. Major, 1977), whilst animals wwere treated using fixatives and preservatives appropriate for the species as recommended in Lincoln & Sheals (1979). These specimens were eventually sent off to specialists for identification, or for verification of my identifications. A species list follows.

Note: within each taxon, species are listed in order of frequency found.

LICHENS (7)

Caloplaca marina
Xanthoria parietina
Verrucaria maura
Verrucaria mucosa
Lecanora atra
Lichina pygmaea
Ramalina siliquosa

DINOFLAGELLATES (I)

Gonyaulax tamarensis

ALGAE : CHLOROPHYCEAE (IO)

Enteromorpha intestinalis
Cladophora rupestris
Ulva lactuca
Chaetomorpha capillaris
Spongomorpha arcta
Prasiola stipitata
Bryopsis plumosa
Cladophora sp.
Chaetomorpha melagonium
Spongomorpha aeruginosa

ALGAE : PHAEOPHYCEAE (18)

Fucus serratus
Laminaria digitata
Himanthalia elongata
Fucus vesiculosus
Laminaria saccharina
Halidrys siliquosa
Pelvetia canaliculata
Alaria esculenta
Laminaria hyperborea
Ascopyllum nodosum
Cladostephus spongiosus
Laethesia difformis
Spongonema tomentosum
Chorda filum
Fucus spiralis
Cutleria multifida
Desmarestia aculeata
Ectocarpoid alga

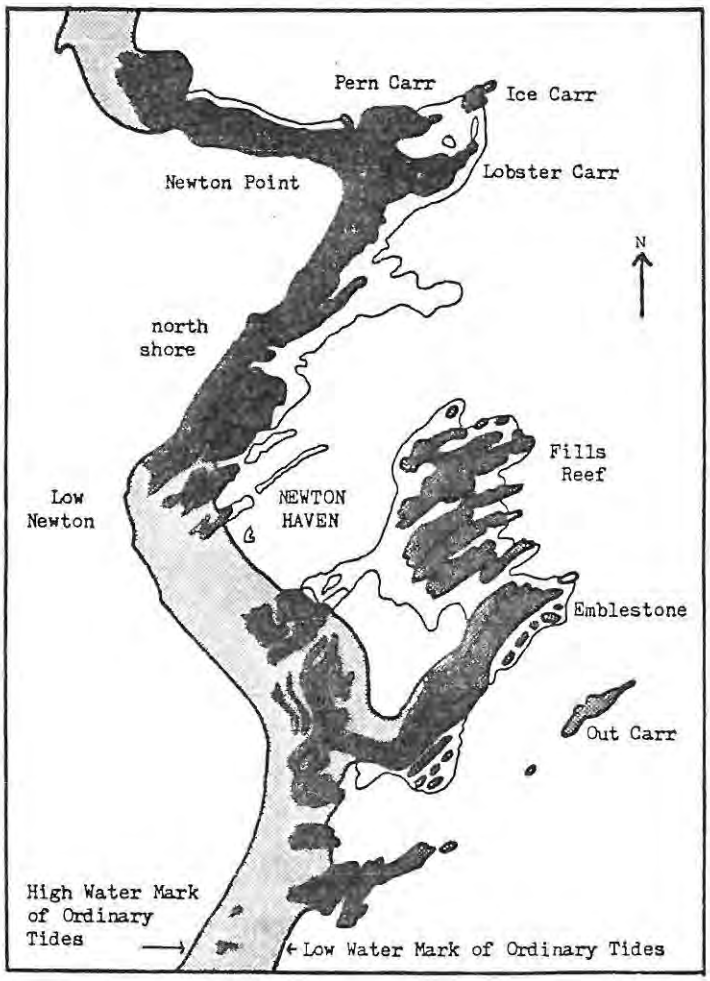

Figure I. Newton Haven. (Study Site)

= Sandy Shore
= Rocky Shore
= Kelp Zone

ALGAE : RHODOPHYCEAE (33)

Lithothamnion/ Lithophyllum spp.
Chondrus crispus
Corallina officinalis
Dumontia contorta
Laurencia pinnatifida
Porphyra umbilicalis
Gigartina stellata
Lomentaria articulata
Rhodochorton sp.
Palmaria palmata
Ceramium rubrum
Polysiphonia lanosa
Polysiphonia nigrescens
Ahnfeltia plicata
Ceramium sp.
Cystoclonium purpureum
Delesseria sanguinea
Dilsea carnosa
Membranoptera alata
Plocamium cartilagineum
Polysiphonia urceolata
Rhodomela contervoides
Brongniartella byssoides
Laurencia hybrida
Lithophyllum incrustans
Lomentaria clavellosa
Odonthalia dentata
Plumaria elegans
Polyides rotundus
Polysiphonia brodiaei
Polysiphonia ? macrocarpa
Polysiphonia ? nigra
Ptilota plumosa

PORIFERA (13)

Halichondria panicea
Scypha compressa
Leucosolenia botryoides
Scypha ciliata
Amphilectus fucorum
Clathrina coriacea
Halisarca dujardini
Myxilla incrustans
Dysidea fragilis
Leuconia nivia
Cliona celata
Haliclona oculata
Myxilla rosacea

CNIDARIA : HYDROZOA (10)

Dynamena pumila
Pumularia setacea
Tubularia indivisa
Abietinaria filicula
Clytia johnstoni
Coryne pusilla
Eudendrium sp.
Laomedia flexuosa
Obelia geniculata
Sertularia cupressina

CNIDARIA : SCYPHOAZOA (3)

Aurelia aurita
Cyanea capillata
Cyanea lamarkii

CNIDARIA : ANTHOZOA (6)

Taelia felina
Actinia equina
Metridium senile
Alcyonium digitatum

Tealia eques
Caryophyllia smithi

CTENOPHORA (2)

Bolinopsis infundibulum
Beroe cucumis

PLATYHELMINTHES (I)

Oligocladus sanguinolentus

NEMERTINA (2)

Lineus longissimus
Tetrastemma melanocephalum

[illegible] (30)

Streptosyllis websteri
Spirorbis spirorbis
Pomatoceros triqueter
Arenicola marina
Lanice conchilega
Exogone hebes
Perinereis cultrifera
Harmothoe imbricata
Nereis pelagica
Cirratulus cirratus
Exogone naidina
Fabricia sabella
Nephtys hombergi
Nephtys cirrosa
Scoloplos armiger
Eulalia viridis
Eusyllis blomstrandi
Phyllodoce maculata
Harmothoe impar
Harmothoe lunulata
Lepidonotus squamata
Malacoceros fuliginosa
Spio martinensis
Scolelepis foliosa
Aricidea minuta
Paraonis fulgens
? Filograna implexa
Cirriformia tentaculata
Psammodrilus balanoglossoides
Capitella capitata

MOLLUSCA : POLYPLACOPHORA--(3)

Lepidochiton cinereus
Acanthochitona crinitus
Tonicella rubra

MOLUSCA : GASTROPODA (34)

Nucella lapillus
Patella vulgata
Gibbula cineraria
Littorina littorea
Patina pellucida
Littorina obtusata
Littorina rudis
Lacuna vincta
Archidoris pseudoargus
Littorina neglecta
Patella aspera
Acmea virginia
Trivia monacha
Littorina maria
Buccinum undatum

Goniodoris nodos
Lacuna parva
Nassarius incrassatus
Onchidoris fusca
Polycera quadralineata
Rissoa sp.
Trivia arctica
Ancula gibbosa
? Jorunna tomentosa
Lamellaria latens
Calliostoma ziziphinum
Acanthodoris pilosa
Acmea tessulata
Antiopella cristata
Doto coronata
Facelina coronata
Limapontia capitata
Onchidoris depressa
Rostanga rubrum

MOLLUSCA : BIVALVIA (15)

Mytilus edulis
Hiatella arctica
Ensis siliqua
Modiolus modiolus
Pododesmus squamula
Tellina fabula
Dosinia lupinus
Montacuta ferruginosa
Tellina tenius
Venus striatula
Modiolus barbatus
Kellia suborbicularis
Pododesmus patelliformis
Spisula subtruncatula
Cochlodesma praetenue

ECTOPROCTA (BRYOZOA) (11)

Membranipora membranacea
Cellipora pumicosa
Alcyonidium hirsutum
Electra pilosa
Schizoporella unicornis
Umbonella littoralis
Bugula turbinata
Flustrellidra hispida
Schizomavella auriculata
Alcyonidium gelatinosum
Scrupocellaria scruposa

ARTHROPODA : CRUSTACEA (27)

Balanus balanoides
Carcinus maenas
Cancer pagurus
Eupagurus bernhardus
Gammarus locusta
Pisidia longicornis
Porcellana platycheles
Homaris vulgaris
Macropipus depurator
Verruca stroemia
Hyas araneus
Galathea strigosa
Balanus balanus
Balanus crenatus
Idotea baltica
Urothoe poseidonis
Caprella linearis
Galathea squamifera
Pinnotheres pisum
Amphitoe rubricata

Eualus pusiolus
Hippolyte varians
Idotea granulosa
Idotea neglecta
Ligia oceanica
Macropipus puber
Munna Kroeyeri
Praunus flexuosus

ARTHROPODA : INSECTA (2)

Lipura maritima
Petrobius maritimus

ARTHROPODA : PYCNOGONIDA (I)

Phoxichilidium femeratum

ECHINODERMATA (8)

Henricia sanguinolenta
Asterias rubens
Ophiothrix fragilis
Amphipholis squamata
Echinus esculentus
Echinocardium cordatum
Psammechinus miliaris
Echinocardium pennatifidum

CHORDATA: UROCHORDATA (17)

Sidnyum turbinatum
Botryllus schlosseri
Dendrodoa grossularia
Didemnid sp.I
Botrylloides leachi
Clavelina lepadiformis
Aplidium glabrum
Polycarpa sp. (rustica/pomaria)
Polyclinum aurantium
Aplidium nordmanni
Ascidia mentula
Ciona intestinalis
Didemnid sp.2
Didemnum maculosum
Morchellium argus
Sidnyum ?elegans
Synoicum pulmonaria

CHORDATA : PISCES (I4)

Pollachius virens
Juv. Cod family
Cyclopterus lumpus
Pholis gunnellus
Juv. Flatfish
Blennius pholis
Ciliata mustela
Gobiusculus flavescens
Myxocephalus scorpius
Pomatoschistus minutus
Sand eel sp.
Thorogobius ephippiatus
Zoarces viviparous
Ammodytes tobianus
Pleuronectes platessa
Spinachia spinachia
Wrasse sp. (?Corkwing)

CHORDATA : MAMMALIA (2)

Halichoerus grypus

Lagenorhynchus albirostris (stranded)

References
Major, A. (1977). The Book of Seaweed. Gordon & Cremonsi, London.
Lincoln, R. J. & Sheals, J.G. (1979). Invertebrate animals - Collection and Preservation. B.M. (Nat. Hist.), Cambridge Univ. Press.

AN OVIGEROUS FEMALE OF BATHYNECTES LONGIPES ON THE WEST COAST OF IRELAND.

David W. Connor
The Ulster Museum, Botanic Gardens, Belfast.

Ever since Bernard Picton discovered Bathynectes longipes, a rare swimming crab, at St. John's Point, Co. Donegal on the west coast of Ireland in 1981 (Holmes et al, 1983) there has been a search for a female of the species bearing eggs. Paul Clark from the British Museum (Natural History) is presently trying to link larvae found in the pankton with the adult crab by rearing eggs from the rarer crab species through all their larval stages.

An ovigerous female has at last been found at St. John's Point (17 May 1984) and was immediately flown to the BM(NH).

Prior to 1912 there were 23 records of Bathynectes longipes, all from the English Channel region. It had not been collected since then until it was found in a lobster pot in 1973 and in a fish gut in 1977, both on the west coast of Ireland (Holmes et al, 1983). A cruise off SW Ireland in 1979 collected the crab in sea areas 42 and 43 in 1930m and 100m respectively (Ingle & Rice, 1984). To date St. John's Point is the only known location where the crab can be found by divers, all sightings until the present one being at night. This ovigerous female was, however, discovered under a boulder in daytime, and increases the possibility of finding the crab elsewhere in suitable habitats if divers keep their eyes open.

References

Holmes, J.M.C., D. McGrath, B.E. Picton & N. Mulligan. 1983. Records of some interesting crabs from the coast of Ireland. Ir. Nat. J., 21, 79-81.

Ingle, R.W. & A.L. Rice. 1984. The juvenile stages of eight swimming crab species (Crustacea, Brachyura, Portunidae); a comparative study. Bull. Br. Mus. nat. Hist. (Zool.), 46, 4.

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ON THE VERNACULAR VARIETIES OF THALASSIOHYSTRIX, WITH NOTES ON FABLED RELATIVES.

C. T. Canon
Peripheral Electricity Generating Board, PO Box 999.

Since records of Thalassiohystrix are particularly rare in litt., probably due to the world population's being only 150 or so (PN,2, p.215), it has proven particularly difficult to clarify the

vernacular taxonomy of this animal. In response to the request for such information (PN,2, p.135), we discovered the Geordie appellation of 'Squilla' (PN2, p.176), but it was unclear whether this was an all-embracing term, or referred only to the Bernician variety. We have to date collated seven valid patois synonyms, deriving from what we assume to be local varieties, but which are now deemed to be all the same species, variety, race, or even individual if it were particularly porcupitinerant. Particularly useful was a battered copy of Sars (1917) "Crustacea of Norway", a much neglected document which details the work of this great porcupioneer, who was the first to recognise that the "midwife hystrix", or storkupine, was a mere flight of fancy. It is pertinent at this point to establish once and for all that the new-world form, described from a single specimen found porcupining away in a Caribbean zoo, and showing a veritable cocktail of morphological characteristics - the so-called Porcupinacolada - was in fact a sheep-goat-hystrix chimera.

1. Hystrix couchant (see Fig. on p.202 of PN2).....Porcsupine
   Passant, rampant, etc., but not couchant when sober.....2

2. Obligate carnivore, a wolf in hystrix clothing..Porclupine
   Not an obligate carnivore, more a gourmand.....3

3. Restricted to calcareous downland and Dover, white
   ....Chalkupine
   Less conservative in habitat, less white.....4

4. Inbuilt flotation, found bobbing off the S. coast of
   Ireland.....Corkupine
   Capable of submersion, often in the drink.....5

5. Ears long,often heard to rabbit on at meetings..Porclapine
   Less than four, or, if larger, then no white tail.....6

6. Arboreal, endemic to Caledonian forests.....Porcscotspine
   Endemic, branching out more than the above.....Porcyewpine

[The senior synonym, now emended, being preoccupied (with something) and due to a spelling error when carving the name on a conjectured submarine bank.]

Reference

Sars, Alberto. 1917. Crustacea of Norway, including particularly those forms with vertebrae and spines strangely neglected in previous volumes with a similar title. Unattributed Press, 2.5pp. (=6 old pence).