

THE MARINE FAUNA OF LUNDY

PYCNOGONIDA (Sea Spiders)

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INTRODUCTION

The pycnogonids usually form an inconspicuous part of the marine fauna being of small size and in many localities few in number. However, in some habitats they occur in numbers which must have a significant effect on the abundance of their chief food source; bryozoans and hydroids. Their distribution in both the littoral and sublittoral zones is incompletely known, records being limited to a few locations which are principally near to field stations. At Lundy, Harvey (1950) records three species from the shore although Boyden (1971) does not record any sea spiders. Collections for the present list were made during the summer months in 1970, 1971, 1972, 1974 and 1975, occasionally by shore collecting but more frequently by diving. In both the littoral and sublittoral zone the undersurface of rocks were examined and scrapings of hydroids and bryozoa taken from all surfaces.

GENERAL OBSERVATIONS

During recent investigations, only one specimen was obtained in the littoral zone which may reflect the limited locomotory powers of pycnogonids and in consequence their avoidance of habitats with strong wave action. Harvey (1950) does not record the habitats of the three species he listed but his unpublished records indicate that many specimens were collected from kelp holdfasts on the lower shore. The British pycnogonid fauna has, to date, 21 regularly recorded species with several others which have only been found once. Nine species have been recorded from around Lundy and several occur in fair numbers at some localities. There is a general trend for more individuals to be present on the eastern more sheltered side than on the western side where many occur at greater depth.

THE LIST

The introduction to this series (Hiscock 1974) includes a list of abbreviations and terms and a map showing the location of sites.

The present list includes specimens collected by K. Hiscock (KH), P. J. Hayward (PJH) and A. Osborn (AO) as well as the records of Harvey (1950). The classification and nomenclature follows that used by King (1974).

Phylum **ARTHROPODA**
Sub-Phylum **ARACHNIDA**
Class **PYCNOGONIDA** (sea spiders)
Family **NYMPHONIDAE**
Nymphon gracile (Leach, 1814)

Littoral (Harvey, 1950).

Nymphon rubrum Hodge, 1862

SS Carmine Filomena, 8 m, 2.9.71, one specimen (KH/PK); Rattles Anchorage, 20 m, 28.8.70, one specimen (KH/PK); Gannets Rock, 30 m, 8.7.74, one specimen (PJH/PK). This species has been recorded at several localities in the Bristol Channel from the sublittoral zone.

Family **AMMOTHEIDAE**
Achelia echinata Hodge, 1864

Ammothea echinata: Harvey, 1950.

Recorded from many sites off the east coast and probably frequent amongst bryozoans and hydroids in depths greater than 8 m. Littoral (Harvey, 1950);

East Lundy, 30 m, July 1974, single specimen on *Crisia* (PJH/PK); Rat Island, 10 m, 17.7.75, one specimen in 0.25 m² sample (KH/PK); SS Carmine Filomena, 8 m, 2.8.71 (KH/PK); Seal Rock, 15 m, 15.8.72, one specimen amongst *Cellaria fistulosa* (PH/PK); Gannets Rock, 10 m, 15.7.75, one specimen in 0.25 m² sample (KH/PK); Knoll Pins, 15 m, 3.7.71, three specimens amongst hydroids and bryozoans (AO/PK); Knoll Pins S, 21.5 m, 10.7.75, one specimen in 0.25 m² sample from horizontal granite (KH/PK); Quarry Bay, 8 m, 11.7.75 (KH/PK); Quarter Wall Bay, 10 m, 15.7.75, one specimen from 0.25 m² (KH/PK). Seventeen specimens collected between depths of 10–30 m at Gannets Rock on 6.9.70 and 7.8.70 included females with eggs in their femurs, males carrying balls of eggs on their ovigers and two juveniles. This species is of wide geographical occurrence and may be part of a large complex in the northern hemisphere spreading from the Arctic almost to the equator.

***Achelia hispida* Hodge, 1864**

East Lundy, sublittoral, 7.8.70, one male specimen (AO/PK). Considered to be a southern species.

Family PHOXICHILIDIIDAE

***Phoxichilidium femoratum* (Rathke, 1799)**

East Lundy, 7.8.70, one female (AO/PK). A shallow water species of widespread occurrence in the North Atlantic from Norway to France.

***Anoplodactylus petiolatus* (Krøyer, 1844)**

Littoral (Harvey, 1950); east coast, 20 m, 6.8.70 (PK); west Lundy, 7.8.70, surface plankton, one adult (PK); east and west coasts, July 1971, a number of immature specimens of the six legged larval stage attached to medusae in surface plankton. Thought to be a shallow water species found from Norway to the Mediterranean. The larvae are believed to be parasitic in polyps of *Hydractinia echinata*, *Podocoryne carnea* and *Campanularia flexuosa* and later stages attached to medusae.

Family ENDEIDAE

***Endeis spinosa* (Montagu, 1808)**

Rat Island, 10 m, 12.7.75, one male and two females from 0.25 m² sample (KH/PK); Needle Rock, 10 to 15 m, 3.8.74, one specimen (KH/PK); Jennys Cove, 20 to 30 m, 7.8.70, one female and one Juvenile (PK); Seals Rock, 32 m, 4.8.71 (KH/PK); east Lundy, 5 to 10 m, 6.8.70, one male (PK); east Lundy, 5 to 10 m, 6.8.70, two females (PK); Gannets Rock, 12 to 14 m, 8.8.74, single specimen amongst hydroids (KH/PK); Knoll Pins, 10 to 15 m, 3.7.71, two males amongst hydroids.

***Endeis laevis* (Grube, 1871)**

Jenny's Cove, 20 to 30 m, 7.8.70, eight juvenile males and four females amongst hydroids (PK); Jenny's Cove, 20 to 25 m, 7.8.70, 11 females, six males and two juvenile males (PK); Seals Rock, 8 m, 17.7.75, one specimen (KH/PK); Gannets Rock, 20 m, 15.7.75, one specimen (KH/PK); Gannets Rock Pinnacle, 10.5 m, 17.6.75, one female in 0.25 m² sample (KH/PK); Tibbett's Point, 15 m, 15.7.75, one specimen (KH/PK); east coast, 5 to 20 m, 6.8.70, two females amongst hydroids (PK); east coast, 10 to 15 m, 6.8.70, one female, one male and one juvenile (PK); east coast, 7.8.70, four females and two males carrying eggs on their ovigers and one juvenile (PK). Considered to be a shallower water form than *E. spinosa*.

Family PYCNOGONIDAE

***Pycnogonum littorale* (Ström, 1762)**

Seals Rock, LWS, 13.7.75, one immature male (KH/PK).

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OPISTHOBRANCHIA

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INTRODUCTION

The opisthobranchs of sea areas to the south-west of England have received relatively close scrutiny in recent years. Advances in understanding the systematics and ecology of these animals have been possible as a result of numerous specimens collected by SCUBA divers. This has led to two publications which will be of assistance in the study of specimens from Lundy. Hunnam & Brown (1975) list and describe species from the Dale peninsula which is thought to be hydrographically 'downstream' from Lundy, while Thompson & Brown (1976) describe all valid species known from the British Isles with information on ecology and distribution.

Future collections will undoubtedly supplement the Lundy List but it was felt necessary to publish at the present time as several new records for the Bristol Channel and one new record for Great Britain are included. A total of 47 species are listed. Ten species from nearby localities, as yet unknown from Lundy, are mentioned in an addendum.

SAMPLING AND COLLECTING METHODS

The abundance of several species, and the necessity to search particular habitats for others, precluded the possibility of an accurate quantitative survey. In order to maximize the precious time underwater spent in searching all available prey species, other recording was unavoidably coarse. Abundance was estimated on a one to three scale and substrate types were split into four categories. Observations on the surface and information from nautical charts enabled the assessment of maximum current speeds and exposure to wave action. Dives were standardized at 15-20 minutes duration on sites spread around the island at various depths ranging from 0 to 30 metres below C.D. As only epifaunal forms are readily available to a diver, it is probable that further infaunal opisthobranchs, especially bullomorphs, will be collected using dredging techniques.

DISTRIBUTION

The close relationship between the opisthobranchs and their food species is well known. Various authors have likened it to a parasitic association. Thompson (1964) showed that certain larvae will only settle and metamorphose on the prey species. Opisthobranch distribution is therefore expected to mirror the dis-