

# Echinodermata, Asteroidea in the Faroe Region

## Echinodermata, Asteroidea í fóroyiskum øki

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### Úrtak

Kanningar av botndjóralívinum byrjaðu 1987 við norðurlendsku BioFar-verkætlanini, og í tí umfarinum vórðu royndir tikanar, har sum dýpið var meira enn 100 m. Henda verkætlan endaði í 1993, og í 1995 varð farið undir nýggja verkætlan, BioFar 2, har kannad vórðu bæði plantu- og djóralív frá fjøruni og niður á 100 m dýpi.

Frammanundan høvdu 31 sløg av Asteroidum verið fráboðað á fóroyiskum fiskileiðum. Í BioFar-verkætlanini varð talið á sløgum økt til 41. Partur av úrslitunum av BioFar 2-verkætlanini eru tikan við í hesi frágreiðing.

Hetta verður sagt frá um hvort slagið sær: núgaldandi latínska navnið við høvdundi og árstali, týdningsarmikil samheiði, tilvísingar til góðar lýsingar af dýrunum, hvar dýri eru at finna í mun til dýpi, botnslag, hitastig (mált ella mett), vatnmassa, og um heildarútbreiðslu í Atlants-havi.

Tvey sløg eru burturav og trý onnur sløg fyri tað mesta skrásett á landgrunninum ella ovast á bankunum (0-299 m); 30 sløg vórðu skrásett á landgrunninum og hellingini niður á 999 m, 14 teirra trúvast best á hellingini (300-999 m); 9 sløg vórðu tikan bæði á grunninum og djúpum vatni (0-2.200 m). 10 sløg eru einamest at finna í "flógvum" atlantssjógví (<7 °C); 2 vórðu bert funnin í koldum botnsjógví í Norskahavi; 15 sløg vórðu funnin í alskyns sjógví, og 15 vóru funnin í 2 ella 3 sløgum av sjógví.

### Abstract

Investigations of the marine benthic fauna of the Faroese fishery territory started in 1987 with a Nordic programme called BioFar with sampling efforts concentrated at depths greater than 100 m. After the BioFar sampling was concluded in 1993, a new programme called BioFar 2 started in 1995 to sample the marine benthic fauna from the intertidal zone to a depth of 100 m.

Before BioFar, 31 species of asteroids had been reported from the Faroese fishery territory. The BioFar sampling increased the number of reported species to 41. Some of the results from BioFar 2 are included in this report.

For each species the following information is given: the valid name with author and publication year, relevant synonyms, reference to good descriptions –, determinations of where the species was found, the type of water mass in which the specimens were caught, depth range, measured temperature range or estimated temperature range of the near-bottom water, general depth range of the species in the Atlantic Ocean, and its general distribution.

Two species are exclusively and three other species are most often recorded from the Faroe Plateau or the tops of the banks (0-299 m); thirty species are reported from the plateau and the slope (0-999 m), fourteen of them preferring the slope depth (300-999 m); nine species are caught both in shallow and deep water (0-2,200 m). Ten species are mostly confined to "warm" Atlantic Water (> 7°C); two species are found only in the cold bottom water of the Norwegian Sea; fifteen species are distributed in all the main categories of water masses; fifteen species are recorded from two or three different water masses.

### Previous Investigations

According to Lieberkind (1929), the echinoderm fauna had not been the subject of thorough examination before the investigations performed by Danish zoologists in the years 1924 to 1927. Those investigations were mostly concentrated on the near-shore and shallow waters. Working through the collected material, Lieberkind (1929) found 45 species of echinoderms, 25 more than previously known. Asteroids accounted for 12 species.

Even though the Danish "Ingolf" Expedition in 1895-96 sampled 22 deep-water stations off the Faroes, and the research vessel "Thor" made fishery investigations around the Faroes in 1903-05, there are no direct reports of asteroid specimens from these investigations. On the other hand, Mortensen (1924) mentions asteroid species (*Hymenaster pellucidus*, *Korethraster hispidus*, *Lophaster furcifer*, *Luidia ciliaris*, *Poraniomorpha hispida*, *Pteraster militaris*, *Solaster glacialis*, *Solaster squamatus*) from the deep areas around the Faroes, but does not give more specific information. Other information comes from material collected close to Shetland during the "Lightning" and "Porcupine" expeditions in 1868 and 1869 (Jeffreys *et al.*, 1868; Sladen, 1883; Bell, 1892).

An account of the history of the zoological investigations in the Faroe region is found in *Zoology of the Faroes*, Volume 1 (1) (Introduction by R. Spärck).

### The BioFar Investigations

The BioFar programme, "Investigations on the Marine Benthic Fauna of the Faroe Is-

lands," intended to study the invertebrate fauna at depths greater than 100 m to supplement and update the results of the Danish investigations in 1924-27, which were published in the Series: "*The Zoology of the Faeroes*" (Spärck *et al.*, 1928-37; 1928-42; 1935-42; Spärck and Tuxen, 1928-1971).

The BioFar programme ran from 1987 to 1990 (some samples were also taken in 1991-93). Roughly 600 localities were sampled at depths of 20 to 2,420 m, with 790 deployments of sampling gear (Nørrevang *et al.*, 1994). A list with information on the BioFar stations (date, position, depth, sampling gear, bottom type, mean bottom temperature and its standard deviation, water mass or mixture of water masses, maximum amplitude of the total tidal current) is given in Nørrevang *et al.* (1994). The oceanographic data were originally calculated by H. Westerberg (see Westerberg, 1990).

A successor to the BioFar programme, called BioFar 2, started in 1995. During this new three-year programme, funded by the Faroese Government and the Carlsberg Foundation in Denmark, marine fauna from the upper splash zone down to a 100 m depth were sampled.

### Bottom Sediments

In a review, Spärck (1929) comments on the benthic communities in depths to about 300 m around the Faroe Islands. Soft bottoms (clay and muddy bottoms) are found mainly in the fjords. Elsewhere these sediment types are rare. Rock bottom is found mainly on the steep parts of the continental

plateau down to about 50 m depth. The most common bottom types are sandy sediments and shell-sand bottoms mixed with *Modiolus modiolus*. *Modiolus* bottom is found predominantly in shallow water between the islands and on the plateau down to about an 80 m depth. Between depths of 100 m and 300 m, sand is the dominant sediment.

Klitgaard (1992) has analysed information collected during the BioFar programme, together with information from local fishermen. East of Nolsøy, in an area with *Modiolus*-shell-sand, a high concentration of living *Modiolus modiolus* is found in depths of 60 to 100 m. Down to about 200 m, large areas with shell-sand are found in the west and south-west parts of the Faroes. Further down, sand sometimes mixed with pebbles and stones is the dominant bottom sediment. Both east and west of the Faroes, a soft bottom area is found at a depth of about 350 m. Part of the soft bottom area found east of the islands is covered with a compact mat of sponge spicules. Such mats are also found in other areas down to a depth of about 900 m.

At the Faroe Bank, and probably also at the Bill Baily and Lousy Banks, the dominant sediment is fine, shell-sand. Coarse shell remains are dominant in steep areas.

During the BioFar programme, the sediment brought on deck probably often gave the impression of being a more coarse bottom sediment than is probably the case. Eleven hundred underwater pictures taken at depths between 60 and 1,050 m on a spring cruise (1990) by Dr. Julian Gutt, and a hundred pictures taken at depths of 241 to

275 m by Dr. Håkan Westerberg at Suðuroy Bank on a cruise (May/June 1989) all showed mostly sandy sediments (Klitgaard, 1992).

### Water Masses

Fosså *et al.* (1992) concluded that in an area of complex hydrography, species may be grouped and classified according to their distribution in the water masses. Knowledge about water masses in the Faroe Islands region may be important for zoogeographical analyses. According to Hansen and Meincke (1979), Becker and Hansen (1988), and Westerberg (1990), these areas are, for the most part, dominated by three main categories of water mass, which differ with respect to formation area and general flow direction: Atlantic Water (AW), bottom water of the Norwegian Sea (NW), and Arctic Intermediate Water (AI).

The warm and salty Atlantic Water (AW) forms an inflow of water into the upper layers of the Norwegian Sea. The salinity is  $> 35.1$  pss. The temperature is above  $7^{\circ}\text{C}$ , except in depressions on the Faroe Plateau where winter-cooled water might be trapped.

The bottom water of the Norwegian Sea (NW) forms the coldest component of the water, overflowing the thresholds around the Faroes into the Atlantic. The temperature is below  $0^{\circ}\text{C}$  and the salinity ca. 34.92 pss.

Between the warm AW and the cold NW, Arctic Intermediate Water (AI), mixed with North Icelandic Winter Water (NI), is present. These water masses (here called only AI) are formed north of the Arctic (or Po-

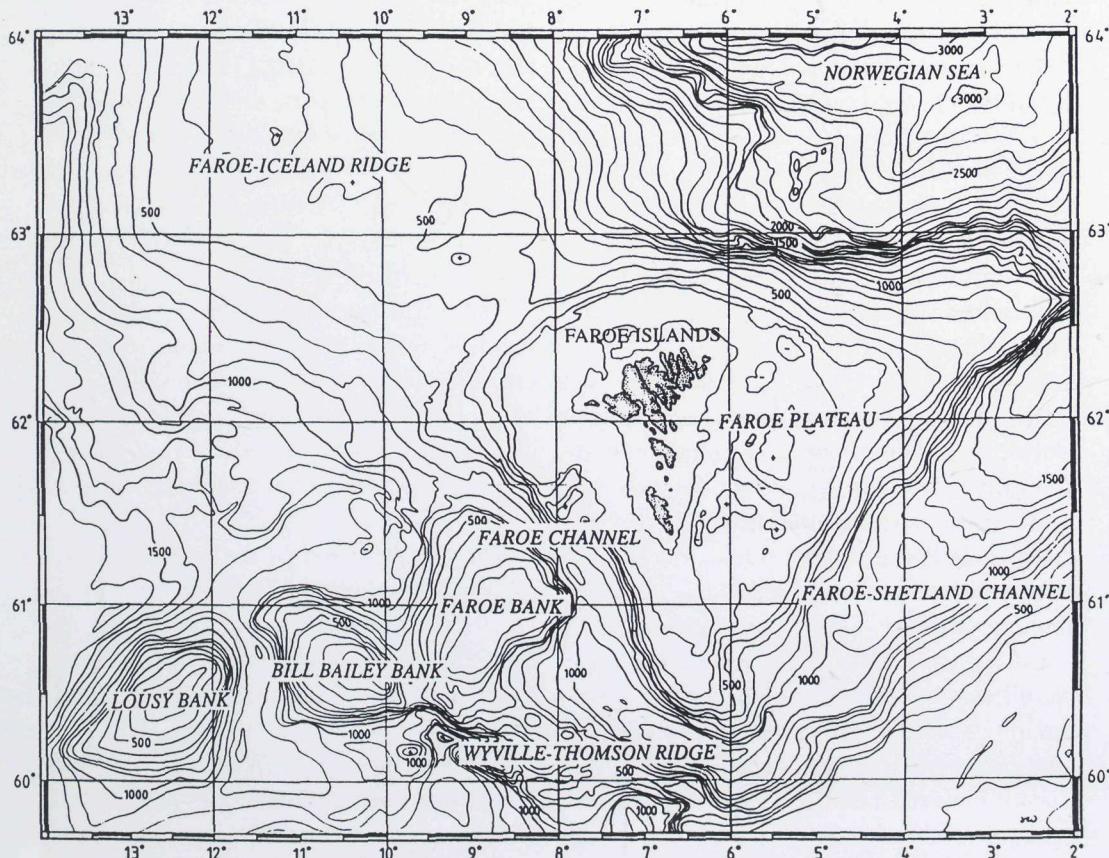
lar) Front in the Iceland and Greenland Seas. From the areas of generation, AI sinks and spreads to the northern slope of the Faroe-Iceland Ridge, which it follows towards the Faroe Plateau and into the Faroe-Shetland Channel (Brattegard and Meland 1997). In the Faroe region this water mass has a temperature between 1.5 and 3.5°C and a salinity < 34.88 pss.

Water with temperatures between 3.5 and 7.0°C is a mixture of AW and AI. Colder water with temperatures between 0

and 1.5°C found north of both the Faroe-Iceland Ridge and the Faroe Plateau and in the Faroe-Shetland Channel is a mixture of AI and NW. Water of the same temperature range south of the Faroe-Iceland Ridge is a mixture of AW, AI and NW.

### Material

The echinoderms in the BioFar material were collected using a variety of benthic sampling gear (Nørrevang *et al.*, 1994): a commercial shrimp trawl, triangular



**Fig. 1.** Map of the Faroe region with names of sub-areas.  
**Mynd 1.** Kort av fóroyska økinum vid növnum á undirøkjum.

dredge, modified Rothlisberg and Pearcy epibenthic sampler (Brattegård and Fosså, 1991), Sneli detritus sledge (Sneli, 1998), scallop dredge, Agassiz dredge, Meiofauna dredge (St. 586), Plymouth anchour dredge (St. 608), and McIntyre grab (Stns 227, 669).

In 1996, Halldis Ringvold, M.Sc. candidate, wrote her M.Sc. thesis (in Norwegian) on the "Identification and Distribution of Seastars in the Faroe Waters" at the University of Science and Technology (NTNU) in Trondheim, Norway (Ringvold, 1996). The present report is based mainly on the chapter in that thesis discussing the recording of the species in the region.

## Results

In the systematic list below, the following information is given for each species: the valid name with author and publication year, relevant synonyms, reference to good descriptions of the species, previous Faroese records, the BioFar (and to some extent also BioFar 2) stations where the species was found, area descriptions (Fig. 1), dominant bottom sediments in the areas where the species was found, dominant water mass at the same stations, depth range, measured temperature range or estimated temperature range of the near-bottom water based on data from a database created by H. Westerberg (in Nørrevang *et al.*, 1994), general depth range of the species in the Atlantic Ocean, and its general distribution.

Relevant synonyms are taken from Clark and Downey (1992). The number in parentheses after a station number refers to specimens kept, when known. The information

on general distribution is taken mainly from Clark and Downey (1992).

### List of species

Class ASTEROIDEA

Order PAXILLOSIDA

Family LUIDIIDAE

Genus *Luidia* Forbes, 1839

***Luidia ciliaris* (Philippi, 1837)** (Map 1)

Synonym: *Asterias ciliaris* Philippi 1837

Reference to best descriptions of the species: Mortensen (1927: 70, Fig. 39a); Clark and Downey (1992: 11-12, 2e)

BioFar station: 325 (1)

Other records: Faroe-Shetland Channel (Sladen 1883); Shetland Islands (Bell 1892)

Bathymetrical range within the area: 98 m

Substrate: shell sand

Temperature: 9.1°C

Water mass: AW

World distribution: From the coast of Møre County in Norway, Skagerrak, Faroe-Shetland Channel south to the Canary Islands, the Azores and the Mediterranean.

World bathymetrical range: 1 - 400 m

Remarks: BioFar station 325 is on the Faroe Bank Plateau.

***Luidia sarsi* Düben and Koren, 1845**

(Map 1)

Synonyms: *Asterias* sp. aff. *A. aranciaca* M. Sars 1835

Reference to best descriptions of the species:

Mortensen (1927: 69, Fig. 39b); Clark and Downey (1992: 18-20, Pl. 2b)

BioFar stations: 3 (2), 19 (1), 27 (1), 345 (1), 543 (1), 598 (1), 764 (1), 776 (1), 780 (2)

Other records: Faroe Bank and Shetland (Lieberkind 1929); between the Faroe Bank and Scotland (Bell 1892)

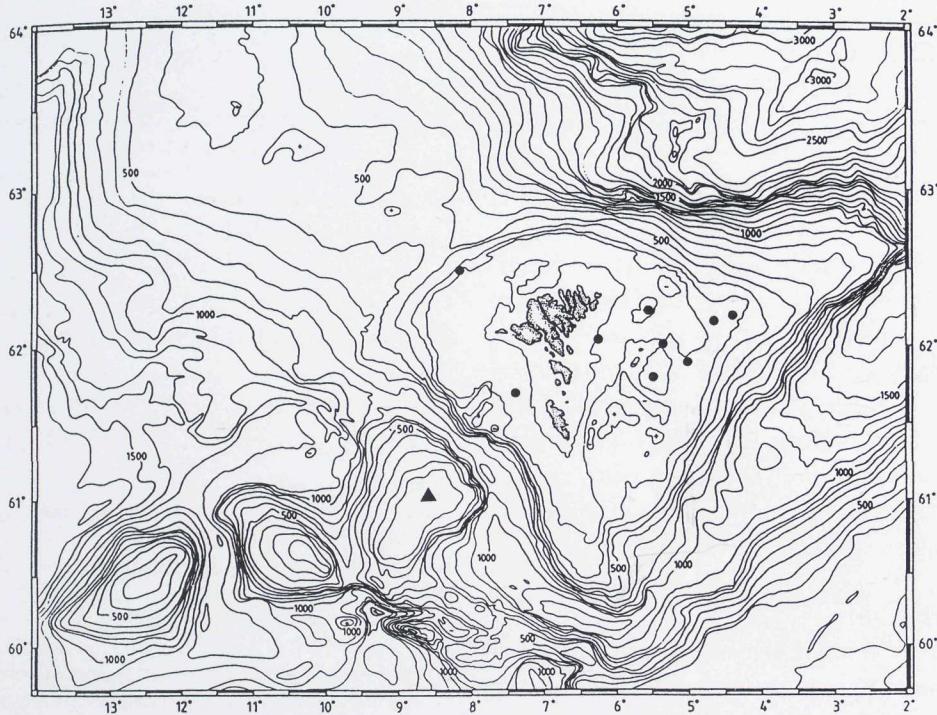
Bathymetrical range within the area: 103 - 358 m

Substrate: shell-sand, gravel, stones

Temperature: 6.2° - 8.2°C (estimated)

Water mass: AW, AW/AI

World distribution: The Trondheimsfjord and the



**Map 1.** Records of *Luidia ciliaris* (Philippi) (▲), and *L. sarsi* Düben and Koren (●) in the Faroe region.

**Kort 1.** Skrásetingar av *Luidia ciliaris* (Philippi) (▲) og *L. sarsi* Düben and Koren (●) í fóroyskum óki.

coast of Møre in Norway, Storegga (Ringvold pers. obs.), and from the Faroe Bank south to Cape Blanc, Mauritania, the Azores and the Mediterranean (Clark and Downey 1992).

World bathymetrical range: 9 – 1,300 m

Remarks: The BioFar stations are all at the Faroe Plateau.

154 (2), 158 (2), 164 (1), 165 (2), 204 (2), 235 (2), 319 (1), 322 (4), 323 (2), 325 (1), 333 (1), 349 (1), 355 (5), 356 (2), 357 (6), 359 (5), 363 (15), 390 (1), 456 (1), 470 (1), 494 (1), 510 (2), 512 (1), 519 (2), 538 (1), 543 (8), 544 (1), 600 (1), 602 (2), 603 (1), 620 (1), 621 (1), 691 (1), 724 (1), 763 (6), 764 (1), 765 (1), 776 (11), 777 (1), 778 (1)

Other records: south of Munken, south-west of

Mykines Island and south of Nolsøy; also found at the Faroe Bank (Lieberkind 1929); between Scotland and the Faroe Bank (Bell 1892)

Bathymetrical range within the area: 32-703 m (mainly: 32 - 350 m)

Substrate: sand, shell-sand, gravel, pebbles

Temperature: 6.6° - 7.9°C (measured); estimated: 3.2° - 9.1°C

Water mass: AW, AW/AI

World distribution: Norwegian coast south to Morocco and Cape Verde Islands, Rockall Bank.

World bathymetrical range: 10 – 1,000 m

## Family ASTROPECTINIDAE

### Genus *Astropecten* Gray, 1840

#### *Astropecten irregularis* (Pennant, 1777)

Synonyms: *Asterias irregularis* Pennant 1777; *Asterias aranciaca* O.F. Müller 1776

Reference to best descriptions of the species:

Mortensen (1927: 57-58, Fig. 32); Clark and Downey (1992: 37-38, Pl. 10A, B)

BioFar stations: 8 (4), 19 (5), 72 (1), 90 (1), 103 (2),

Genus *Bathybiaster* Danielssen and Koren, 1882

***Bathybiaster vexillifer*** (W. Thomson, 1873) (Fig. 2)



**Fig. 2.** *Bathybiaster vexillifer* (W. Thomson), diameter up to 280 mm (Murray and Hjort 1912).

**Mynd 2.** *Bathybiaster vexillifer* (W. Thomson), diameter upp i 280 mm (Úr Murray og Hjort 1912).

Synonyms: *Archaster vexillifer* W. Thomson 1873; *Bathybiaster pallidus* Danielssen and Koren 1882; *Ilyaster mirabilis* Danielssen and Koren 1884; *Bathybiaster robustus* Verrill 1894

Reference to best descriptions of the species:

Mortensen (1927: 61-63, Fig. 35); Clark and Downey (1992: 47-48, Pl. A-C)

BioFar stations: 169 (3), 170 (1, not seen), 188 (1), 228 (3), 478 (1), 479 (1), 563 (11), 564 (10), 753 (1), 9007 (1, not seen)

Other records: Faroe-Shetland Channel (Bell 1892); south of the Iceland-Faroe Ridge (Murray and Hjort 1912); Porcupine Seabight ( $50^{\circ}22'N$ ,  $11^{\circ}44'W$ ); Rockall Trough ( $57^{\circ}41'N$ ,  $11^{\circ}48'W$ ) (Gage *et al.*, 1985)

Bathymetrical range within the area: 700 – 2,199 m  
Substrate: mud

Temperature: -0.9 - -0.7 °C (measured); estimated: -0.9 - +0.6°C

Water mass: NW

World distribution: Circumpolar-boreal: distributed all over the cold area of the Norwegian Sea, at Svalbard, in the cold part of the Faroe-Shetland Channel, along the E. Greenland coast and north to the Umanak Fjord on the W. Greenland coast (Mortensen 1927) and south to the Bay of Biscay (ca.  $44^{\circ}N$ ); in W. Atlantic south to Cape Hatteras ( $35^{\circ}N$ ) (Clark and Downey, 1992).

World bathymetrical range: 225 – 3,110 m

Remarks: Grieg (1919) describes one cold water and one warm-water species, which have been rejected by Mortensen (1927) and Ringvold (1996).

Genus *Leptychaster* E. A. Smith, 1876

***Leptychaster arcticus*** (M. Sars, 1850)

(Map 2)

Synonyms: *Astropecten arcticus* M. Sars 1850; *Leptychaster arcticus* Sladen 1889

Reference to best descriptions of the species:

Mortensen (1927: 66-67, Fig. 38); Clark and Downey (1992: 56-58, Pl. 14a-f)

BioFar stations: 6 (1), 10 (1), 27 (5), 32 (1), 43 (1), 44 (1), 45 (2), 51 (1), 100 (1), 117 (1), 118 (4), 119 (3), 120 (2), 124 (11), 146 (1), 154 (1), 158 (5), 189 (1), 205 (1), 233 (9), 234 (1), 263 (14), 267 (2), 268 (4), 281 (8), 283 (1), 285 (3), 286 (1), 290 (2), 299 (3), 329 (1), 332 (2), 333 (2), 334 (6), 335 (3), 341 (2), 343 (6), 344 (1), 345 (1), 352 (1), 354 (1), 359 (1), 363 (1), 364 (1), 381 (7), 382 (3), 411 (2), 415 (3), 419 (6), 420 (15), 421 (28), 422 (2), 423 (6), 451 (3), 453 (3), 454 (2), 457 (7), 467 (10), 469 (3), 481 (1), 482 (2), 483 (6), 495 (1), 499 (5), 524 (1), 587 (1), 598 (1), 604 (2), 621 (3), 646 (1), 691 (2), 696 (3), 716 (1), 717 (3), 738 (7), 739 (4), 742 (2), 743 (1), 744 (3), 747 (15), 756 (4), 760 (10), 762 (9), 763 (8), 764 (1), 765 (3), 766 (3), 776 (2), 778 (3), 9018 (1)

Other records: Faroe-Shetland Channel (Bell 1892).

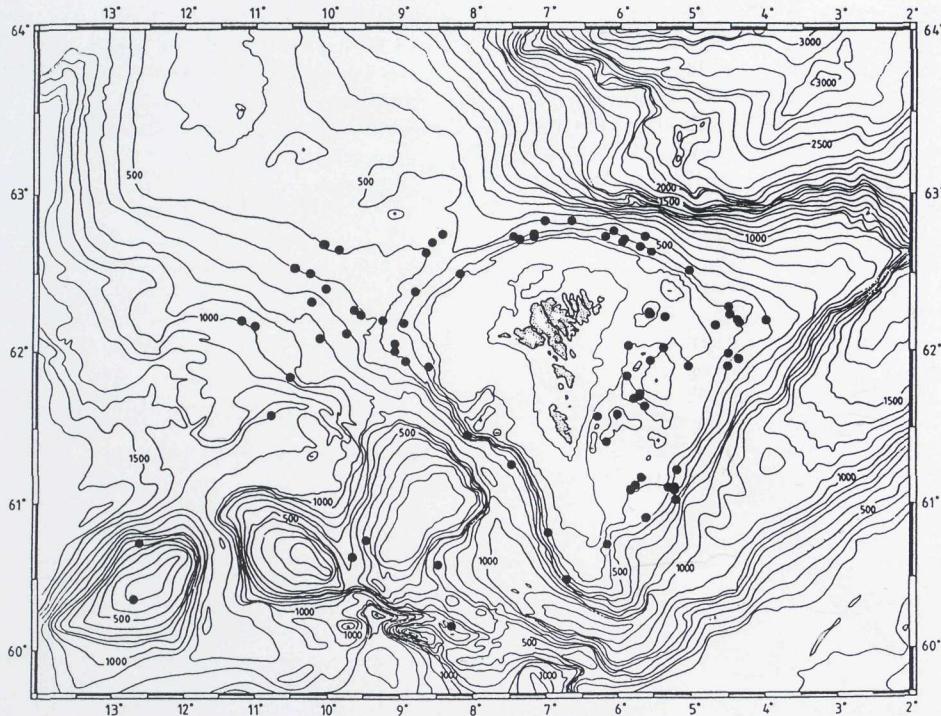
Bathymetrical range within the area: 160 – 1,319 m (mainly: 160 - 750 m)

Substrate: clay, sand, shell-sand, gravel, stones

Temperature: 0.3° - 7.9°C (measured); estimated: 0° - 8.6°C

Water mass: AW, AW/AI, AI, AI/NW

World distribution: Subarctic (Franz *et al.*, 1981); to circumboreal (D'yakonov 1950): in the West Atlantic, Labrador and east of Newfoundland south to Delaware; in the East Atlantic from the southern



**Map 2.** Records of *Leptychaster arcticus* (M. Sars) in the Faroe region.

**Kort 2.** Skrásetingar av *Leptychaster arcticus* (M. Sars) í føroyskum øki.

part of the Barents Sea along the Norwegian coast south to the Kornstadfjord in Møre and Romsdal county (Ringvold pers. obs.), the Faroe-Shetland Channel; in the Pacific from the Bering Sea south to northern Japan.

World bathymetrical range: 37 – 2,470 m

#### Genus *Plutonaster* Sladen, 1885

***Plutonaster bifrons*** (Wyville Thomson, 1873) (Map 3)

Synonym: *Archaster bifrons* Wyville Thomson 1873  
Reference to best descriptions of the species:

Mortensen (1927: 63-64, Fig. 36); Clark and Downey (1992: 71-72, Pl. 18a-c)

BioFar stations: 397 (1), 525 (1)

Other records: Faroe-Shetland Channel (Bell 1892); south of the Wyville-Thomson Ridge (Murray and

Hjort 1912); Rockall Trough (Gage *et al.*, 1985);

Porcupine Seabight (Clark and Downey 1992)

Bathymetrical range within the area: 445 – 1,006 m

Substrate: gravel, stones

Temperature: 6.7° - 6.8°C (estimated)

Water mass: AW/AI

World distribution: From the Faroes to South-Africa

World bathymetrical range: 630 – 2,965 m

Remarks: The BioFar individuals are found south-west of the Faroe Shelf (61°4'N, 8°2'W) and north of the Lousy Bank (60°4'N, 12°4'W).

#### Genus *Psilaster* Sladen, 1885

***Psilaster andromeda*** (Müller and Troschel, 1842) (Map 3)

Synonyms: *Astropecten andromeda* Müller and Troschel 1842; *Archaster andromenda* (M. Sars 1865: 56)

Reference to best descriptions of the species:

Mortensen (1927: 59-60, Fig. 33); Clark and Downey (1992: 77-78, Pl. 21d-g)

BioFar stations: 491 (1), 520 (1), 522 (1), 646 (1)

Other records: Faroe-Shetland Channel (Clark and Downey 1992); south of the Wyville-Thomson Ridge (Murray and Hjort 1912); Rockall Trough (Gage *et al.*, 1985)

Bathymetrical range within the area: 405 - 986 m

Substrate: clay, gravel, stones

Temperature: 2.0° - 8.6°C (measured)

Water mass: AW, AW/AI, AI

World distribution: Subarctic (Franz *et al.*, 1981):

From the Murman coast along the Norwegian coast to Bohuslän in Sweden, the Faroe-Shetland Channel south to the Bay of Biscay and Senegal.

World bathymetrical range: (19) 70 - 1,850 m

Remarks: Clark (Clark and Downey 1992) states that

it is possible to misidentify *Psilaster andromeda* as a species of the genus *Persephonaster* due to the differing extent of the superom marginal plates on the upper disc surface.

## Order NOTOMYOTIDA

### Family BENTHOPECTINIDAE

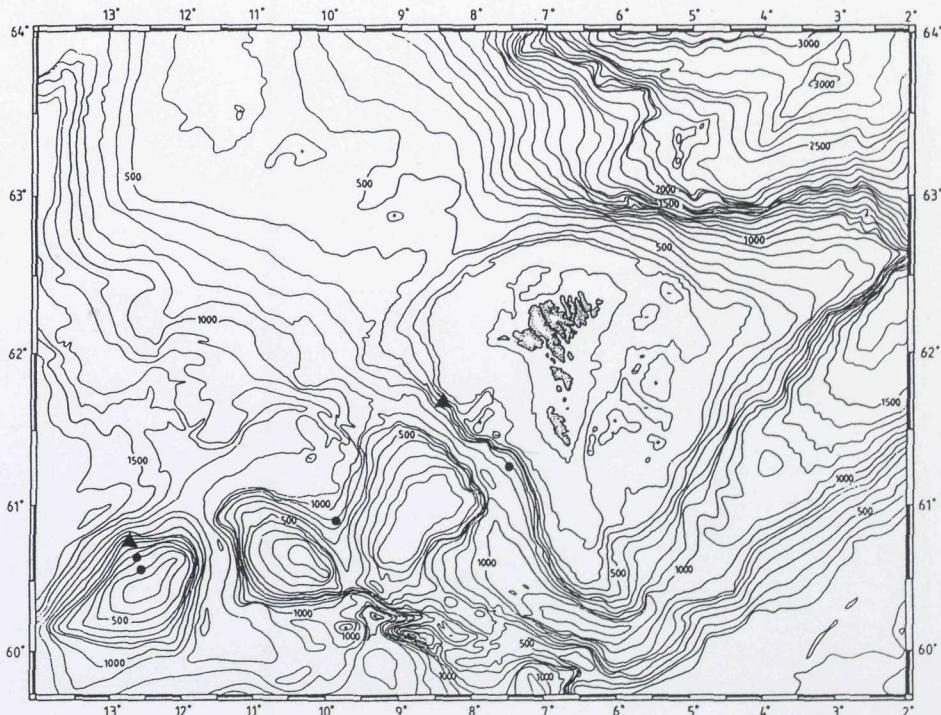
Genus *Pontaster* Sladen, 1885

***Pontaster tenuispinus*** (Düben and Koren, 1846)

Synonyms: *Astropecten tenuispinus* Düben and Koren 1846; *Archaster tenuispinus* M. Sars 1861

Reference to best descriptions of the species:

Mortensen (1927: 72-73, Fig. 40); Clark and Downey (1992: 140-142, Pl. 34d-g)



Map 3. Records of *Plutonaster bifrons* (W. Thomson) (▲), and *Psilaster andromeda* (Müller and Troschel)(●) in the Faroe region.

Kort 3. Skrásetingar av *Plutonaster bifrons* (W. Thomson) (▲) og *Psilaster andromeda* (Müller and Troschel) (●) í fóroyskum øki.

BioFar stations: 19 (1), 32 (1), 49 (1), 68 (2), 69 (17), 122 (3), 158 (5), 167 (1), 168 (1), 169 (3), 170 (2), 227 (3), 228 (6), 233 (2), 268 (1), 270 (1), 285 (1), 295 (1), 301 (1), 359 (1), 381 (6), 420 (1), 421 (9), 422 (1), 453 (2), 457 (1), 459 (1), 467 (1), 477 (4), 478 (4), 479 (2), 483 (3), 493 (1), 494 (5), 495 (2), 515 (1), 518 (42), 519 (18), 520 (3), 522 (17), 523 (47), 524 (11), 562 (1), 563 (181), 564 (31), 620 (1), 689 (33), 690 (27), 691 (1), 692 (4), 695 (22), 722 (1), 747 (1), 755 (1), 756 (1), 757 (1), 760 (1), 761 (2), 762 (3), 763 (3), 764 (2), 765 (1), 766 (2), 776 (1)

Other records: Faroe-Shetland Channel (Bell 1892); Rockall Trough (Gage *et al.*, 1985); Porcupine Seabight (Farran 1913)

Bathymetrical range within the area: 200 – 1,500 m

Substrate: clay, sand, gravel, stones

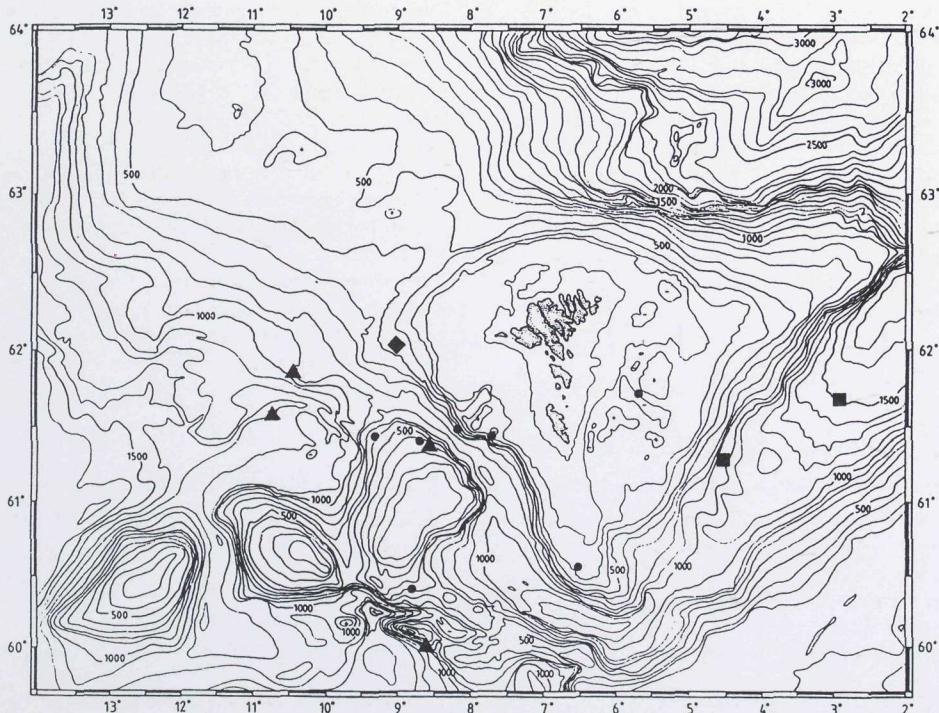
Temperature: -0.95° - +7.9°C (measured); estimated: -0.9° - +8.6°C

Water mass: AW, AW/AI, AI, AI/NW, NW

World distribution: Circum-arctic: In the West Atlantic south to Cape Cod; in the East Atlantic south to SW Norway and west of Ireland south to the Bay of Biscay, c. 44°N, at a bottom temperature of -1.4 to 14.8°C.

World bathymetrical range: 16 – 2,250 m

Remarks: During BioFar, the species was found all around the Faroes. Most individuals (181 specimens) were found at St. 563. The species is polymorphic and it has been suggested that there should be a distinction between a cold water (*P. tenuispinus* var. *platynota*) and a warm water form (*P. tenuispinus* var. *marionis*). All specimens examined have marginal plates of different forms, which suggest only one species.



**Map 4.** Records of *Tremaster mirabilis* Verrill (◆), *Chondraster grandis* (Verrill) (▲), *Porania pulvillus* (O.F. Müller) (●), and *Poraniomorpha bidens* Mortensen (■) in the Faroe region.

**Kort 4.** Skrásetingar av *Tremaster mirabilis* Verrill (◆), *Chondraster grandis* (Verrill) (▲), *Porania pulvillus* (O.F. Müller) (●), og *Poraniomorpha bidens* Mortensen (■) í fóroyskum øki.

## Order VALVATIDA

## Family ODONTASTERIDAE

Genus *Odontaster* Verrill, 1880***Odontaster* sp. cf. *O. mediterraneus***  
(Marenzeller, 1891)

Reference to best description of the species:

Mortensen (1927:77-78)

BioFar stations: 68 (1), 421 (1), 495 (1), 515 (1)

Other records: *Odontaster* sp. Gage *et al.*, (1985) from  
the Porcupine Seabight (R=29 mm)

Bathymetrical range within the area: 597 - 700 m

Substrate: sand, gravel, small stones

Temperature: 2.6°C (measured); estimated: 3.1° -  
8.2°C

Water mass: AW, AW/AI, AI

World distribution: Porcupine Seabight, south-west of  
Ireland, the Bay of Biscay and the Mediterranean.  
This distribution pattern pertains to *O. mediterraneus*  
(Marenzeller, 1891).

World bathymetrical range: 414 - 1,800 m

Remarks: Clark in Gage *et al.*, (1985) found that two  
specimens of *Odontaster* collected in the Porcupine  
Seabight showed divergencies from Mediterranean  
specimens of *O. mediterraneus*.It leaves room for doubt as to the extension of *O.*  
*mediterraneus* to the SW of Ireland. More material  
is needed for further assessment of the identity of  
these specimens.

## Family ASTERINIDAE

Genus *Tremaster* Verrill, 1880***Tremaster mirabilis* Verrill, 1880** (Map 4)Reference to best description of the species: Clark and  
Downey (1992: 196, Pl. 44a,b)

BioFar station: 118 (1)

Bathymetrical range within the area: 450 m

Substrate: sand and gravel

Temperature: 6.2°C (measured)

Water mass: AW/AI

World distribution: In the Western Atlantic from  
Labrador and Nova Scotia south to Cuba, south and  
east of the Falkland Islands; in the Eastern Atlantic  
off the mid-Norwegian coast, the Faroes, SE Ice-  
land, SE Greenland, the Barents Sea, Kerguelen in

the Antarctic.

World bathymetrical range: 150 - 1,060 m (Clark and  
Downey 1992)

Remarks: The species is new to the Faroes.

## Family PORANIIDAE

Genus *Chondraster* Verrill, 1895***Chondraster grandis* (Verrill, 1878)**

(Map 4)

Synonyms: *Porania grandis* Verrill 1878; ? *Mar-*  
*ginaster fimbriatus* Sladen 1889; ? *Cheilaster fimbriatus* Bell 1893; *Culcita borealis* Süssbach and  
Breckner 1911Reference to best description of the species: Clark and  
Downey (1992: 203-204, Pl. 49A-F)

BioFar stations: 71 (1), 301 (1), 335 (1), 696 (3)

Other records: Faroe Bank and Lousy Bank (Clark  
1984)

Bathymetrical range within the area: 358 - 1319 m

Substrate: sand, gravel, large stones

Temperature: 1.3° - 7.5°C (measured)

Water mass: AW, AW/AI, AI, AI/NW

World distribution: In the W. Atlantic from Cape Cod  
to Cape May; in the E. Atlantic from Lousy Bank  
and Wyville-Thomson Ridge to the southern Bay  
of Biscay.

World bathymetrical range: 300 - 2490 m

Remarks: Some specimens determined by Madsen to  
be *Porania pulvillus* are probably *C. grandis* as  
they have characteristics of *C. grandis* described  
by Clark and Downey (1992).Genus *Porania* Gray, 1840***Porania pulvillus* (O.F. Müller, 1776)**

(Map 4)

Synonyms: *Asterias pulvillus* O.F. Müller 1776; *Aster-*  
*opsis pulvillus* Müller and Troschel 1842

Reference to best descriptions of the species:

Mortensen (1927: 90-92, Fig. 51); Clark and  
Downey (1992: 209-210, Pl. 47a-c)BioFar stations: 68 (1), 70 (1), 90 (2), 279 (1), 497 (1),  
529 (1), 531 (1)Other records: Húsagrynda, 62°02'10N, 06°16'50W  
(Lieberkind 1929); Lousy Bank (Mortensen 1927)

Bathymetrical range within the area: 252 - 600 m

Substrate: hard bottom, sand, gravel.

Temperature: 7.0° - 8.3°C (estimated)

Water mass: AW

World distribution: From the Trondheimsfjord in W. Norway, Skagerrak, Shetland and Lousy Bank south to North Spain.

World bathymetrical range: 10 - 1,000 m, most common above a 200-300 m depth (Mortensen 1927)

Remarks: It has been discussed whether or not *Marginaster pectinatus* is a juvenile form of *Porania pulvillus*, and whether or not the five described species of *Marginaster* can be synonymised. There has also been discussion as to whether or not *M. capreensis* is distributed both in the Mediterranean and in the Atlantic (see Downey 1973).

nel (D'yakonov 1950)

Bathymetrical range within the area: 246 - 1,096 m

Substrate: sand, gravel, stones

Temperature: -0.1° - +1.0°C (measured); estimated: -0.84° - +7.1°C

Water mass: AW/AI/ AI, AI/NW, NW

World distribution: North-east of the Faroe Channel, west coast of Greenland, Denmark Strait, the Norwegian Sea to the Kolafjord, the White Sea, Kara Sea, Laptev Sea, East-Siberian Sea and east to 161° E (D'yakonov 1950).

World bathymetrical range: 15 - 1,200 m

Remarks: Mortensen (1927) points to the difference between *P. hispida* and *P. tumida* where the disk of *P. tumida* is covered with fine, rounded grains, and the lower marginals and oral interradial plates are without spines.

### Genus *Poraniomorpha* Danielssen and Koren, 1881

#### *Poraniomorpha bidens* Mortensen, 1932

(Map 4)

Reference to best description of the species:

Mortensen (1932: 9-12)

BioFar stations: 563 (3), 564 (1)

Other records: Faroe-Shetland Channel: 60°40'N, 04°50'W; 60°25'N, 04°31'W and 60°06'N, 05°50'W (Clark and Downey 1992)

Bathymetrical range within the area: 1,030 - 1,500 m

Substrate: soft bottom

Temperature: -0.86°C (measured)

Water mass: NW

World distribution: Probably circumpolar: From Northern Canada and Western Greenland and from Cape York south to Umanák, Kara Sea and the cold area of the Faroe-Shetland Channel at bottom temperatures between -0.2 and 1.1°C (Mortensen 1932).

World bathymetrical range: 910 - 1,110 m

#### *Poraniomorpha tumida* (Stuxberg, 1878)

(Map 5)

Reference to best description of the species:

(D'yakonov 1950); Stuxberg (1878)

BioFar stations: 122 (1), 172 (1), 269 (1), 294 (1), 424 (1), 425 (1), 474 (1)

Other records: north-east of the Faroe-Shetland Chan-

nel (D'yakonov 1950)

Bathymetrical range within the area: 246 - 1,096 m

Substrate: sand, gravel, stones

Temperature: 2.6°C (measured); estimated: 2.5° - 8.2°C

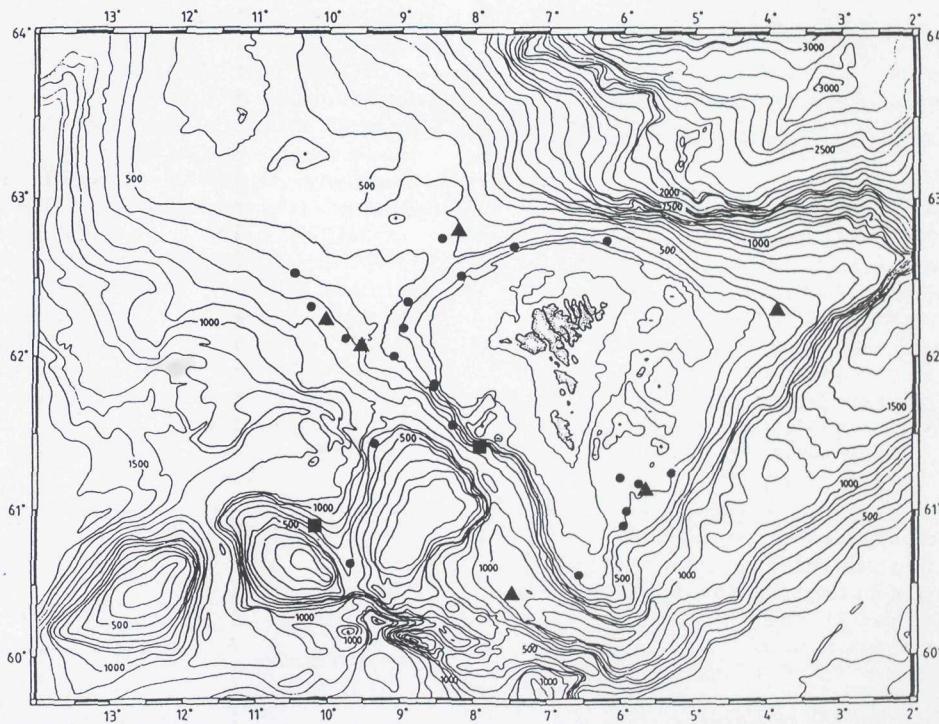
Water mass: AW, AW/AI, AI

World distribution: Arctic south to Cape Cod in the Western Atlantic; in the Eastern Atlantic along the Norwegian coast south to Bohuslän in Sweden.

World bathymetrical range: 90 - 1,170 m

Remarks: According to D'yakonov (1950) there is an infraspecific overlap between *P. hispida* and *P. tumida* in northern Norway and the Barents Sea.

Clark and Downey (1992) write: "Indeed, much remains to be done to establish the precise limits or the possible extent of overlap of the infraspecific divisions of *P. hispida*."



*Map 5. Records of Poraniomorpha borealis* (Süssbach and Breckner) (■), *P. hispida* (M. Sars) (●), and *P. tumida* (Stuxberg) (▲) in the Faroe region.

*Kort 5. Skrásetingar av Poraniomorpha borealis* (Süssbach and Breckner) (■), *P. hispida* (M. Sars) (●) og *P. tumida* (Stuxberg) (▲) í fóroyskum øki.

### *Poraniomorpha borealis* (Süssbach and Breckner, 1911) (Map 5)

Synonyms: *Culcita borealis* Süssbach and Breckner 1911; *Culcitopsis borealis* Verrill 1914; *Sphaeraster berthae* Dons 1938, *Poraniomorpha hispida* parte (Mortensen 1927)

Reference to best description of the species: Clark and Downey (1992: 218-220, Pl. a-l)

BioFar stations: 314 (1), 530 (1)

Other records: Lousy Bank, east and south-east of the Wyville-Thomson Ridge and in Porcupine Seabight (Clark and Downey 1992)

Bathymetrical range within the area: 311 - 650 m

Substrate: shell-sand, gravel

Temperature: 7.1° - 8.0°C (measured)

Water mass: AW

World distribution: In the West Atlantic from George's Bank to Hudson Canyon (south-east of New York); in the East Atlantic from Northern Norway to west of the British Isles and south to Portugal.

World bathymetrical range: 110 – 1,170 m.

Remarks: Many taxonomists wish to synonymise *P. borealis* and *P. hispida*.

## Family GONIASTERIDAE

Genus *Ceramaster* Verrill, 1899

*Ceramaster granularis* (O.F. Müller, 1776)

Synonyms: *Pentagonaster granularis* O.F. Müller 1776; *Asterias granularis* Retzius 1783

Reference to best description of the species:

Mortensen (1927: 81-82); Clark and Downey (1992: 233-234, Pl. 56A,B)

BioFar stations: 44 (1), 117 (7), 118 (9), 120 (1), 122 (2), 124 (1), 163 (1), 233 (3), 268 (6), 304 (1), 305 (2), 314 (1), 331 (4), 341 (3), 344 (3), 359 (1), 419 (2), 420 (2), 457 (5), 474 (3), 490 (1), 499 (4), 517 (1), 536 (1), 698 (2), 728 (2), 736 (1), 738 (1), 739 (1), 742 (4), 747 (1)

Other records: Faroe-Shetland Channel (Bell 1892); Iceland-Faroe Ridge (Murray and Hjort 1912); Lousy Bank and NW Ireland (Mortensen 1927)

Bathymetrical range within the area: 246 – 1,157 m (mainly: 250 – 750 m)

Substrate: gravel, stone

Temperature: 0.9° - 2.7°C (measured); estimated: 0.9° to 8.0°C

Water mass: AW, AW/AI, AI, AI/NW

World distribution: Subarctic and North Boreal Atlantic (Franz *et al.*, 1981): found in the W. Atlantic at Newfoundland, South Greenland and south to 41°N (Long Island); in the E. Atlantic: Iceland, Faroes, Hebrides and Norway south to Skagerrak. According to Mortensen (1927), the species is also found off Morocco and the Azores.

World bathymetrical range: 40 – 1,200 m.

Remarks: The species is distributed all around the Faroes.

Genus *Hippasteria* Gray, 1840

*Hippasteria phrygiana* (Parelius, 1768)

(Map 6)

Synonyms: *Asterias phrygiana* Parelius 1768; *Hippasteria plana* Gray 1840; *Hippasteria insignis* Dons 1937

Reference to best description of the species:

Mortensen (1927: 88-89, Fig. 50); Clark and Downey (1992: 247-248, Pl. 58a,b)

BioFar stations: 3 (4), 28 (1), 118 (2), 119 (2), 192 (1),

204 (1), 268 (1), 269 (1), 326 (1), 352 (1), 353 (1), 354 (1), 525 (1), 536 (1), 540 (1), 597 (1), 600 (1), 605 (3), 606 (1), 607 (1)

BioFar 2 stations: 1222 (2)

Other records: The species is common in the *Modiolus*-community around the Faroes, especially at depths greater than 90-100 m (Lieberkind 1929).

Bathymetrical range within the area: 70 – 1,006 m (mainly 70 - 550 m)

Substrate: sand, gravel, rocks.

Temperature: 2.9° - 9.1°C (estimated)

Water mass: AW, AW/AI, AI

World distribution: Boreoarctic – North Atlantic: in the W. Atlantic south to Cape Cod; in the E. Atlantic south to Kattegat, Northern Scotland and Northernmost Ireland.

World bathymetrical range: 20 (Clark and Downey 1992) to 1,000 m (BioFar)

Remarks: The species is polymorphic and many subspecies are described.

Genus *Pseudarchaster* Sladen, 1885

*Pseudarchaster gracilis* (Sladen, 1889)

(Map 6)

Synonyms: *Aphroditaster gracilis* Sladen 1889

Reference to best description of the species: Clark and Downey (1992: 262-263, Pl. 62e,f)

BioFar stations: 523 (1)

Other records: SW of the Hebrides (Gage *et al.*, 1985); south of the Wyville-Thomson Ridge (Harvey *et al.*, 1988)

Bathymetrical range within the area: 606 m

Substrate: clay, fine sand and stones

Temperature: 8.5°C (estimated)

Water mass: AW

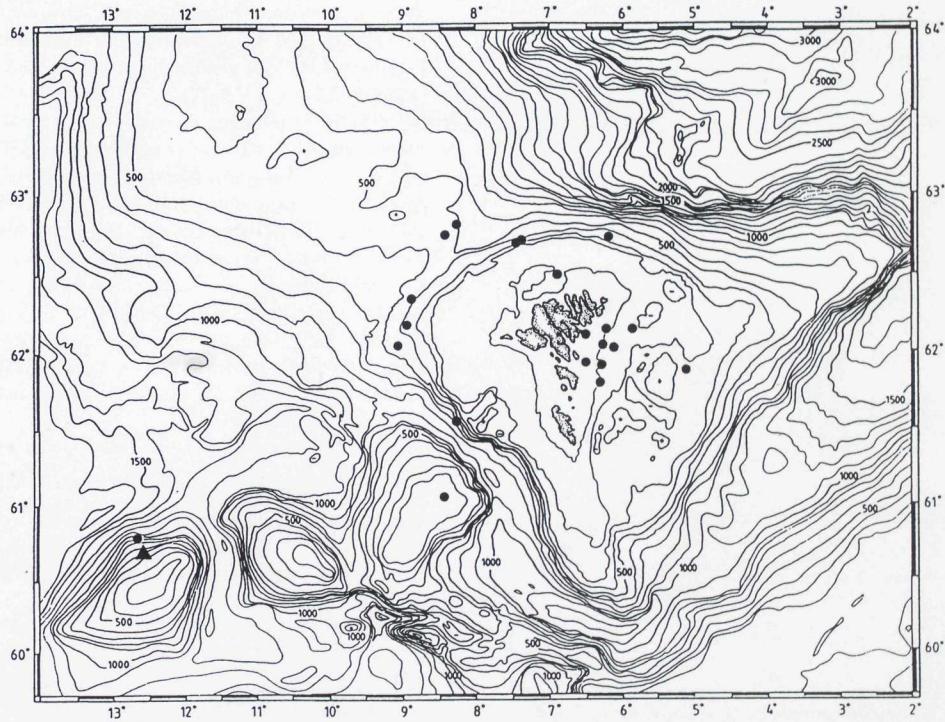
World distribution: From Cape Cod and the Faroes on both sides of the Atlantic south to the equator.

World bathymetrical range: 320 – 2,940 m.

Remarks: This new northern distribution limit of the species from north of the Lousy Bank (60°42'N, 13°35'W) is the first recorded occurrence in the Faroes. The specimen was large (R=130 mm).

*Pseudarchaster parelii* (Düben and Koren, 1846)

Synonyms: *Astropecten parelii* Düben and Koren 1846; *Archaster parelii* (M. Sars 1861: 35)



**Map 6.** Records of *Hippasteria prygiana* (Parelius) (●), and *Pseudarchaster gracilis* (Sladen) (▲) in the Faroe region.

**Kort 6.** Skrásetingar av *Hippasteria prygiana* (Parelius) (●) og *Pseudarchaster gracilis* (Sladen) (▲) í fóroyskum øki.

Reference to best description of the species:

Mortensen (1927: 87-88, Fig. 49); Clark and Downey (1992: 264, Pl. 63a, b)

BioFar stations: 6 (1), 8 (1), 43 (1), 48 (1), 65 (1), 68 (1), 69 (1), 70 (1), 117 (1), 118 (1), 122 (1), 146 (1), 154 (2), 164 (1), 175 (1), 233 (3), 268 (1), 302 (1), 310 (2), 315 (2), 317 (1), 323 (1), 327 (1), 333 (2), 334 (1), 352 (1), 354 (1), 356 (1), 357 (1), 363 (1), 381 (1), 390 (1), 420 (3), 423 (2), 453 (1), 490 (1), 492 (1), 494 (3), 495 (2), 496 (2), 497 (1), 509 (1), 514 (3), 515 (6), 518 (5), 522 (2), 595 (1), 598 (1), 689 (4), 690 (1), 691 (2), 695 (11), 739 (1), 760 (1), 762 (1), 763 (2), 764 (5), 776 (3), 777 (1)

Other records: South of the Wyville-Thomson Ridge (Murray and Hjort 1912), north of Ireland (Bell 1892), Rockall Trough (Gage *et al.*, 1985).

Bathymetrical range within the area: 170 – 1,083 m

Substrate: clay, sand, shell-sand, gravel, stones

Temperature: 0.3° – 7.9°C (measured); estimated: 0.3° – 8.6°C

Water mass: AW, AW/AI, AI, AI/NW

World distribution: Circumboreal (D'yakonov 1950):

In the West Atlantic from Newfoundland to Florida; in the East Atlantic from the Faroes and Northern Norway to the Bay of Biscay. It is also recorded from Southern Greenland.

World bathymetrical range: 75 – 2,300 m.

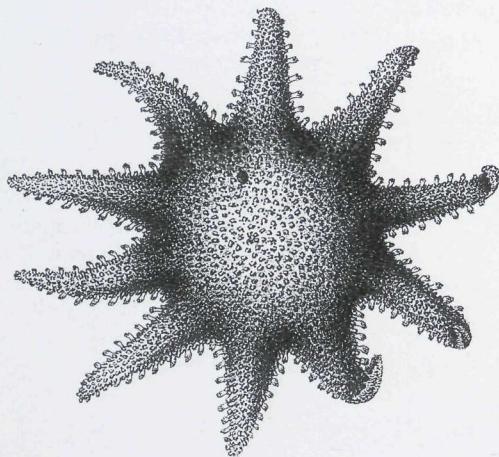
Remarks: The species is distributed all around the Faroes. Downey (in Clark and Downey 1992) describes three species and one sub-species in the genus *Pseudarchaster* in the Atlantic.

## Order VELATIDA

## Family SOLASTERIDAE

Genus *Crossaster* Müller and Troschel, 1840

*Crossaster papposus* (Linné, 1766) (Fig. 3)



**Fig. 3.** *Crossaster papposus* (L.), diameter up to 340 mm (Danielssen and Koren 1884).

**Mynd 3.** *Crossaster papposus* (L.), tvørmát upp i 340 mm (Úr Danielssen og Koren 1884).

Synonyms: *Asterias papposa* Linné 1766; *Asterias affinis* Brandt 1835; *Solaster papposus* Müller and Troschel 1842; *Crossaster affinis* Danielssen and Koren 1877

Reference to best description of the species:

Mortensen (1927: 112-114, Fig. 67); Clarke and Downey (1992: 297-298, Pl. 74 C,D)

BioFar stations: 3 (1), 8 (1), 56 (1), 105 (1), 326 (1), 350 (4), 368 (4), 548 (2), 606 (1)

Other records: Faroe-Shetland Channel (Bell 1892); SW of Suðuroy, SE of Fugloy, NE of Kalsoy and at the Faroe Bank (Lieberkind 1929)

Bathymetrical range within the area: 77 - 171 m

Substrate: mud, sand, shell-sand and stones

Temperature: 7.9° - 9.1°C (estimated)

Water mass: AW

World distribution: Circumboreal: In W. Atlantic from Labrador south to c. 40°N; in the E. Atlantic

from the Arctic to around the British Isles, south to Brittany, Iceland. Also distributed in the northern Pacific Ocean south to Vancouver and the Sea of Okhotsk (Mortensen 1927).

World bathymetrical range: 0 - 1,200 m.

Remarks: The genus *Crossaster* may be divided in one cold water (*C. squamatus*) and one warm water species (*C. papposus*) based on the differences in the reticulation of the dorsal skeleton and in the number of furrow spines (Mortensen 1927, Ringvold 1996).

At 12 stations (56, 82, 192, 230, 381, 421, 483, 499, 549, 743, 750 and 9018) small specimens which could only be determined to family level were found.

### *Crossaster squamatus* (Döderlein, 1900)

Synonyms: *Solaster papposus* var. *squamatus* Döderlein 1900

Reference to best descriptions of the species: Döderlein (1900); Mortensen (1927: 114)

BioFar stations: 10 (1), 80 (3), 82 (1), 117 (5), 118 (13), 122 (2), 172 (2), 189 (2), 267 (1), 268 (7), 290 (4), 292 (1), 294 (15), 420 (1), 421 (2), 424 (1), 457 (2), 477 (1), 482 (1), 483 (2), 500 (13), 502 (2), 540 (1), 562 (2), 563 (1), 669 (7), 698 (6), 718 (1), 727 (1), 728 (6), 731 (5), 732 (1), 738 (1), 739 (2), 742 (4), 749 (2), 750 (1), 9018 (1)

Other records: Iceland-Faroe Ridge (Murray and Hjort 1912); the Hebrides (56°43'N, 9°21'W) (Gage et al., 1985).

Bathymetrical range within the area: 72 - 1,150 m

Substrate: mud, sand, gravel, stones

Temperature: -0.1° - +2.0°C (measured); estimated: -0.9° - +7.8°C

Water mass: AW, AW/AI, AI, AI/NW, NW

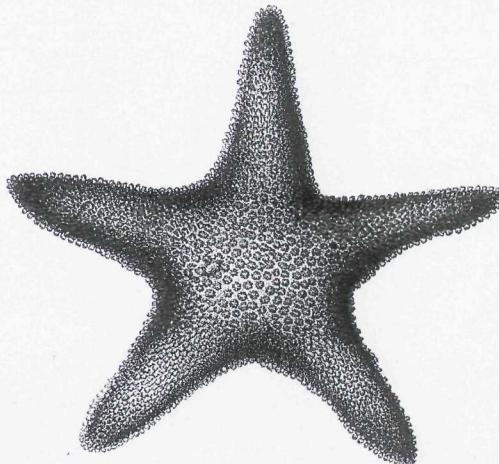
World distribution: East Greenland to the Barents Sea including most of the cold part of the Norwegian Sea (Gage et al., 1985); north to Svalbard and south to the Hebrides, c. 56 °N (Harvey et al., 1988).

World bathymetrical range: 100 - 1,160 m

Remarks: At two stations (118, 669) *C. squamatus* was found in warm water. Downey (in Clark and Downey 1992) holds *C. squamatus* synonymous with *C. papposus*.

Genus *Lophaster* Verrill, 1878

*Lophaster furcifer* (Düben and Koren, 1846) (Fig. 4)



**Fig. 4.** *Lophaster furcifer* (Düben and Koren, 1846), diameter up to 125 mm (Danielssen and Koren, 1884).  
**Mynd 4.** *Lophaster furcifer* (Düben og Koren, 1846), tvørmát upp i 125 mm (Úr Danielssen og Koren, 1884).

Synonyms: *Chaetaster borealis* Düben 1845; *Solaster furcifer* Düben and Koren 1846

Reference to best description of the species:

Mortensen (1927: 116-117, Fig. 69); Clark and Downey (1992: 299-300, Pl. 73c,d)

BioFar stations: 115 (1), 117 (1), 119 (1), 230 (1), 467 (1), 503 (1), 532 (1), 533 (1), 534 (1), 540 (2), 726 (1), 747 (1), 769 (1), 9018 (1)

Other records: Faroe-Shetland Channel (Bell 1892)

Bathymetrical range within the area: 364 - 703 m

Substrate: clay, gravel, stones

Temperature: 2.0°C (measured); estimated: -0.6° - +8.2°C

Water mass: AW, AW/AI, AI, AI/NW, NW

World distribution: In the West Atlantic south to c. 41°N and Bermuda; in the East Atlantic in the Faroe-Shetland Channel, Lousy Bank and north-west of Scotland, Svalbard and the Siberian Sea south to c. 59°N on the Norwegian coast (Mortensen 1927).

World bathymetrical range: 6 - 1,100 m

Genus *Solaster* Forbes, 1839

*Solaster endeca* (Linné, 1771)

Synonyms: *Asterias endeca* Linné 1771

Reference to best description of the species:

Mortensen (1927: 115-116, Fig. 68); Clark and Downey (1992: 303-305, Pl. 74a, b)

BioFar stations: 3 (2), 781 (1)

BioFar 2 stations: 1008 (1)

Other records: SW of Suðuroy, the Kaldbakfjord, SW of Mykines Holmur and south of Nolsoy (Mortensen 1924)

Bathymetrical range within the area: 80 - 103 m

Substrate: shell-sand

Temperature: 7.8° - 8.2°C (measured)

Water mass: AW

World distribution: Circumboreal: In the Western Atlantic south to Cape Cod; in the Eastern Atlantic from Svalbard south to Kattegat, the Faroes, the Irish Sea and west of Ireland; in the Pacific south to Puget Sound.

World bathymetrical range: 0 - 549 m.

## Family PTERASTERIDAE

Genus *Diplopteraster* Verrill, 1880

*Diplopteraster multipes* (M. Sars, 1866)

(Map 7)

Synonyms: *Pteraster multipes* M. Sars 1866; *Retaster multipes* Sladen 1889

Reference to best description of the species: Clark and Downey (1992: 311-312, Pl. 75 G)

BioFar stations: 6 (1)

Other records: SW of the Faroe Bank, 61°7'N, 9°33'W (Murray and Hjort 1912); Porcupine Seabight and Rockall Trough (Harvey *et al.*, 1988).

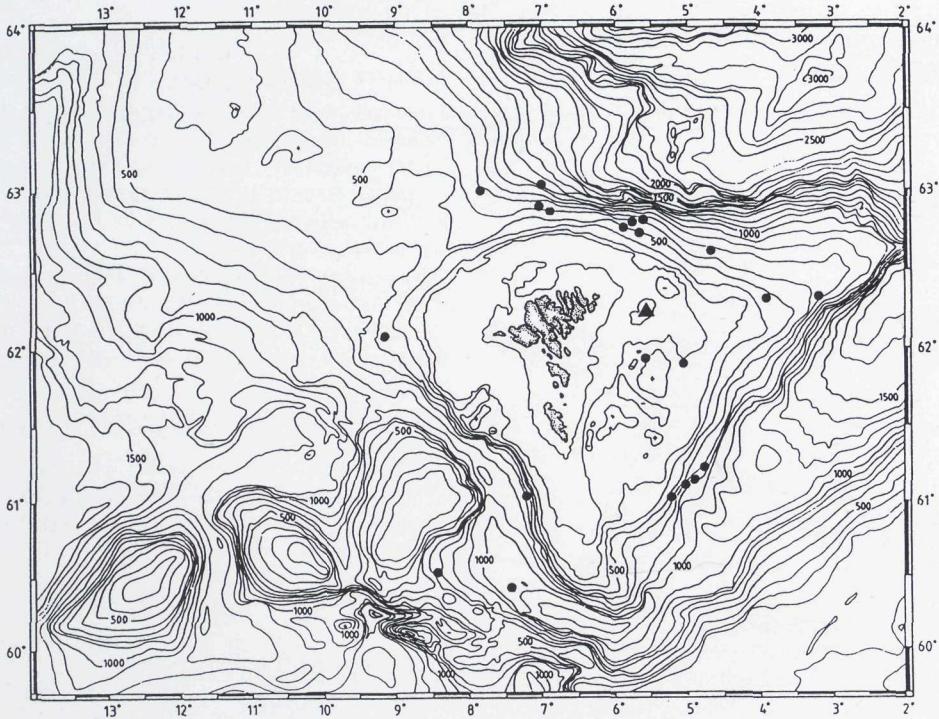
Bathymetrical range within the area: 231 m

Substrate: shell-sand

Temperature: 7.5°C (estimated)

Water mass: AW

World distribution: Arctic circumpolar: In the W. Atlantic south to off Chesapeake Bay; in the E. Atlantic south to the County Vestfold in Norway. The species is also found off South Africa and in the Pacific Ocean south to San Diego, California and the Gulf of Suruga, Japan (Clark and Downey, 1992).



*Map 7. Records of *Diplopteraster multipes* (M. Sars) (▲), and *Hymenaster pellucidus* W. Thomson (●) in the Faroe region.*

**Kort 7.** Skrásetingar av *Diplopteraster multipes* (M. Sars) (▲) og *Hymenaster pellucidus* W. Thomson (●) í fóroyiskum øki.

World bathymetrical range: 91 – 1,225 m.

Remarks: The recorded specimen was large,  $R= 130$  mm. Clark and Downey (1992) gives size range  $R= 12\text{--}92$  mm.

### Genus *Hymenaster* Thomson, 1873

#### *Hymenaster pellucidus* W. Thomson, 1873 (Map 7)

Synonym: *Hymenaster giganteus* Sladen 1891

Reference to best descriptions of the species:

Mortensen (1927: 107–108, Fig. 62); Clark and Downey (1992: 319–320, Fig. 50a, b, Pl. 77 c, d)

BioFar stations: 15 (1), 27 (1), 41 (1), 82 (2), 137 (1), 172 (1), 230 (6), 274 (1), 293 (1), 458 (4), 481 (1), 482 (1), 533 (1), 719 (1), 749 (3), 750 (8), 751 (1), 770 (7), 778 (1), 9012 (24), 9018 (26)

Other records: Found in the cold part of the Faroe-

Shetland Channel (Bell 1892); Iceland-Faroe Ridge (Murray and Hjort 1912).

Bathymetrical range within the area: 225 – 1,114 m (mainly: 450 – 750 m)

Substrate: mud, clay, sand, shell-sand, gravel, rock

Temperature:  $-0.8^{\circ}$  –  $+2.0^{\circ}\text{C}$  (measured); estimated:  $-0.8^{\circ}$  –  $+7.5^{\circ}\text{C}$

Water mass: AW, AW/AI, AI, AI/NW, NW

World distribution: Circumboreal: in the West At-

lantic south to the northern part of South America; in the East Atlantic from East Greenland, Svalbard and the Siberian Sea south to Portugal. It is also found in the Eastern Pacific south to Panama.

World bathymetrical range: 128 – 3,239 m.

Remarks: There is disagreement in synonymising *H. membranaceus* Thomson, 1877 and *H. giganteus* Sladen, 1891 with *H. pellucidus* Thomson.

Genus *Pteraster* Müller and Troschel, 1842

***Pteraster* sp. aff. *P. acicula* (Downey, 1970)**

Synonyms: *Marsipaster acicula* Downey 1970;  
*Pteraster acicula* Downey 1973; ? *Pteraster* sp. aff.  
*P. acicula* Clark 1983

Reference to best description of the species: Downey (1970: 309); Clark and Downey (1992: 325-326, Pl. 79a, b)

BioFar stations: 68 (2), 88 (1), 89 (1), 115 (1), 117 (1), 120 (2), 124 (2), 283 (1), 299 (1), 317 (1), 324 (1), 335 (1), 341 (6), 411 (11), 419 (2), 420 (1), 421 (5), 423 (1), 483 (3), 495 (3), 499 (1), 509 (1), 515 (2), 524 (1), 536 (1), 587 (1), 698 (1), 726 (2), 727 (1), 737 (1), 738 (6), 742 (1), 744 (5), 747 (3), 760 (1), 765 (1)

Other records: *Pteraster* (*Apterodon*) sp. aff. *P. acicula* is also found in Rockall Trough

(Gage *et al.*, 1985)

Bathymetrical range within the area: 271 - 1,022 m

Substrate: sand, gravel, stones

Temperature: 0.3° - 4.2°C (measured); estimated: -0.6° - +8.6°C

Water mass: AW, AW/AI, AI, AI/NW, NW

World distribution: Found in the western part of the Mexican Gulf, Florida, Cuba, the Faroes and Rockall Trough.

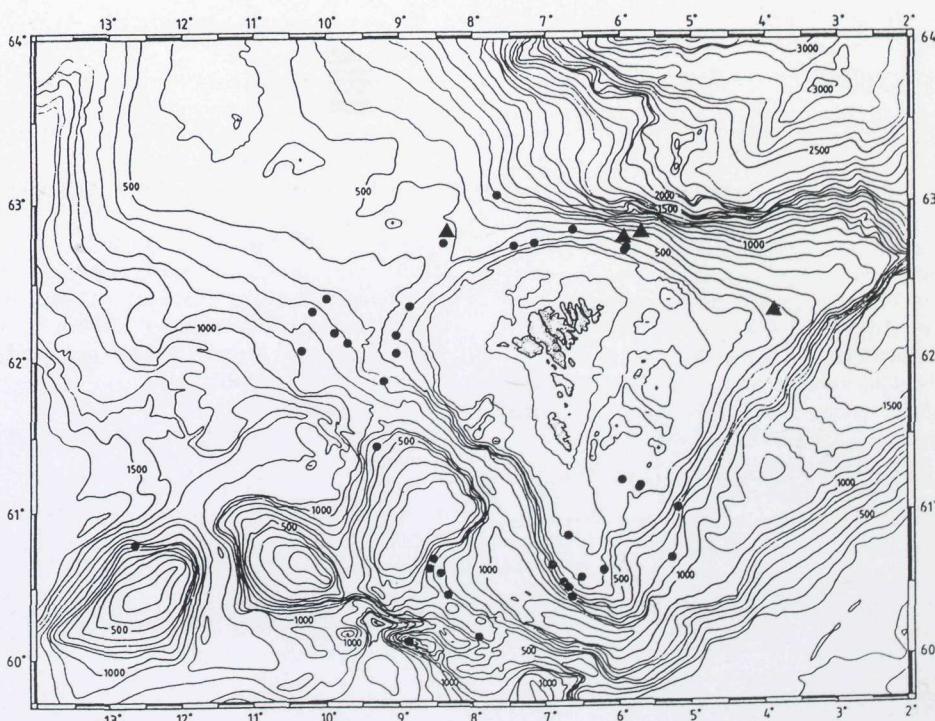
World bathymetrical range: 260 - 3712 m.

Remarks: A. M. Clark (*in litt.*) expresses scepticism for Dr. Downey's determination of some echinoderm specimens as *P. acicula*.

***Pteraster militaris* (O.F. Müller, 1776)**

(Map 8)

Synonyms: *Asterias militaris* O.F. Müller 1776;  
*Asteriscus militaris* Müller and Troschel 1842



Map 8. Records of *Pteraster militaris* (O.F. Müller) (▲), and *P. obscurus* (Perrier) (●) in the Faroe region.  
 Kort 8. Skrásetingar av *Pteraster militaris* (O.F. Müller) (▲) og *P. obscurus* (Perrier) (●) í fóroyskum øki.

Reference to best description of the species:

Mortensen (1927: 104-105, Fig. 60); Clark and Downey (1992: 332-333)

BioFar stations: 68 (2), 89 (2), 90 (1), 95 (1), 118 (1), 122 (1), 189 (1), 268 (2), 275 (1), 282 (1), 287 (1), 290 (1), 292 (1), 297 (1), 303 (1), 341 (1), 451 (1), 453 (1), 474 (1), 476 (1), 482 (1), 499 (1), 500 (1), 504 (1), 508 (3), 525 (1), 534 (2), 536 (1), 698 (5), 724 (1), 727 (1), 737 (1), 738 (2), 739 (2), 747 (1), 756 (1)

Other records: Faroe-Shetland Channel (Sladen 1883, Bell 1892); Faroe Bank and Húsagryrna

(Lieberkind 1929); Lousy Bank (Mortensen 1927)

Bathymetrical range within the area: 191 - 1,006 m

Substrate: mud, sand, gravel, stones

Temperature: -0.7° - +2.6°C (measured); estimated: -0.65° - +8.5°C

Water mass: AW, AW/AI, AI, AI/NW, NW

World distribution: Circumboreal: In the West

Atlantic south to Cape Cod; in the East Atlantic from the Faroes and Norway; in the Pacific south to Washington and Japan.

World bathymetrical range: 10 - 1,100 m.

### *Pteraster obscurus* (Perrier, 1891) (Map 8)

Synonyms: *Hexaster obscurus* Perrier 1891; *Pteraster hexactis* Verrill 1894

Reference to best description of the species: Clark and Downey (1992: 333-334, Pl. 79g, h)

BioFar stations: 172 (1), 268 (1), 749 (2), 750 (2)

Bathymetrical range within the area: 459 - 600 m

Substrate: mud, sand, gravel, stones

Temperature: 1.0°C (measured); estimated: 0° - 5.7°C

Water mass: AW/AI, AI, AI/NW

World distribution: Circumboreal: In the West Atlantic south to Newfoundland; in the East Atlantic south to Northern Norway; also recorded from the Pacific.

World bathymetrical range: 19 m (Clark and Downey 1992) to 600 m (BioFar 1)

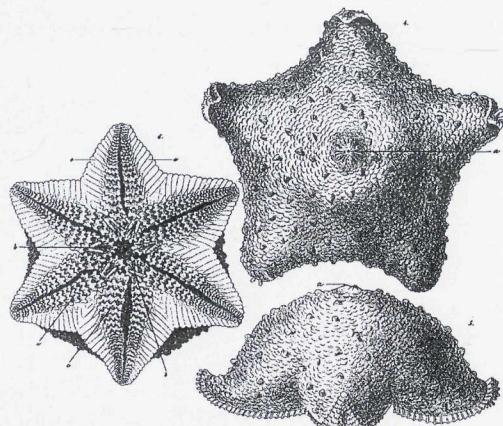
Remarks: This is the first record of the species in the Faroes.

### *Pteraster pulvillus* M. Sars, 1861 (Fig. 5)

Reference to best descriptions of the species:

Mortensen (1927: 103, Key); Clark and Downey (1992: 334-335, Pl. 81d,e)

BioFar stations: 33 (1), 68 (1), 100 (1), 120 (1), 122 (1), 132 (1), 234 (1), 333 (1), 341 (1), 397 (1), 421



**Fig. 5. *Pteraster pulvillus* (M. Sars), diameter up to 40 mm (M. Sars 1861).**

**Mynd 5. *Pteraster pulvillus* M. Sars, tvørmát upp í 40 mm (Úr M. Sars 1861).**

(7), 482 (1), 483 (2), 523 (1), 727 (1), 738 (1), 9018 (2)

Other records: Rockall Bank (Gage *et al.*, 1985); south-west of the Hebrides (Harvey *et al.*, 1988)

Bathymetrical range within the area: 210 - 749 m

Substrate: clay, sand, gravel, stones

Temperature: 0.9° - 2.6°C (measured); estimated: 1.0° - 8.5°C

Water mass: AW, AW/AI, AI, AI/NW

World distribution: Circumboreal: In the West Atlantic south to east of Cape Cod, c. 42°N; in the East Atlantic along the coast of southern Norway, the Faroes south to west of Galway in Ireland; also in the Pacific and the Bering Sea.

World bathymetrical range: 36 - 3,700 m.

Remarks: This is the first record of the species in the Faroes.

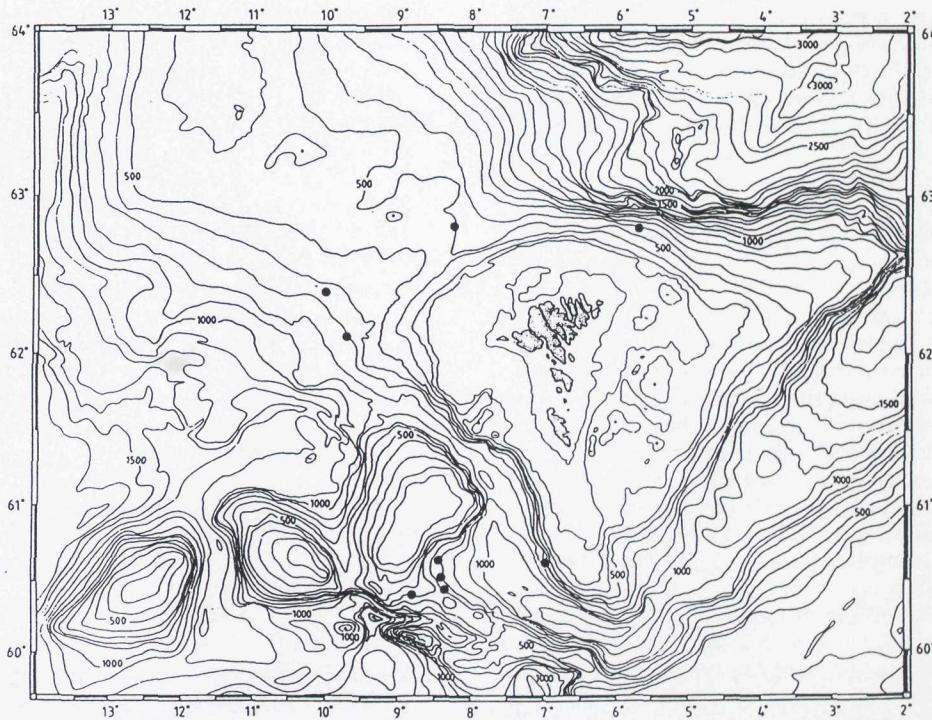
## Family KORETHRASTERIDAE

### Genus *Korethraster* Thomson, 1873

#### *Korethraster hispidus* W. Thomson, 1873

(Map 9)

Synonyms: *Corethraster hispinus* [sic] von Marenzeller 1877; *Korethraster setosus* Perrier 1882



*Map 9. Records of Korethraster hispidus W. Thomson in the Faroe region.*

**Kort 9.** Skrásetingar av *Korethraster hispidus* W. Thomson í fóroyskum øki.

Reference to best description of the species:

Mortensen (1927: 110, Fig. 65); Clark and Downey (1992: 341-342, Pl. 84a, b)

BioFar stations: 80 (1), 82 (1), 269 (1), 341 (1), 497 (1), 500 (1), 728 (5), 739 (1), 750 (1)

Other records: Faroe-Shetland Channel (Bell 1892)

Bathymetrical range within the area: 398 - 732 m

Substrate: mud, sand, gravel, rock

Temperature: -0.1° - +2.6°C (measured); estimated: -0.1° - +8.3°C

Water mass: AW, AW/AI, AI, AI/NW, NW

World distribution: Northern boreal: the Norwegian

Sea east to Franz Josef's Land and south to the Bay of Biscay, c. 43°N, the Faroe-Shetland Channel.

World bathymetrical range: 85 - 1,150 m.

## Family ECHINASTERIDAE

### Genus *Henricia* Gray, 1840

#### *Henricia perforata*-group

Reference to best description of the species: Madsen (1987)

BioFar stations: 43 (12), 44 (2), 45 (1), 47 (1), 49 (2), 76 (1), 77 (1), 89 (1), 90 (1), 97 (1), 117 (1), 118 (5), 120 (1), 124 (1), 156 (1), 163 (1), 172 (1), 189 (1), 233 (1), 234 (2), 269 (1), 279 (1), 285 (1), 286 (1), 297 (1), 298 (1), 299 (1), 328 (1), 333 (1), 334 (2), 344 (1), 354 (2), 357 (1), 371 (1), 382 (2), 401 (1), 420 (1), 422 (1), 427 (1), 451 (1), 453 (1), 474 (1), 475 (2), 476 (7), 482 (1), 484 (2), 496 (1), 498 (1), 503 (1), 530 (2), 531 (1), 534 (1), 540 (3), 562 (1), 597 (1), 602 (2), 604 (1), 621 (1), 698 (1), 716 (1), 717 (1), 725 (2), 727 (1), 747 (2), 749 (1), 750 (1), 760 (1), 762 (1), 765 (1), 781 (1)

BioFar 2 stations: 1190 (1)

Other records: The *H. perforata*-group probably contains the three species: *H. perforata*, *H. eschrichti* and *H. oculata* (Ringvold 1996). The species *H. perforata* is, according to Madsen (1987), common in the Faroes.

Bathymetrical range within the area: 80 - 923 m  
(mainly: 80 - 650 m)

Substrate: clay, sand, shell-sand, gravel, stones

Temperature: 0.3° - 4.2 °C (measured); estimated: 0 - 9.1 °C

Water mass: AW, AW/AI, AI, AI/NW

World distribution: *H. perforata* has a wide Atlantic boreo-arctic distribution. It is the most common *Henricia* species in Scandinavia and is found east to Øresund. The species is also common in the Faroes, Iceland, Greenland, Svalbard and along the northern Russian coast east to the East Siberian Sea. On the East American coast the species is found from Labrador to Hudson Bay.

World bathymetrical range: 2 - 1,200 m (Madsen 1987)

Remarks: The genus *Henricia* is rather polymorphic and thus it is difficult to determine the species (see Madsen 1987, Ringvold 1996 for electrophoretic studies).

### *Henricia pertusa*-group

Reference to best description of the species: Madsen (1987)

BioFar stations: 15 (3), 19 (1), 43 (12), 44 (7), 45 (4), 46 (2), 47 (4), 48 (1), 49 (2), 56 (1), 68 (1), 69 (3), 70 (3), 71 (5), 80 (4), 82 (3), 88 (2), 89 (1), 90 (4), 95 (1), 97 (9), 100 (1), 105 (2), 107 (1), 111 (1), 113 (1), 115 (1), 117 (3), 118 (10), 119 (1), 120 (4), 122 (2), 149 (3), 153 (1), 156 (2), 172 (5), 189 (1), 230 (2), 232 (2), 234 (6), 263 (1), 267 (2), 268 (1), 269 (1), 279 (9), 283 (1), 285 (2), 286 (1), 290 (1), 292 (6), 297 (4), 302 (1), 303 (1), 307 (3), 309 (1), 315 (3), 317 (3), 328 (1), 329 (2), 331 (1), 332 (1), 333 (3), 334 (5), 335 (4), 341 (4), 343 (1), 344 (2), 345 (1), 346 (2), 349 (1), 353 (1), 354 (6), 364 (1), 370 (7), 371 (2), 372 (3), 390 (1), 401 (5), 418 (2), 419 (2), 420 (6), 421 (6), 423 (1), 424 (3), 425 (6), 427 (2), 447 (1), 451 (4), 453 (3), 454 (2), 458 (1), 468 (1), 469 (1), 471 (1), 472 (1), 474 (15), 475 (2), 476 (8), 477 (1), 482 (5), 483 (3), 484 (3), 486 (1), 492 (1), 495 (4), 497 (2), 498 (1), 499 (7), 500 (2), 504 (1), 506 (3), 509 (2), 515 (3), 524 (1),

527 (1), 533 (1), 536 (1), 538 (1), 540 (4), 542 (1), 544 (1), 586 (1), 589 (2), 593 (1), 597 (1), 605 (2), 606 (8), 607 (1), 608 (1), 609 (1), 621 (1), 698 (5), 699 (3), 700 (1), 705 (1), 717 (2), 718 (1), 724 (1), 726 (2), 727 (5), 728 (13), 730 (1), 731 (3), 732 (2), 734 (5), 737 (5), 738 (6), 739 (2), 742 (8), 743 (1), 744 (1), 746 (3), 747 (2), 749 (2), 750 (13), 751 (1), 752 (2), 756 (1), 760 (2), 765 (2), 766 (1), 767 (1), 769 (1), 778 (2), 781 (3), 9018 (9)

BioFar 2 stations: 1030 (2), 1036 (1), 1190 (1)

Other records: *H. pertusa*-group contains the species *H. pertusa*, *H. sanguinolenta*, *H. heddingi*, *H. spongiosa*, *H. cylindrella* and *H. lisa ingolfi* (Madsen 1987, Ringvold 1996); *H. sanguinolenta* is found in the Faroe-Shetland Channel (Bell 1892) and it is common around the Faroes (Lieberkind 1929, Madsen 1987).

Bathymetrical range within the area: 21 - 1,150 m

Substrate: clay, sand, shell-sand, gravel, stones

Temperature: -0.6° - +3.5°C (measured); estimated: -0.9° - +8.7°C

Water mass: AW, AW/AI, AI, AI/NW, NW

World distribution: According to Madsen (1987), *H. sanguinolenta* is common along the Norwegian coast from Skagerrak to North Cape, the northern part of the Norwegian Sea and the Barents Sea north to Svalbard, Iceland and the Faroes.

D'yakonov (1950) reports the species also from the Southwestern Barents Sea east to the Kolafjord, Motovskii Bay and north of Kildin Island. In the W. Atlantic the species is found from Massachusetts to Fundy Bay (Madsen 1987).

World bathymetrical range: 30 - 1,400 m (Madsen 1987 for *H. sanguinolenta*)

Remarks: The *H. pertusa*-group was the most common of all the asteroid species found during BioFar as it was found on 166 of a total of 316 stations containing asteroids (53%).

### Family ZOROASTERIDAE

Genus *Zoroaster* Thomson, 1873

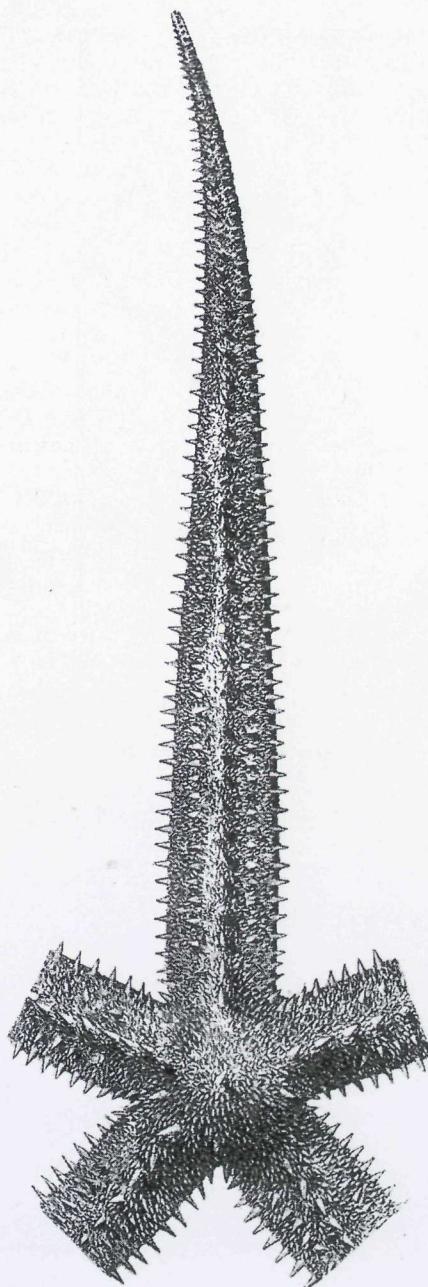
***Zoroaster fulgens*** W. Thomson, 1873

(Fig. 6, Map 10)

Synonyms: *Zoroaster ackleyi* Perrier 1880; *Prognaster grimaldii* Perrier 1891

Reference to best descriptions of the species:

Mortensen (1927: 132-133, Fig. 75); Clark and



**Fig. 6.** *Zoroaster fulgens* W. Thomson, diameter up to 160 mm (Murray and Hjort 1912).

**Mynd 6.** *Zoroaster fulgens* W. Thomson, tvørmát upp i 160 mm (Úr Murray og Hjort 1912).

Downey (1992: 403-404, Pl. 96g-h)

BioFar stations: 516 (10)

Other records: Faroe-Shetland Channel (Bell 1892); south of Faroe-Shetland Channel (Murray and Hjort 1912)

Bathymetrical range within the area: 914 m

Substrate: gravel

Temperature: 6.7°C (measured)

Water mass: AW/AI

World distribution: Atlantic Ocean.

World bathymetrical range: 220 – 3,000 m.

Remarks: The specimens were found NE of Lousy Bank.

### Family NEOMORPHASTERIDAE

#### Genus *Neomorphaster* Sladen, 1885

***Neomorphaster margaritaceus*** (Perrier, 1882) (Map 10)

Synonyms: *Pedicellaster margaritaceus* Perrier 1882; *Neomorphaster talismani* Perrier 1894; *Gastraster margaritaceus* Perrier 1894

Reference to best description of the species:

Mortensen (1927: 134-135, Fig. 76, as *N. talismani* Perrier); Clark and Downey (1992: 406, Pl. 99a-d)

BioFar stations: 303 (1), 515 (1)

Bathymetrical range within the area: 700 m

Substrate: hard bottom, sand, gravel

Temperature: 7.0° - 7.9°C (estimated)

Water mass: AW

World distribution: Morocco, the Azores, west of the Hebrides, south and west of Ireland (Bell 1892), the Rockall Trough (Clark and Downey 1992).

World bathymetrical range: 400 – 5,410 m.

Remarks: This is the first record of the species so far north as the Faroes. The individuals were small ( $R=25$  mm).

### Family PEDICELLASTERIDAE

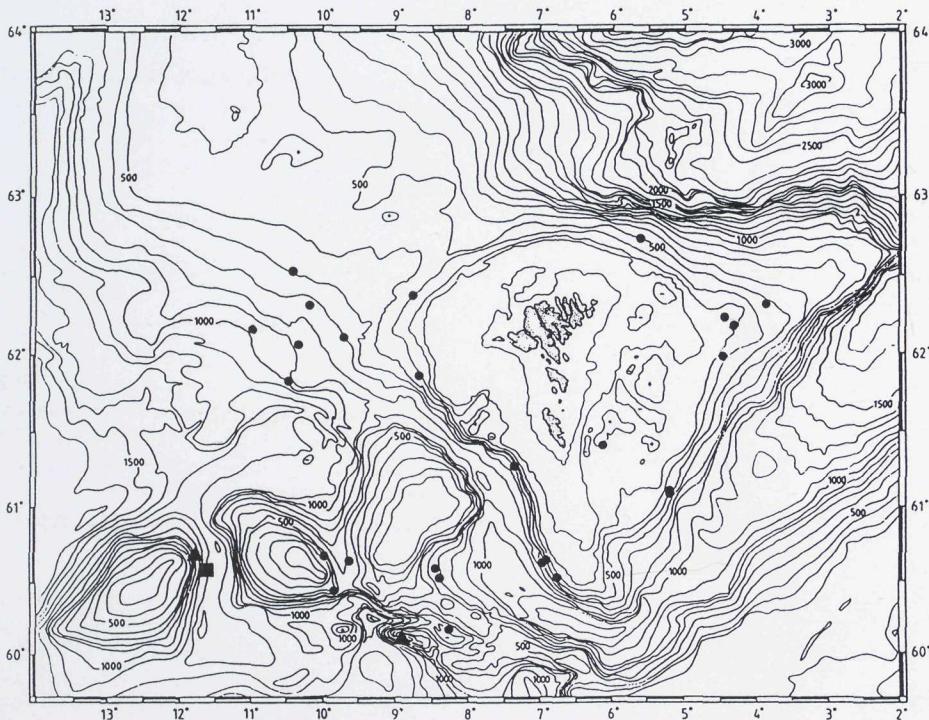
#### Genus *Pedicellaster* M. Sars, 1861

***Pedicellaster typicus*** M. Sars, 1861

(Map 10)

Synonym: *Asteracanthion paleocrystallus* Duncan and Sladen 1877

Reference to best description of the species: Clark and Downey (1992: 411-412, Fig. 62e, f, Pl. 98c)



**Map 10.** Records of *Neomorphaster margaritaceus* (Perrier) (▲), *Pedicellaster typicus* M. Sars (●), and *Zoroaster fulgens* W. Thomson (■) in the Faroe region.

**Kort 10.** Skrásetingar av *Neomorphaster margaritaceus* (Perrier) (▲), *Pedicellaster typicus* M. Sars (●) og *Zoroaster fulgens* W. Thomson (■) í fóroyeskum øki.

BioFar stations: 51 (1), 82 (3), 89 (2), 115 (2), 172 (1),  
299 (1), 307 (1), 335 (1), 341 (2), 382 (1), 411 (1),  
421 (1), 483 (2), 495 (1), 499 (3), 589 (1), 647 (1),  
717 (1), 727 (1), 728 (4), 737 (1), 738 (1), 744 (1),  
763 (2), 765 (2), 9018 (1)

Other records: Rockall Trough (54°17'N, 11°34'W)  
(Mortensen 1927).

Bathymetrical range within the area: 235 – 1,022 m  
Substrate: sand, gravel, stones

Temperature: -0.1° - +4.2°C (measured); estimated:  
-0.1° - +8.4°C

Water mass: AI, AW/AI, AI, AI/NW, NW

World distribution: Arctic, in the Western Atlantic  
south to c. 40°N, in the East Atlantic to c. 60°N  
(close to Bergen in Norway).

World bathymetrical range: 20 – 1,130 m (Mortensen  
1927)

Remarks: The species is new to the Faroes.

## Family ASTERIDAE

### Genus *Asterias* Linnaeus, 1758

#### *Asterias rubens* Linné, 1758 (Map 11)

Synonyms: *Asterias glacialis* Pennant 1777; *Uraster rubens* Forbes 1841; *Asterias vulgaris* Packard 1863; *A. crassipina* H. L. Clark 1941

Reference to best description of the species:

Mortensen (1927: 139-141, Fig. 79); Clark and Downey (1992: 422-423, Pl. 100 C, D)

BioFar stations: 3 (2), 76 (1), 77 (3), 176 (3), 192 (5),  
204 (1), 325 (1), 350 (1), 351 (4), 355 (3), 357 (2),  
363 (5), 368 (13), 371 (3), 372 (3), 456 (2), 512  
(1), 544 (2), 600 (2), 602 (1), 781 (1)

BioFar 2 stations: 1003 (1), 1006 (1), 1011 (1), 1040  
(3), 1119 (1), 1122 (3), 1144 (2), 1145 (3), 1146  
(2)

Other records: Distributed commonly all around the Faroes, specially in the fjords and bays (Lieberkind 1929).

Bathymetrical range within the area: 21-205 m, mainly between 50 and 150 m

Substrate: mud, sand and shells, stone

Temperature: 7.6° - 9.1°C (estimated)

Water mass: AW

World distribution: Circumboreal (D'yakonov 1950):

W. Atlantic: Labrador south to the Carolinas (rarely to Florida); E. Atlantic: From the Arctic south to Portugal (Clark and Downey 1992); Senegal (Mortensen 1927). The species is also found near Godthaab, Greenland (Lieberkind 1935).

World bathymetrical range: 0-900 m (in deeper water south of Cape Cod)

### Genus *Leptasterias* Verrill, 1866

#### *Leptasterias mülleri* (M. Sars, 1846)

(Map 12)

Synonyms: *Asteracanthion mülleri* M. Sars 1846;

*Leptasterias danica* Levinsen 1886

Reference to best description of the species:

Mortensen (1927: 141-143, Fig. 80)

BioFar stations: 3 (3), 90 (2), 111 (6), 287 (2), 370 (13), 381 (5), 411 (1), 483 (1), 717 (1), 727 (1), 781 (5)

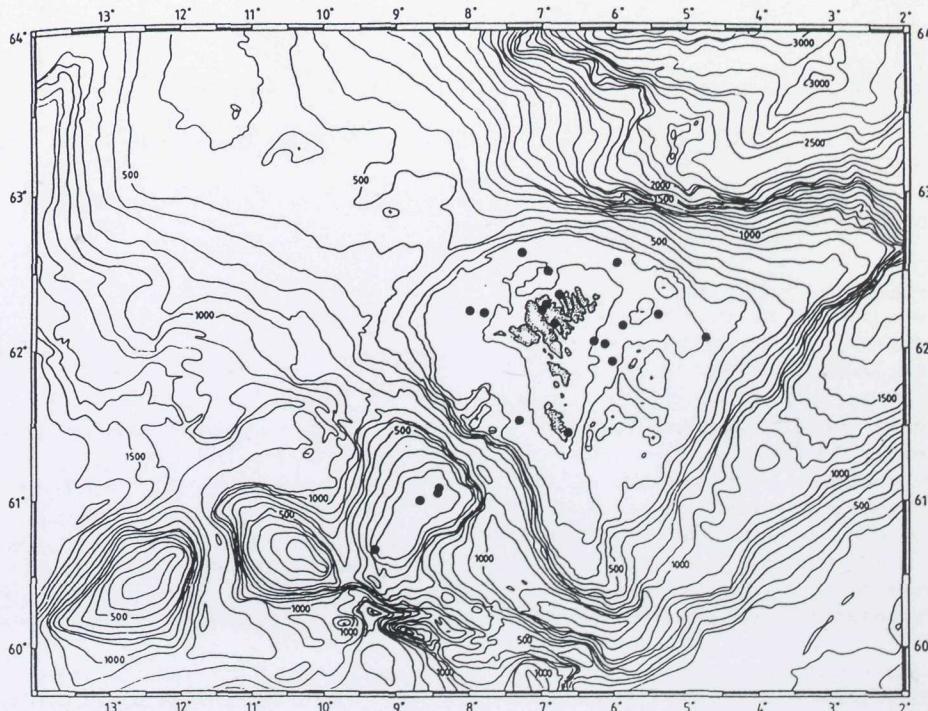
BioFar 2 stations: 1030 (2), 1031 (2), 1037 (1), 1038 (1), 1190 (1)

Other records: Faroe-Shetland Channel (Bell 1892); Common all around the Faroes from the littoral zone down to a 150 m depth (Lieberkind 1929).

Bathymetrical range within the area: 50 - 500 m

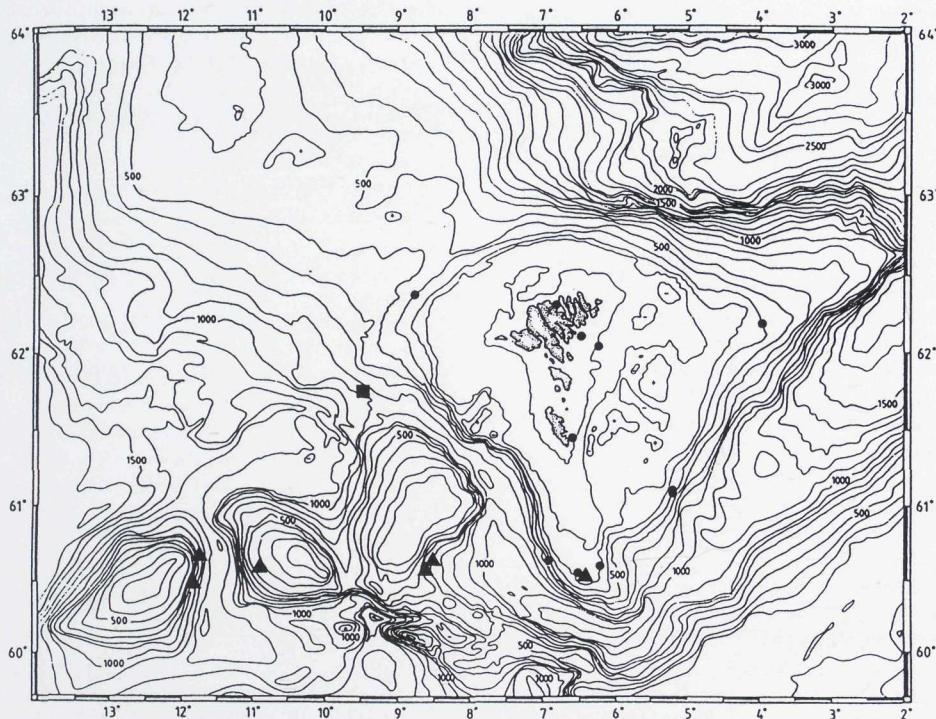
Substrate: shell-sand, gravel, stones

Temperature: 2.8° - 6.5°C (measured); estimated: 2.8° - 8.2°C



Map 11. Records of *Asterias rubens* L. in the Faroe region.

Kort 11. Skrásetingar av *Asterias rubens* L. í fóroyiskum øki.



*Map 12. Records of *Leptasterias mülleri* (M. Sars) (●), *Stephanasterias albula* (Stimpson) (■), and *Stichastrella rosea* (O.F. Müller) (▲) in the Faroe region.*

**Kort 12.** Skrásetingar av *Leptasterias mülleri* (M. Sars) (●), *Stephanasterias albula* (Stimpson) (■) og *Stichastrella rosea* (O.F. Müller) (▲) í føroyeskum øki.

Water mass: AW, AW/AI, AI

World distribution: Kjelvik in Finnmark south to Østervågen in Hordaland (Halldis Ringvold pers. obs.), Øresund, probably also at the Doggerbank in the North Sea, the Murman Coast (Clark and Downey 1992). The species is also reported southwest of Ireland and is probably common all around the British Isles except the south coast, Svalbard, Siberian Sea, Iceland and Greenland; on the northeast American side south to 44 N and probably also in the Bering Sea.

World bathymetrical range: 0 to c. 800 m (Mortensen 1927)

Remarks: In the genus *Leptasterias*, like the genus *Henricia*, there are large taxonomical problems to be solved.

#### Genus *Stephanasterias* Verrill, 1866

##### *Stephanasterias albula* (Stimpson, 1853) (Map 12)

Synonyms: *Asteracanthion albulus* Stimpson 1853;  
*Stichaster albulus* Verrill 1866

Reference to best description of the species: Clark and Downey (1992: 454-455, Pl. 103c, d)

BioFar stations: 699 (1)

Bathymetrical range within the area: 864 m

Substrate: stones

Temperature: 0°C (measured)

Water mass: AI/NW

World distribution: Circumboreal: In the West Atlantic south to the Caribbean; in the East Atlantic in the Faroes; in the Pacific from the Bering Sea south to the Sea of Japan, South Alaska.

World bathymetrical range: 33 – 2,300 m.

Remarks: This is the first record of the species from the eastern Atlantic. The specimen was small, R=25 mm.

### Genus *Stichastrella* Verrill, 1914

#### *Stichastrella rosea* (O.F. Müller, 1776)

(Map 12)

Synonym: *Asterias rosacea* O.F. Müller 1776

Reference to best description of the species:

Mortensen (1927: 136, Fig. 77); Clark and Downey (1992: 456-457, Pl. 103e, f)

BioFar stations: 90 (2), 319 (1), 505 (2), 507 (1), 515 (1), 526 (1)

Other records: Rockall Trough (Gage *et al.*, 1985); SW of Ireland (Bell 1892)

Bathymetrical range within the area: 252 - 700 m

Substrate: sand, gravel, stones

Temperature: 7.9° - 8.6°C (measured)

Water mass: AW

World distribution: From Ingøy in Finnmark (Halldis Ringvold pers. obs.) south to southern Norway, west to NE England and Scotland, the Faroes and west of the British Isles, Rockall Bank and south to the Bay of Biscay.

World bathymetrical range: 4 m (Clark and Downey 1992); to 700 m (BioFar)

Remarks: The species is new to the Faroes. Farran (1913) described a variety *S. rosea* var. *ambigua* with more stout, tapering arms than the nominal form. The variety is also recorded deeper than *S. rosea rosea*. Mortensen (1927) is of the opinion that the two varieties are synonyms while Clark (Clark and Downey 1992) raises *ambigua* to specific rank and gives a record of *S. ambigua* from the SW of the Faroe Islands. The specimens recorded during BioFar had the appearance of a typical *S. rosea*.

### Family BRISINGIDAE

#### Genus *Brisinga* Asbjørnsen, 1856

#### *Brisinga endecacnemos* Asbjørnsen, 1856

Reference to best description of the species:

Mortensen (1927: 125-125, Fig. 73)

BioFar stations: 297 (1), 515 (1)

Other records: Between Shetland and the Faroes (Bell 1892); Faroe-Shetland Ridge (Mortensen 1927); south of the Faroe-Shetland Ridge (Murray and Hjort 1912); Porcupine Seabight (Farran 1913)

Bathymetrical range within the area: 656 - 700 m

Substrate: sand, gravel

Temperature: 2.0° - 7.9 °C (estimated)

Water mass: AW, AW/AI, AI

World distribution: The Trondheim Fjord south to Cape Verde (Mortensen 1927)

World bathymetrical range: 183 – 2,220 m (Clark and Downey 1992).

### Genus *Novodinia* Dartnell, Pawson, Pope and Smith, 1969

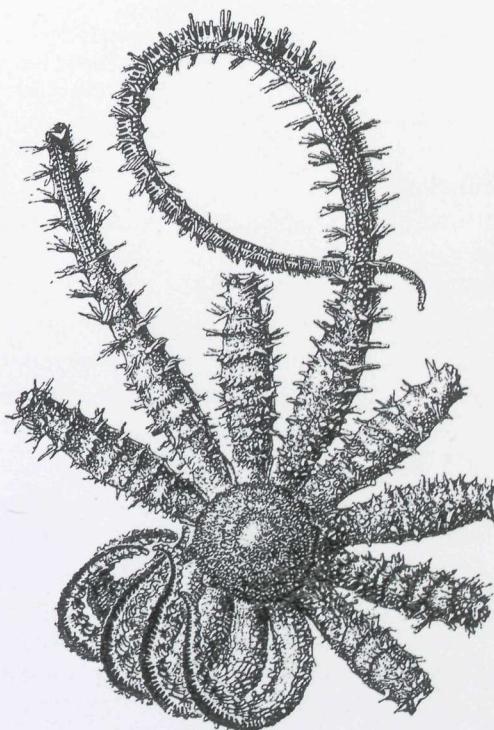


Fig. 7. *Novodinia pandina* (Sladen), diameter up to 460 mm (Mortensen 1927).

Mynd 7. *Novodinia pandina* (Sladen), tvørmát upp í 460 mm (Úr Mortensen 1927).

***Novodinia cf. pandina* (Sladen, 1889)**

(Fig. 7)

Synonym: *Odinia pandina* Sladen 1889

Reference to best description of the species:

Mortensen (1927: 124-125, Fig. 72); Clark and Downey (1992: 474-475, Pl. 111a-c)

BioFar stations: 806 (1), 807 (1)

Other records: Faroe Channel by "Lightning" and "Porcupine" (Mortensen 1927)

Bathymetrical range within the area: 352 - 370 m

Substrate: soft bottom

Temperature: 1.1 - 5.5°C (Mortensen 1927)

Water mass: AW/AI, AI, AI/NW

World distribution: North Carolina, off Cuba, Faroe Channel and Hebridean Slope (Clark and Downey 1992); Rockall Trough, Iceland-Faroe Ridge

World bathymetrical range: 278 - 990 m

Remarks: The distribution of *N. pandina* and *N. semicoronata* is overlapping in the North Atlantic, but *N. semicoronata* is also found in South Greenland and in the Denmark Strait.**Conclusions**

A total of 2,287 specimens spread over 42 species, 32 genera and 16 families were found at 40% of the BioFar stations (316 stations with 790 deployments of sampling gear). The number of species includes species and species groups from the genera *Odontaster* and *Henricia*.

Of the 42 species found, 30 are not recorded in *Zoology of the Faroes* by Lieberkind (1929). However, 20 of them are recorded from deep water near the Faroe Islands by Sladen (1883), Bell (1892), Murray and Hjort (1912), Mortensen (1924), Madsen (1987), and Clark and Downey (1992):

Species	Sladen, 1883	Bell, 1892	Murray and Hjort, 1912	Mortensen, 1924; 1927	Madsen, 1987	Clark and Cowney, 1992
Bathybiaster vexillifer			X			
Brisinga endecacnemos	X	X	X			
Ceramaster granularis	X	X				
Chondraster grandis						X
Crossaster squamatus			X			
Diploptaster multipes			X			
Henricia perforata-						
gruppen					X	
Hymenaster pellucidus	X	X	X			
Korethraster hispidus	X			X		
Leptychaster arcticus	X					
Lophaster furcifer	X			X		
Luidia ciliaris			X			
Novodinia pandina	X				X	
Plutonaster bifrons	X	X	X			
Pontaster tenuispinus	X	X				
Poraniomorpha bidens						X
Poraniomorpha borealis						X
Poraniomorpha hispida	X			X		
Pseudarchaster parelli		X				
Psilaster andromeda	X	X				X
Pteraster militaris					X	
Zoroaster fulgens	X	X	X			

*Neomorphaster margaritaceus*, *Novodinia cf. pandina*, *Odontaster* sp., *Pedicellaster typicus*, *Pseudarchaster gracilis*, *Pteraster (Apterodon)* sp. aff. *Pteraster acicula*, *Pteraster obscurus*, *Pteraster pulvillus*, *Stephanasterias albula*, *Stichastrella rosea* and *Tremaster mirabilis* are for the first time recorded in the Faroe Islands.

Many of the species seem to tolerate a wide range in bottom temperature, as 15 species are distributed in all the main categories of water masses. Ten species are found only in Atlantic Water and two species only in Norwegian Sea water. One of the species, *Luidia ciliaris*, are found only at the Faroe Bank, while 31 species are

**Table 1.** Overview of all species of Echinodermata, Asteroidea recorded from the Faroese fishery territory, with preferences to temperature, water masses and depth range.

(AW = Atlantic water; AI = Arctic intermediate water; NW = bottom water of the Norwegian Sea; AW/AI and AI/NW = mixtures of water masses)

**Talva 1.** Yvirlit yvir øll slögjini av Echinodermata, Asteroidea, sum eru skrásett á føroyiskum fiskileiðum, við serligum atliti til hita, vatnsmassa (slag av sjógví) og dýpi.

(AW = Atlantsjógvur; AI = arktiskur millumsjógvur; NW= botnsjógvur úr norska havinum; AW/AI og AI/NW = blendingssjógvur)

Family/Species		Temperature °C Measured      Estimated		Water Masses					Depth (m)	Pref. Depth (m)
Luidiidae										
Luidia	ciliaris	9.1		AW					98	
Luidia	sarsi		6.2-8.2	AW	AW/AI				103-358	
Astropectinidae										
Astropecten	irregularis	6.6-7.9	3.2 - 9.1	AW	AW/AI				32-703	32 - 350
Bathybiaster	vexillifer	-0.9- -0.7	-0.9 - 0.6						700-2,199	
Leptychaster	arcticus	0.3-7.9	0 - 8.6	AW	AW/AI	AI	AI/NW		160-1,319	160 - 750
Plutonaster	bifrons		6.7 - 6.8		AW/AI				445-1,006	
Psilaster	andromeda	2.0-8.6		AW	AW/AI	AI			405-986	
Benthopectinidae										
Pontaster	tenuispinus	-0.95 - 7.9	-0.9 - 8.6	AW	AW/AI	AI	AI/NW	NW	200-1,500	
Odontasteridae										
Odonaster	mediterraneus	2.6	3.1 - 8.2	AW	AW/AI	AI			597-700	
Asterinidae										
Tremaster	mirabilis	6.2			AW/AI				450	
Poraniidae										
Chondraster	grandis	1.3-7.5		AW	AW/AI	AI	AI/NW		358-1,319	
Porania	pulvillus		7.0 - 8.3	AW					252-600	
Poraniomorpha	bidens	-0.86							1,030-1,500	
Poraniomorpha	tumida	-1.1 - 1.0	-0.84 - 7.1		AW/AI	AI	AI/NW	NW	246-1,096	
Poraniomorpha	hispida	2.6	2.5 - 8.2	AW	AW/AI	AI			241-749	
Poraniomorpha	borealis	7.1-8.0		AW					311-650	
Goniasteridae										
Ceramaster	granularis	0.9-2.7	0.9 - 8.0	AW	AW/AI	AI	AI/NW		246-1,157	250-750
Hippasteria	phrygiana		2.9 - 9.1	AW	AW/AI	AI			70-1,006	70-550
Pseudarchaster	gracilis		8.5	AW					606	
Pseudarchaster	parelia	0.3-7.9	0.3 - 8.6	AW	AW/AI	AI	AI/NW		170-1,083	
Solasteridae										
Crossaster	papposus		7.9 - 9.1	AW					77-171	
Crossaster	squamatus	-0.1 - 2.0	-0.9 - 7.8	AW	AW/AI	AI	AI/NW	NW	72-1,150	
Lophaster	furcifer	2,0	-0.6 - 8.2	AW	AW/AI	AI	AI/NW	NW	364-703	
Solaster	endeca		7.8 - 8.2	AW					80-103	
Pterasteridae										
Diplopteraster	multipes		7.5	AW					231	
Hymenaster	pellucidus	-0.8 - 2.0	-0.8 - 7.5	AW	AW/AI	AI	AI/NW	NW	225-1,114	450-750
Pteraster	acicula	0.3-4.2	-0.6 - 8.6	AW	AW/AI	AI	AI/NW	NW	271-1,022	
Pteraster	militaris	-0.7 - 2.6	-0.65 - 8.5	AW	AW/AI	AI	AI/NW	NW	191-1,006	
Pteraster	obscurus	1.0	0 - 5.7		AW/AI	AI	AI/NW		459-600	
Pteraster	pulvillus	0.9-2.6	1.0 - 8.5	AW	AW/AI	AI	AI/NW		210-749	
Korethrasteridae										
Korethraster	hispidus	-0.1 - 2.6	-0.1 - 8.3	AW	AW/AI	AI	AI/NW	NW	398-732	



→ Family/Species		Temperature °C Measured      Estimated		Water Masses					Depth (m)	Pref. Depth (m)
Echinasteridae										
Henricia	perfotata	0.3-4.2	0 - 9.1	AW	AW/AI	AI	AI/NW	NW	80-923	80-650
Henricia	pertusa	-0.6 - 3.5	-0.9 - 8.7	AW	AW/AI	AI	AI/NW	NW	21-1,150	
Zoroasteridae										
Zoroaster	fulgens	6.7			AW/AI				914	
Neomorphasteridae										
Neomorphaster	marginatus		7.0 - 7.9	AW					700	
Pedicellasteridae										
Pedicellaster	typicus	-0.1 - 4.2	-0.1 - 8.4	AW	AW/AI	AI	AI/NW	NW	235-1,022	
Asteridae										
Asterias	rubens		7.6 - 9.1	AW					21-205	50-150
Leptasterias	mulleri	2.8-6.5	2.8 - 8.2	AW	AW/AI	AI			50-500	
Stephanasterias	albula						AI/NW		864	
Stichastrella	rosea	7.9-8.6		AW					252-700	
Brisingidae										
Brisinga	endecacnemos		2.0 - 7.9	AW	AW/AI	AI			656-700	
Novodinia	pandida	1.1 - 5.5	1.1 - 5.5	AW/AI	AI	AI/NW			790-900	

found on the Faroe Plateau and on the slope down to a 1,000 m depth, 14 of them preferring a slope depth between 300 and 1,000 m.

A summary of the records of the species is given in Table 1.

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