

THE UNIVERSITY OF NEWCASTLE UPON TYNE



The Marine Fauna of the Cullercoats District

PORIFERA

by

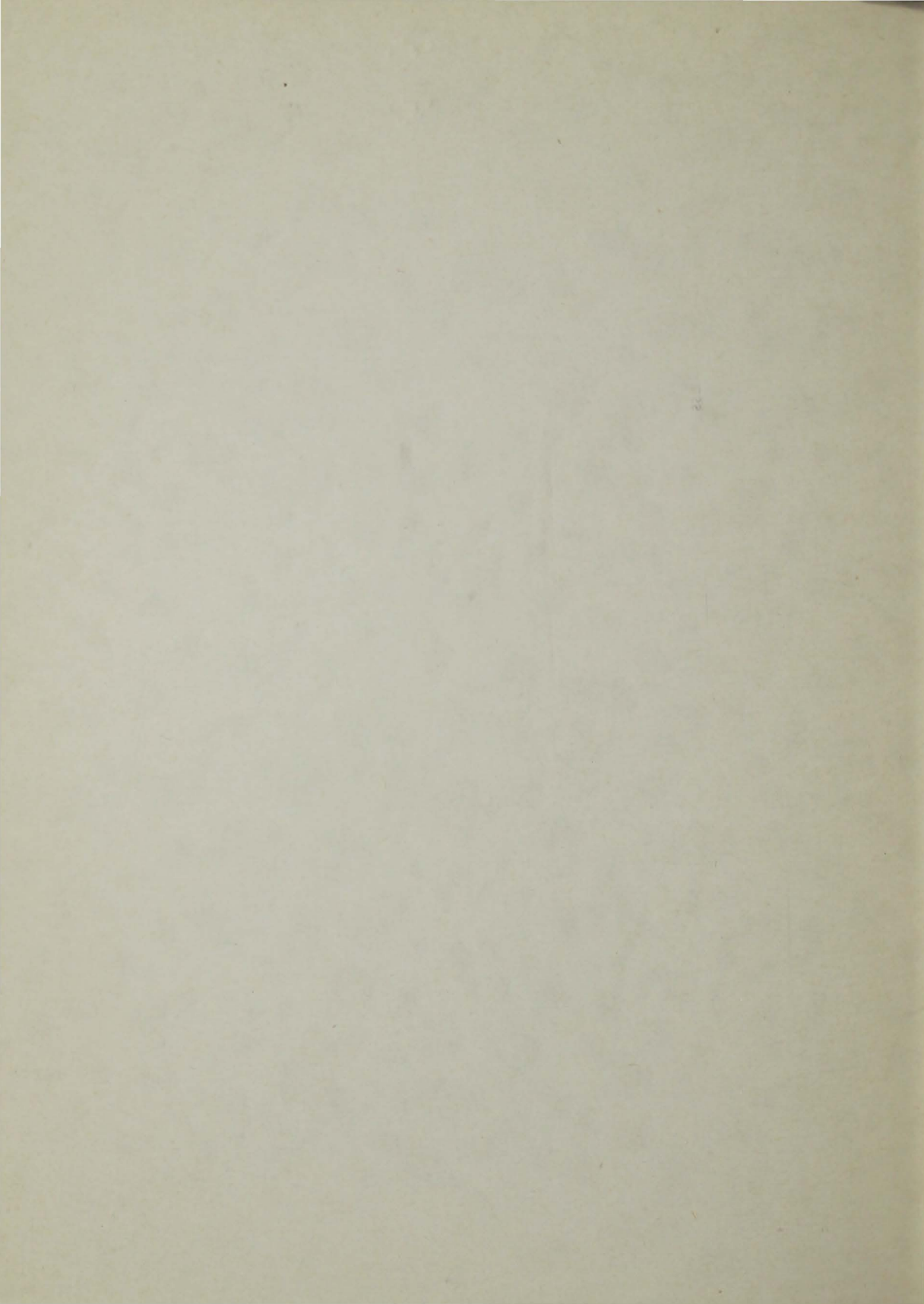
H. O. BULL

Report of the Dove Marine Laboratory

Third Series No. 13

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EDITOR'S FOREWORD

It is intended to devote this and the next succeeding numbers of this Report to the publication (at short intervals) of the records of the marine fauna of the Cullercoats district. These compilations are the work of past or present members of the laboratory staff or of others closely associated with the work of the laboratory. Each number will deal with one or more phyla and will be issued when ready regardless of classificatory sequence. Full uniformity of treatment is unlikely, but the general format will remain the same. The area treated is roughly from Berwick to Redcar—Latitude $55^{\circ}47'N$ to $54^{\circ}37'N$ —extending seawards to $0^{\circ}0'$ Longitude, but it is recognised that the coverage is at present incomplete.

H. O. BULL

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CLASS DEMOSPONGIAE

Order KERATOSA Bowerbank

SPONGIIDAE Gray

Spongionella pulchella (SOWERBY)

de Laubenfels 1948, pp. 89-91, text-fig. 14: Bowerbank 1866, pp. 359-60; 1874, pp. 167-8, pl. 65, figs. 5-8: Arndt 1935, p. 108, fig. 232.

"Hartlepool, J. Hogg. Coast of Berwickshire. G.J." (Johnston 1842, p. 167): "Berwick Bay" (Fyfe 1861, as *Spongia pulchella*): "Northumberland? A. Hancock" (Bowerbank 1866, p. 359); Specimen so labelled is in the Laboratory collection: "Off Durham coasts 20-35 faths." (Norman 1876): "Dredged (By A. M. Norman) off the Durham coast in 35 fathoms of water" (Bowerbank 1882, p. 184): "O-Küste Grossbritanniens: Northumberland and Durham (Bowerbank 1882), Berwick (Fyfe 1861" (Arndt 1935): Whitburn, Mr. Abbs, N.D. Specimen so labelled in Laboratory collection.

Not seen 1928-62 (H.O.B.).

HALISARCIDAE Vosmaer

Halisarca dujardini (JOHNSTON)

de Laubenfels 1948, p. 175: Arndt 1935, pp. 109-110, fig. 234.

"On the under side of stones between tide-marks, and on the stalk and roots of *Laminaria digitata*, common. Berwick Bay: Holy Island, G.J." (Johnston 1842, p. 192): "O-Küste Grossbritanniens: Berwick Bai (Holy Island) (Johnston 1842, Bowerbank 1882)" (Arndt 1935).

Common on clean rocky shores, on the under side of stones between tide-marks, from L.W.N.T. downwards, and on the roots of *Laminaria* throughout the district. Frequently on the carapace and appendages of *Hyas araneus*, both from the shore and from depths of a few metres (H.O.B.).

DYSIDEIDAE Gray

Dysidea fragilis (MONTAGU)

de Laubenfels 1948, pp. 137-42, text-figs. 21, fig. 42: Burton 1934, pp. 582-93, text-figs. 18-33, pl. 2, figs. 5-11: Arndt 1935, pp. 107-8, fig. 231.

Common on the under side of stones and on lower rock faces where bedded in muddy gravel or sand, at L.W.S.T. on rocky shores throughout the district (H.O.B.).

Order HAPLOSCLERINA Topsent

OSCARELLIDAE Lendenfeld

Oscarella lobularis (O. SCHMIDT)

Arndt 1935, p.23, fig.30.

Common on rocky shores : under stones where bedded in gravel L.W.N.T. downwards : 200-400 yards south of St. Mary's, 1928-62 ; Brown's Well, Cullercoats ; Boulmer, Embleton, Newton, 1946-61 : several hundred colonies grew in one of the large public aquarium tanks, March 1946 (H.O.B.).

HALICLONIDAE de Laubenfels

Haliclona oculata (PALLAS)

Arndt 1935, p.100 : Bowerbank 1866, p.361 ; 1874, p.169, pl.66 (as *Chalina oculata*).

" Not uncommon on the Northumberland Coast " (Johnston 1842, as *Halichondria oculata*) : " Coasts of England, abundantly " (Bowerbank 1866, p.361, as *Chalina oculata*) ; " Sides of rock pools between tide-marks to the south of Seaham Harbour, Co. Durham (N.) " (Bowerbank 1882, p.118, as *Isodictya pygmaea*) : " O-Küste Grossbritanniens : Scarborough und Seaham Harbour, Durham (als *Isodictya pygmaea*) (Bowerbank 1866, 1882), Berwick : Holy Island (Fyfe 1861) " (Arndt 1935).

Abundant, L.W.S.T. Blackhall Rocks, Aug. 1934 ; 8 colonies, Blyth, South Harbour, middle jetty, L.W.S.T, Oct. 1946 ; many colonies, some very large, Blyth, South Harbour, middle jetty, L.W.S.T. Oct. 1953 ; many colonies, some very large, Blyth, South Harbour, middle jetty, L.W.S.T. Aug. 1954 ; common at L.W.S.T. throughout the district on stones, piles in harbours, etc., where there is much suspended matter in the water. Occurs occasionally in the aquarium tanks (H.O.B.).

Haliclona limbata (MONTAGU)

Arndt 1935, p.99, fig.213 : Bowerbank 1866, p.373 ; 1874, p.171, 2, pl.67, figs.4,5,6 (as *Chalina gracilentia*), figs.7-13 (as *Chalina limbata*).

" Coast of Northumberland, Rev. A. M. Norman " (Bowerbank 1866, p.372, as *Chalina gracilentia*) ; " sent to me by Mr. Alder, who found it at Cullercoats." (ibid. p.374) : " O-Küste Grossbritanniens :

Scarborough (Northumberland), Cullercoats (Bowerbank 1866), Berwick (Gray 1848, Fyfe 1861) " (Arndt 1935).

Seen regularly, but not commonly, at Cullercoats, St. Mary's, Blyth, Boulmer, Newton, 1930-61 (H.O.B.).

DESMACIDONIDAE Gray

Isodictya palmata (JOHNSTON)

Arndt 1935, p. 72, fig. 144 : Bowerbank 1866, p. 311 ; 1874, p. 133, pl. 52.

" Deep water : on the coast at Holy Island " (Johnston 1832) : " Near Holy Island and some parts of Coast of Berwickshire " (Johnston 1842 ; Fyfe 1861, as *Halichondria palmata*) : " Coast of Northumberland Two fine specimens in the Newcastle museum. " (Bowerbank 1866, p. 311) ; " very large specimens are occasionally brought up attached to the hooks of the long lines set by the fishermen of Holy Island, Northumberland (N.) " (Bowerbank 1882) : " O-Küste Grossbritanniens : Holy Island (Johnston 1832), Holy Island und Berwick (Fyfe 1861, Gray 1848) " (Arndt 1935).

None seen 1928-62. (H.O.B.).

Desmacidon cylindraceus (BOWERBANK)

Arndt 1935, p. 73, fig. 145 : Bowerbank 1882, pp. 96-8, pl. 6, figs. 4-8 (as *Halichondria cylindraceus*).

" Durham Coast 20 to 35 fathoms ; Rev. A. M. Norman " (Bowerbank 1882, p. 97) : " O-Küste Englands : Durham (Bowerbank 1882) ; sonst nicht bekannt geworden " (Arndt 1935).

Order POECILOSCLERINA Topsent

PHORBASIDAE de Laubenfels

Anchinoë fictitius (BOWERBANK) GRAY*

Stephens 1921, p. 45, pl. 1, fig. 1, pl. 6, fig. 1.

" Off coasts of Durham " (Norman 1876, as *Microciona fictitia* Bowerbank).

* Vosmaer 1933-5 regards this as *Hymedesmia plumosa* (Montagu). See Stephens 1921 and Alander 1942 for discussion.

Adocia cinerea (GRANT)*

Arndt 1935,p.93,fig.200 : Bowerbank 1866,p.308 ; 1874,p.131,pl.51,figs.5,6
(as *Isodictya simulans*).

Form *typica*.

" O-Küste Grossbritanniens : Scarborough" (Arndt 1935).

Common L.W.S.T. Boulmer, Apr. 1946, Mar. 1952 : common from L.W.N.T. downwards in all the rocky shore collecting areas, where there is also some mud, 1930-63 (H.O.B.).

Form *montagui* = *dichotoma*

One large colony, L.W.S.T. Boulmer, Apr. 1946 (H.O.B.).

Adocia rosea (BOWERBANK)

Arndt 1935,p.95 : Bowerbank 1866,pp.282-3 ; 1874,pl.49,figs.15-17.

On *Hyas araneus*, L.W.S.T. 24 Oct. 1938. The carapace was completely covered and there were patches on the legs (H.O.B.); Marsden Bay, L.W.S.T. 17 Jul. 1939, common. Patches mostly lilac-rose in colour when alive (H.O.B.).

Adocia macandrewi (BOWERBANK)

Arndt 1935,p.95 : Bowerbank 1866,p.284 ; 1874,pl.49,figs.9-11.

Many large and fine colonies grew with remarkable rapidity in the laboratory research aquarium tanks during Nov. 1940. Several patches reached an area of 200 sq. cms. Some small colonies grew in tank No. 35 during Aug. 1954 (H.O.B.).

MYXILLIDAE Hentschel

Jophon spinulentum (BOWERBANK)

Arndt 1935,p.63,fig.120 : Bowerbank 1866,pp.32-3 ; 1874,pl.24,figs.1-6
(as *Microciona spinulentum*).

Completely covering externally both valves of a living *Chlamys opercularis* trawled Lat.55°05'N, Long.0°10'W, 24 Mar. 1939 (H.O.B.).

* See also Burton 1934,p.534 ; de Laubenfels 1936,p.66 ; and Alander 1942,

Myxilla rosacea (LIEBERKÜHN)

Arndt 1935,p.59,fig.106 : Topsent 1936a,pp.21-3.

Some good colonies (50 sq. cms.) at base of vertical edges of the whinstone L.W.S.T. extreme N.W. edge of the Emblestone, 25 Mar.1947. Many large patches L.W.S.T. Harkness Rocks, Bamburgh, 24 May 1955 (H.O.B.).

Myxilla incrustans (JOHNSTON)

Arndt 1935,p.58,fig.105.

Large specimen trawled 42 fathoms 60 miles N.E. by N. of R. Tyne, 12 May 1935 (S.J.A.B., id. H.O.B.). Small colony L.W.S.T. St. Mary's Is., 29 Jun. 1938. Small piece dredged 25 fathoms E. of Blyth, 19 Jul. 1938. Occasionally trawled up by the laboratory's research vessel, 1954-62 (H.O.B.).

Myxilla fimbriata (BOWERBANK)

Arndt 1935,p.58,fig.104 : Bowerbank 1866,p.337 ; 1874,p.147,pl.58, figs.7-14 (as *Isodictya fimbriata*).

" Off coasts of Durham 20 to 35 fathoms " (Norman 1876, as *Halichondria virgea* Bowerbank) : " O-Küste Englands : Northumberland (Heider 1894), Durham, Dunstanburgh (Bowerbank 1866, 1874, 1882) " (Arndt 1935).

Hastatus lurida (BOWERBANK)*

Bowerbank 1866,p.336 ; 1874,pl.58,figs.27-32 (as *Isodictya lurida*).

" Three miles off Dunstanburgh, Northumberland, Rev. A. M. Norman " (Bowerbank 1866, p.336, as *Isodictya lurida*) ; " Coast of Durham 20 to 35 fathoms " (Norman 1876 in Brady and Robertson 1876) (Bowerbank 1882,p.152).

Hymedesmia armiger (BOWERBANK)

Burton 1930,p.199 : Bowerbank 1882,p.73,pl.4,figs.10-17.

Many colonies, L.W.S.T. Boulmer, 3 May 1946 (H.O.B.).

* ? *Myxilla fimbriata* ?

See de Laubenfels 1936,p.85, and Burton 1930,p.534.

Stylopus coriaceus (FRISTEDT) = **Stylopus dujardini** (BOWERBANK)
(*Hymedesmia brondstedii* BURTON ?)

Bowerbank 1866,p.224 ; 1874,pl.38,figs.1-4 (as *Hymeniacion Dujardini*).

One small colony, on stone from large aquarium tank, 29 Nov. 1940 (H.O.B.). One small colony, L.W.S.T., Boulmer, 4 Apr. 1946 (H.O.B.).

RASPAILIIDAE Haeckel

Raspailia aculeata (JOHNSTON)

Arndt 1935,p.83,fig.172 : Bowerbank 1866,pp.109-110 ; 1874,pl.21,figs.5-12
(as *Dictyocylindrus aculeatus*).

"Scarborough, Mr. Bean." (Bowerbank 1866,p.109, as *Dictyocylindrus aculeatus*) ; " . . . dredged off the Northumberland Coast by Mr. Albany Hancock " (Bowerbank 1874,p.53) : " O-Küste Englands ; Scarborough, vor Newcastle und Northumberland (Bowerbank 1866, 1874) " (Arndt 1935).

Vibulinus (= **Stelligera**) **stuposus** (MONTAGU) J. E. GRAY

Topsent 1934,pp.36-8 : Bowerbank 1866,p.116 ; 1874,p.47,pl.19,figs.1-7 :
Arndt 1935,p.86,fig.182.

"Three miles off Dunstanburgh, Northumberland, 1864 " (Norman in Bowerbank 1882,p.48) : " O-Küste Grossbritanniens : Vor Dunstanburgh (Northumberland) (Bowerbank 1882) " (Arndt 1935).

Two well branched specimens 5 cm. high, L.W.S.T. Embleton, 23 Apr. 1951 (coll. R. Hedley id. H.O.B.).

OPHLITASPONGIIDAE de Laubenfels

Mycale macilenta (BOWERBANK)

Arndt 1935,p.48 : Topsent 1924,pp.105-9,figs.11,12 : Bowerbank 1866,
p.176 ; 1874,pl.33,figs.7-13,17 (as *Hymeniacion macilenta*).

Colony of about 10 sq. cms. irregular shape, on stone, L.W.S.T., North side, Cullercoats Bay, 24 Nov. 1938 (ochreous yellow). Very large colonies encrusting piles, ascidians, etc., L.W.S.T. on middle jetty, South Harbour, Blyth, 10 Oct. 1946. Great quantity there Oct. 1953 (H.O.B.).

Artemisina foliata (BOWERBANK)

Arndt 1935,p.54,fig.94 : Bowerbank 1874,pp.198-200,pl.73,figs.1-5.

" I have received specimens from Scarborough, said to have been brought up by the fishermen or trawlers on the Dogger Bank " (Bowerbank 1874,p.199) : " O-Küste Englands : Scarborough (Bowerbank 1874) " (Arndt 1935).

Fine large specimen growing on *Modiolus* trawled 5 miles E. of Coquet Is., 30 Jun. 1950 (H.O.B.).

AMPHILECTIDAE de Laubenfels

Amphilectus fucorum (ESPER)

Arndt 1935,p.53,figs.92,92a.

" Near Hartlepool, Durham, *J. Hogg* " (Johnston 1842,p.112, as *Halichondria fucorum*) : " Scarborough, Mr. Bean " (Bowerbank 1866,p.322, as *Isodictya fucorum*) ; " Bamburgh, Northumberland, Mr. Alder " (Bowerbank 1866,p.323, as *Isodictya alderi*) ; " North Shields, Dr. W. B. Clarke " (Bowerbank 1866,p.330, as *Isodictya clarkei*) : " O-Küste Englands Durham, Bamburgh, Northumberland, North Shields (Bowerbank 1866,p.74) " (Arndt 1935, p.53).

Common on clean rocky shores, and on weed hold-fasts, L.W.S.T. in both counties (H.O.B.).

Order HALICHONDRINA Vosmaer

AXINELLIDAE Ridley and Dendy

Tragosia infundibuliformis (FLEMING)

Arndt 1935,p.90,fig.192 : Bowerbank 1866,pp.317-8 ; 1874,pl.54,figs.1-8 (as *Isodictya infundibuliformis*).

" Nordsee von Guernsey bis Shetlands (Dendy 1922) " (Arndt 1935,p.91).

HALICHONDRIIDAE Gray

Halichondria panicea (PALLAS)

Arndt 1935,p.103,fig.221.

" very common on all parts " (Johnston 1842) : " Off Durham Coasts 20 to 35 fathoms " (Norman 1876) : " The commonest

sponge in the Estuary (of the R. Tees). Between tide marks, XIII, XII, and XI. Dredged, XIII and XII" (Alexander *et al.* 1935): "O-Küste Grossbritanniens Filey (Fyfe 1861)" (Arndt 1935).

Very common, from H.W.N.T. downwards on rocks, weed hold-fasts, etc., and on stones, shells, backs of crustacea from deep water (H.O.B.).

N.B.—Alexander *et al.* list "*Axinella firma* (Bowerbank) once from piles, North Bank, XII, R. Tees." This is possibly *Halichondria panicea*; it seems unlikely to be *Axinella* (H.O.B.).

Halichondria coalita (GRANT)=**bowerbanki** BURTON

Arndt 1935,p.102: Burton 1930,pp.489-91.

"O-Küste Grossbritanniens: Sheppey und Firth of Forth (Grant 1826e, Bowerbank 1866)" (Arndt 1935).

Halichondria glabra BOWERBANK

Arndt 1935,p.103,fig.218: Bowerbank 1866,pp.232-3; 1874,p.101,pl.41, figs.1,2,3.

"Scarborough, Mr. Bean" (Bowerbank 1866,p.233): "O-Küste Englands: Scarborough (Bowerbank 1866)" (Arndt 1935).

Halichondria albescens (JOHNSTON)

Arndt 1935,pp.101-2,fig.216.

"Berwick Bay, Dr. Johnston" (Bowerbank 1866,p.162, as *Hymeniacidon albescens*): "O-Küste Grossbritanniens (Northumberland, Berwick-Bucht, Holy Island) (Bowerbank 1866, Johnston 1842 und Fyfe 1861)" (Arndt 1935).

HYMENIACIDONIDAE de Laubenfels

Hymeniacidon sanguinea (GRANT)

Arndt 1935,pp.105-6,fig.226: Bowerbank 1866,pp.168-70; 1874,p.81,pl.32, figs.1-8.

"Holy Island, near the coves, sparingly, G.J.": "Berwick Bay, Dr. Johnston" (Bowerbank 1866,p.168): "O-Küste Grossbritanniens (Bowerbank 1882); Berwick (Gray 1848), ? Holy Island (Fyfe 1861)" (Arndt 1935).

Large areas are still present at L.W.S.T. on the rocks on the N.E. shore of Holy Island. Also in the same kind of situation on the N.E. side of the Emblestone and on Harkness Rocks, Bamburgh (H.O.B.).

Hymeniacion virgulatum BOWERBANK

Arndt 1935,p.106 : Bowerbank 1882,pp.84-85,pl.4,figs.4,5.

"Coast of Durham, in 20 to 35 fathoms" (Norman 1876,n.sp.) (Bowerbank 1882,p.85) : "O-Küste Englands : Durham (Bowerbank 1882) ; sonst nicht bekannt geworden" (Arndt 1935).

Hymeniacion mammeata BOWERBANK

Bowerbank 1866,pp.170-2 ; 1874, pl.33,figs.1-4 : Topsent 1934,p.25 ;
Arndt 1935,p.33 (as *Polymastia mammeata*).

"Three miles off Dunstanburgh, Rev. A. M. Norman" (Bowerbank 1866,p.171).

Souter Bank, trawled, 22 Mar. 1937 (H.O.B.).

Order HADROMERINA Topsent

SUBERITIDAE O. Schmidt

Suberites domuncula (OLIVI)

Arndt 1935,p.39,fig.63.

Small colony grew in Laboratory tank 4, 23 Dec. 1949 (H.O.B.).

Suberites crustula (BOWERBANK)

Arndt 1935,p.38,fig.62 : Bowerbank 1866,pp.185-7 ; 1874,pl.34,figs.3-6.

"Scarborough," "on the beach . . . the latter end of March, 1854" (Bowerbank, 1866,p.185, as *Hymeniacion crustula*).

One, off Holy Is., trawled 12 Apr. 1933 (H.O.B.).

Pseudosuberites sulphureus (BOWERBANK)

Arndt 1935,p.42,fig.69 : Bowerbank 1866,p.208 ; 1874,p.93,pl.37,figs.1-3,
and p.181,pl.71 (as *Hymeniacion foliatus*).

"Scarborough, Mr. Bean" (Bowerbank 1866,p.208) ; "O-Küste Englands : Scarborough" (Arndt 1935,p.42).

Prosuberites epiphytum (LAMARCK)*

Arndt 1935,p.43,fig.71.

Grew on many dead oyster valves in the research aquarium tanks, 1952-54, some colonies reaching 100 sq. cms. in area during the summer. Died down in winter.

(These oyster shells were of the Portuguese oyster and had come from the bottom of a Portuguese ship which came into Blyth for breaking up ; it is therefore perhaps doubtful if the record should stand as one from this district).

Polymastia robusta BOWERBANK

Bowerbank 1866,pp.62-4 ; 1874,pl.10,figs.5-8 : Arndt 1935,p.34.

" Dredged about 5 miles from the Yorkshire Coast near Whitby, in 35 fathoms (by Captain F. W. L. Thomas, R.N.) " (Bowerbank 1866, p.59, as *Polymastia ornata*) ; " Forty miles off Coast of Northumberland in about 40 fathoms Professor Wm. King, of Galway ; 3 miles off Dunstanburgh, Northumberland, Rev. A. M. Norman " (Bowerbank 1866,p.62) : " Coast of Durham " (Norman, 1876).

S.E. of Farne Is. trawled, 24 Feb. 1933 (H.O.B.).

Polymastia mammillaris (O. F. MULLER)

Arndt 1935,p.33,fig.48.

" Coast of Durham " (Norman, 1876) : " Three miles off Dunstanburgh, Northumberland " (Bowerbank 1882,p.32).

Radiella sol (SCHMIDT)

Arndt 1935,p.35 : de Laubenfels 1936,p.150,pl.22,fig.2.

Arndt quotes Bowerbank 1866, and 1882, as authority for locality " O-Küste Englands," but even if one assumes that *Halicnemia patera* is a possible synonym it still remains an error. There is no entry in Bowerbank for the East coast of England under either of these names.

* It seems to me difficult to accept the view (Burton, 1934b) that this is a " post-larval " stage of *Suberites carnosus* (Johnston). Other sponges which colonise the aquarium tanks and grow up and die periodically, as did this one, all acquire normal " adult " facies and there can be no justification for regarding these large areas as " post-larval."

Terpios fugax DUCHASSAING and MICHELOTTI

Arndt 1935,p.42,fig.70.

"I found it between tide-marks at Cullercoats" (Norman in Bowerbank 1882,p.89, as *Hymeniacidon gelatinosus*): "O-Küste Englands: Cullercoats (Bowerbank 1882), Northumberland (Topsent 1900)" (Arndt 1935,p.42).

On *Inachus dorynchus* from crab pot, $\frac{1}{2}$ mile E. of Cullercoats, 7 Oct. 1938; on stone from large aquarium tanks, 29 Nov. 1939; large colony, 15 cm.², under stone, L.W.S.T., due E. of end of road from St. Mary's cemetery, 16 Sep. 1947; common, under stones, L.W.S.T., Boulmer, 27 Mar. 1952 (H.O.B.).

Choanites=Ficulina ficus (ESPER) J. E. GRAY

Arndt 1935,p.39,fig.64.

(a) var. *farinaria*

Occasionally on *Chlamys opercularis* (H.O.B.).

(b) var. *suberea*

"The whole of the British coasts" (Bowerbank 1866,p.200, as *Hymeniacidon suberea*); "Coralline zone, Durham coast, abundant" (Bowerbank 1882,p.89): "Off Durham coasts, 20 to 35 fathoms" (Norman 1876).

Common, especially on *Dentalium* shells from mud (H.O.B.).

(c) var. *virgultosa*

Bowerbank 1866,p.193; 1874,pp.89-90,pl.35.

Typical colony trawled 39 miles E. of Scarborough, 24 Mar. 1938 (H.O.B.).

CLIONIDAE Gray

Cliona celata GRANT

Arndt 1935,p.44,fig.74.

"On the coast of Northumberland the surface of almost every piece of limestone near low-water mark is riddled with *Cliona*" (A. Hancock 1849,p.323): "O-Küste Grossbritanniens: Scarborough (Gray 1848), Northumberland (Hancock 1849, Bowerbank 1866)" (Arndt 1935).

Common, boring in old shells, especially *Buccinum*, *Fusus*, etc., and boring in the limestone, especially between and below tide-marks on the Durham coasts, Blackhall, Whitburn, and Marsden (H.O.B.).

***Cliona vastifica* HANCOCK**

Arndt 1935, p. 45, fig. 76 : Hancock 1849, p. 342, pl. 15, fig. 12 ; 1867, p. 237, pl. 7, fig. 2 ; also (1849, p. 336, pl. 14, fig. 5 ; 1867, p. 237, pl. 7, fig. 1, as *Cliona northumbrica*).

" Two specimens on *Fusus antiquus* Cullercoats " (Hancock 1849) ; " a few additional specimens have occurred in the Northumberland coast " (Hancock 1867) : " O-Küste Grossbritanniens : Northumberland (Bowerbank 1882) und Haddock-Grund (Hancock 1849) " (Arndt 1935).

Common in old *Fusus* shells, etc., from the seine-net boats, Blyth (H.O.B.).

***Cliona howsei* HANCOCK**

Hancock 1849, p. 336, pl. 14, fig. 8 ; 1867, pp. 238-9, pl. 7, fig. 5 : Arndt 1935, p. 44 (as *Cliona lobata* Hancock).

" Only two specimens have occurred, one in *Fusus antiquus* from the Dogger Bank, the other in a millipore procured from the beach at Tynemouth " (Hancock 1849) ; " a few additional specimens have occurred on the Northumberland coast " (Hancock 1867) : " O-Küste Grossbritanniens : Northumberland (Bowerbank 1882), Tynemouth (Hancock 1849) " (Arndt 1935).

CLASS CALCISPONGIAE SCHMIDT

Order SYCONOSA de Laubenfels

GRANTIIDAE Dendy

***Grantia compressa* (O. FABRICIUS)**

Arndt 1935, pp. 15-16, figs. 19, 19A, 19B : Bowerbank 1874, p. 1, pl. 1, figs. 1-12.

" On sea-weeds and rocks near low-water mark, and on stipes of *Laminaria*, etc., sublittorally, common (Berwick Bay) " (Johnston 1832, p. 270) : " O-Küste Grossbritanniens Durham* (Johnston

* Incorrect reference. Should read " Berwick Bay " (Johnston 1832).

1832), Blackhall Rocks (Preston 1914), Tynemouth (Haeckel 1872), Cullercoats (Jørgensen 1917, 1918), Berwick-Bucht (Gray 1848, Haeckel 1872)" (Arndt 1935): "Single specimen between tide-marks, XII (mouth of R. Tees) " ; (Alexander *et al.* 1935).

Abundant on rocky shores between tide-marks on rocks and algae (especially *Cladophora*) from H.W.N.T. (and higher in rock pools) downwards. On piles in Blyth Harbour occasionally reaches a very large size, up to 25 cm. $\times$ 4 cm. (H.O.B.).

Breeding : June to beginning of September (Jørgensen 1917, 1918).

Leuconia=Leucandra nivea (GRANT)

(*not nivea* of Bowerbank=*johnstoni* (CARTER))

Arndt 1935, p.19, fig.26 : Haeckel 1872, II, pp.211-6 ; III, pl.34, figs.2a-e, pl.39.

"O-Küste Grossbritanniens : Scarborough und Schloss Dunstanburgh in Northumberland (Johnston 1842, Bowerbank 1860, 1866, Haeckel 1872), Berwick (Fyfe 1861)" (Arndt 1935).

Common, on rocky shores, encrusting the undersides of stones, L.W.N.T. downwards (H.O.B.).

Leuconia=Leucandra johnstoni (CARTER)

Arndt 1935, p.19, fig.25 : Haeckel 1872, II, pp.216-21 ; III, pl.34, figs.1a-1.

"O-Küste von England : Scarborough (Haeckel 1872) " (Arndt 1935).

SCYPHIDAE de Laubenfels

Scypha=Sycon ciliatum (O. FABRICIUS)*

(*not* Bowerbank which is *coronatum*)

Arndt 1935, p.10, fig.13 : Haeckel 1872, II, pp.296-302 ; III, pl.51, figs.1a-1t, pl.58, fig.9.

"O-Küste Grossbritanniens Berwick (Fyfe 1861) " (Arndt 1935).

This is the *Sycon* which formerly grew so luxuriantly in the Laboratory tanks, reaching a large size. Common on piles in Blyth Harbour, occasionally reaching a very large size up to 20 cm. $\times$ 2 cm., 1928-54 (H.O.B.).

* Owing to confusion, earlier records of *ciliatum* and *coronatum* must remain uncertain.

Scypha = Sycon coronatum (ELLIS and SOLANDER)

Arndt 1935,p.12,fig.14 : Haeckel 1872,II,pp.304-8 ; 1872,III,pl.51,
figs.2a-2t,pl.60,figs.1-6.

" Single specimen dredged, XIII (Mouth of Tees) " Alexander,
et al., 1935).

Two, Harkness Rocks, Bamburgh, L.W.S.T., 15 Aug. 1950 ; six,
on stones, beam trawl, Crumstone to Pinnacles, Farne Is., 16 Sep.
1950 (H.O.B.).

Scypha = Sycon setosum (SCHMIDT)

Haeckel 1872,II,pp.322-4 ; III,pl.53,figs.3a-3t,pl.60,fig.11 (as *Sycandra*
setosum).

Two dozen on boulders, L.W.S.T. Boulmer, 3 May 1946 ; three
found growing in public aquarium tanks, 5 May 1948 (H.O.B.).

LEUCOSOLENIIDAE Minchin

Leucosolenia botryoides (ELLIS and SOLANDER)

Arndt 1935,p.4,fig.1 : Topsent 1936b,pp.33-7,figs.17,18.

By far the greater part of the sponge which grows on *Cladophora*
etc., in the distinct and generally referred to *botryoides* answers much
more closely to the description of *botrys* of Haeckel. It is abundant
on rocky shores on algae, corallines, etc., in rock pools from near
H.W.S.T. to L.W.S.T. Typical *botryoides* with short stout arms to
the tri-radiates and lacking oxea occurs abundantly in similar
situation. (H.O.B.).

var. *variabilis*

Arndt 1935,p.9,fig.11 (as *Leucosolenia variabilis*).

Abundant on rocky parts of the coast under muddy stones from
L.W.N.T. downwards (H.O.B.).

Leucosolenia variabilis

See *Leucosolenia botryoides* (Ellis and Solander) var. *variabilis*.
I share Topsent's view that this and *botryoides* are indistinguishable
(H.O.B.).

Leucosolenia complicata (MONTAGU)

Arndt 1935,p.5,fig.2 : Topsent 1936b,pp.27-33,figs.14,15,16.

From bottom of S.S. "Gogovale," before breaking-up, Blyth, 30 Jul. 1934. The characters of this material, which was very fine and abundant,, were those of *Leucosolenia pinus* (Haeckel), and are included here because the consensus of opinion seems to be that *pinus* is a variety or synonym of *complicata*. Grew annually in profusion in the large public aquarium tanks 1930-40. This material had the characters of *Leucosolenia lieberkuhnii* (O. Schmidt), and is included here because I agree with Topsent (1936b,p.33) that this is a possible synonym of *complicata* but not of *botryoides* (H.O.B.).

Leucosolenia sagittaria (HAECKEL)

Arndt 1935,p.9,fig.10 : Haeckel 1872,II,p.42 ; III,pl.5,figs.7a-f, as *Ascetta sagittaria*.

Thirty specimens, on Gemellaria, 5 miles E. of Blyth fairway buoy, dredged, 30 Mar. 1938 (H.O.B.).

Leucosolenia coriacea (MONTAGU)

Topsent 1936b,pp.2-7,figs.1,2 : Arndt 1935,p.7,fig.4 : Bowerbank 1874, p.8,pl.3,figs.11-14.

"Berwick Bay, Johnston" (Bowerbank 1866,p.34).

Occurs under stones and in crevices of rocks, L.W.N.T. and downwards, all along the coast but not very common and the patches usually small. Abundant at Blackhall Rocks, 29 Jun. 1935. Grows regularly on stones, walls, etc., in the research aquarium. In 1939 also occurred in large public aquarium tanks in several large patches. In these conditions usually white or pale sulphur (H.O.B.).

Leucosolenia lacunosa (JOHNSTON)

Topsent 1936b,pp.14-17 : Arndt 1935,p.8,fig.7 : Bowerbank 1874,p.9 pl.4,figs.1-8.

"On rocks at low water near Scarborough, very rare, Mr. Bean" (Bowerbank 1866,pp.32-4 ; 1874,p.9) : "O-Küste Grossbritanniens : Scarborough (Johnston 1842, Bowerbank 1866)" (Arndt 1935).

Two specimens on stone dredged 3 miles N.E. of Cullercoats, 1 Dec. 1937 (H.O.B.).

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