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FURTHER NOTES ON THE PLANKTON OF VALENTIA HARBOUR.

1906-1923.

BY MAUD J. DELAP.

FOR a number of years tow-netting for pelagic animals has been carried on in Valentia Harbour, which is a very suitable place for such work at almost any time of the year.

The results of past work have been already published, notably those of Mr. E. T. Browne and his colleagues, in the "Proceedings" of the Royal Irish Academy, Ser. III., vol. v., for the years 1895-1898.

The work was continued through the following years, and results published in the "Scientific Investigations" of the Fisheries Branch of the Department of Agriculture and Technical Instruction in 1905 and 1906 (Ann. Rep. Fish., Ireland, 1902-03, pt. ii., app. i. (1905), and Fisheries, Ireland, Sci. Invest., 1905, vii. (1906).

The following notes are fairly complete for the years 1906-1910; but after that date, regular tow-netting was discontinued and only odd appearances recorded; for instance large shoals or drifts of ocean animals being stranded on the shores of the Harbour or neighbouring creeks, such as Cooscroum on Dingle Bay, and the shore between Murragh Point and Trawiganaun pier in Dohilla. This

latter shore is outside the Harbour to the westward of the lighthouse, and catches the ocean drift in a sort of back-water. Reenagiveen Point and the beach to the north of Knightstown are also good collecting grounds for drift material.

These notes are by no means exhaustive of the various animals seen, as many other organisms are common in their seasons, such as Oikoplura, Bipinnaria, fish eggs, copepods, etc.

RADIOLARIA.

1906.—A few *Acauthometron* and *Thalassicola* were taken in August, September and October. **1907.**—In July a good number were captured of both and a few in October and November. **1909.**—Very numerous in August.

CYSTOFLAGELLATA.

Noctiluca miliaris :—**1906.**—None seen. **1907.**—Fairly numerous in June. Abundant in August, and again in October and November. **1909.**—Crowds in July, choking the tow-net.

ANTHOMEDUSAE.

Amphinema dinema :—**1906.**—A few specimens in March, April, August, and November. **1907.**—Odd ones seen in April and August. **1909.**—A few seen in June.

Corymorpha nutans :—**1906.**—A few were taken in June. **1907.**—Very few in May and June. **1908.**—A few in May, more plentiful in June. **1909.**—Numerous in June.

Cytaeandra areolata :—**1908.**—One specimen seen on August 14.

Dipurena ophiogaster :—**1906.**—One taken on May 8, and two in August. **1908.**—One seen in May.

Dipurena halterata :—**1906.**—One specimen in August. **1907.**—Two taken in June.

Euphysa aurata :—**1906.**—Two seen in April and one in August. **1907.**—Three in May, two in June, and one in August. **1908.**—One seen in May.

Lar sabellarum :—**1906.**—A few in March and April; more plentiful in October and November. **1907.**—A few in June, August and November. **1908.**—In May and August a few were captured.

Lizzia blondina :—**1907.**—Frequent during May and June.

Margelis sp. ?—**1906.**—A young specimen taken in April. **1907.**—Two in April, one in May, and one in June. **1908.**—One in May. **1909.**—One in June.

Margellium octopunctatum :—**1906.**—A good many taken in March and April, and again in June and September. **1907.**—One in January,

some in March, many in April and May. 1908.—A few taken in May. 1909.—Several in September.

Sarsia gemmifera :—1906.—Two taken in August, and several in September. 1907.—One in June; a few in August.

Sarsia prolifera :—1906.—One in August, some in September, and a good many in October. 1907.—In May a good number were taken; continued fairly numerous through June; very plentiful in August. 1909.—A number seen in September.

Sarsia tubulosa :—1906.—A good many seen in June. 1907.—Two in April; two in June. 1908.—One in May; plentiful in June and August. 1909.—One in June.

Tiara pileata :—1906.—A few in April; more plentiful in June. 1907.—One in January; a few in April; more plentiful in May and June, and one in August. 1908.—One in May; plentiful in June and July. 1909.—A few in June and September.

LEPTOMEDUSAE.

Agastira mira :—1906.—One specimen taken in November.

Dipleurosoma typicum :—1906.—A few taken in October. 1907.—One in April. 1909.—Plentiful in June and September.

Euchilota pilosella :—1906.—In June a good many were seen. 1907.—A few in May and June. 1908.—A good many in May and June. 1909.—A few in June; many in September.

Laodice calcarata :—1906.—A good many in June. 1907.—A few in August. 1908.—Some taken in June. 1909.—A good many in September.

Obelia nigra :—1906.—Present in all tow-nettings from March to end of November. 1907.—Plentiful in March and throughout the rest of the year. 1908.—Taken in March, May and June. 1909.—Taken in August and September.

Phialidium cymbaloideum :—1906.—Plentiful through March, April, June, August and September. 1907.—Plentiful in March, May and June, and a few in August. 1908.—Numerous in May. 1909.—Numerous in September.

Phialidium temporarium :—1906.—Plentiful in March, April and June; a few in October, November and December. 1907.—In January one was taken; frequent in March; many in May, also in June, July and August. 1908.—A few in March, and many in May, June and July. 1909.—A few in February and March; very numerous in June and September.

Polycanna sp. :—1909.—In June about 20 specimens were captured, probably the species *viirina*. 1923.—A large number of damaged large specimens were stranded on the shore on the 16 and 19 of September. None of these was perfect, but enough to show that the largest one was at least eleven inches in diameter. The colour was purplish blue, shading into pink in the canals.

TRACHOMEDUSAE.

Aglantha rosea.—1906.—Numerous all through October and November.
 1907.—Numerous in May and June ; one seen in November. 1909.—
 A good many in September.

NARCOMEDUSAE.

Solmaris corona :—1907.—One specimen on August 12.

SIPHONOPHORA.

Velella spirans :—1906.—From January 8 to end of that month, and also on February 1, quantities of *Velella* were stranded on the rocks and shores of the Harbour, from very tiny ones two mm. in diameter to two inches long. This drift was accompanied as usual by numbers of barnacles attached to floating objects, such as bits of cinder, seaweed, corks, and wood. One small *Ianthina* and a *Spirula* and a few air-sacs of Sargasso weed. On October 30 several *Velella* were taken.
 1907.—On February 25 at Cooscroum on Dingle Bay, a large drift of *Velella* was seen. On April 1 one was found in Valentia Harbour.
 1908.—One specimen on February 5. In July a few were stranded by the tide. 1918.—Many on the shore near Knightstown. 1919.—A large number were stranded in the Harbour. 1921.—A large drift on January 17, specimens from one to seventy mm. in length.
 1923.—During July considerable numbers seen. On August 1 at Dohilla, west of Valentia lighthouse many *Velellas* were seen afloat and stranded in a huge drift of *Salpae*. August 13.—Many seen in Valentia Harbour. Sept. 11.—A few seen in Dohilla.
Cupulita Sarsii—1906.—A few specimens in October on several days, and on two occasions in November. 1907.—Several seen in August.
 1908.—Plentiful in June and July ; crowds on September 28.
Agalmopsis sp. :—1908.—One specimen taken on July 30.

SCYPHOMEDUSAE.

Aurelia aurita :—1906.—A few seen in June. 1907.—In June a few appeared. 1908.—Very few seen in June and July. 1909.—Ephyrae taken in February ; one adult specimen in June. 1923.—Crowds appeared in May.
Chrysaora isosceles :—1908.—Several were seen in July. 1909.—Plentiful all June and July. 1923.—Crowds of very large specimens were stranded on the shore during May ; umbrellas over 12 inches in diameter.
Cyanea Lamarcki :—1908.—One only seen in July.
Pelagia perla :—1906.—A good number seen in August ; very numerous in September, November and December. 1907.—Many in August.
Rhysostoma octopus :—1906.—One seen in September ; many in October.

CTENOPHORA.

- Pleurobrachia pileus** :—1906.—Plentiful in March, also in August, September, October and November. 1907.—A few in March, May, June and July, becoming very numerous in August ; in crowds on August 24. 1908.—A few early in May, then in crowds till end of July. 1909.—Plentiful in June, July and in September.
- Bolina norvegica** :—1906.—A few in March ; plentiful in June. 1907.—Numbers in August. 1908.—Many during July. 1909.—Many throughout June and again in September.
- Beroe ovata** :—1906.—Plentiful in June ; a few in September ; one in December. 1907.—One in May ; numbers in August. 1908.—Some very large specimens in July. 1909.—A few in June ; plentiful in September.

MOLLUSCA.

- Ianthina communis** :—1906.—On January 26 one small *Ianthina* ? *exigua* was found on August 19 ; two *I. communis* at Cooscroum. On September 2 two were picked up on Beginniss Island, Basket Sound. One specimen found on Valentia, October 30. 1907.—One at Cooscroum on May 8. 1907.—A large specimen at Valentia on July 28. 1918.—A few found with *Verella*. 1919.—A number stranded with *Verella*. 1921.—On January 17, one was found. 1923.—September 11 at Dohilla strand one large *Ianthina*, alive ; on September 21 another live one with its float ; another large shell on September 23.
- Spirula Peronii** :—1906.—On February 17 one shell found on the rocks at Reenagiveen. 1907.—Several at Cooscroum on May 28 ; one found on August 5. 1908.—One shell on February 5. 1923.—Two small shells found at Dohilla.
- Limacina retroversa** :—1906.—In March and April, August, September, October and November, present in small numbers. 1907.—A few in June, August, October, and November.
- Clio limacina** :—1906.—From March to November not numerous at any time. 1907.—In June, August, October and November. 1909.—A few in August.

TUNICATA.

- Thalia democritica-mucronata** :—1906.—None. 1907.—None seen. 1908.—*Thalia* appeared in considerable numbers on July 30 ; very plentiful from August 13 to 25. 1909.—None.
- Salpa runcinata-fusiformis** :—1908.—Plentiful, August 13-25. 1923.—In July large drifts of *Salpa*, large specimens, nearly all the chain individuals. On August 1, at Dohilla, an immense drift of *Salpa* in the bay (like porridge), and stranded thickly on each tide-mark ; as far as could be seen these were entirely the chain individuals. On August 13 a big drift in Valentia ; all were the solitary intermediate stage. September 11, at Dohilla, a good many seen, and a few odd ones up to September 16.

Doliolum :—1907.—August 12, a considerable number in the tow-net, and also on 16th ; some very small ones ; bigger ones with broad muscle bands.

Barnacles.—These occur so frequently that they are not always recorded. 1907.—In February, April and August. 1908.—In February a good many. 1923.—In August and September, many.

LARGE SHOALS OR DRIFTS.

1906.—January 8, 26, and February 1, a large drift of Velella and Barnacles, one Spirula, one Ianthina, Sargassum, drift timber, etc., after a spell of westerly wind and heavy seas. In October immense shoals of *Pelagia perla* appeared as a purple patch, acres in extent, that could be seen half-a-mile away. Many remained about the Harbour during November, and many Polycanna with them.

1907.—At Cooscroum on Dingle Bay, February 25, large drift of Velella, barnacles, Sargassum, quantities of hollow-stemmed Laminaria, and at same locality, in May, Sargassum, Spirula, Ianthina, barnacles, a damaged Physalia, and a Sea-bean (*Entada scandens*). In June, in Valentia Harbour, drifts of Noctiluca and Aurelia ; also picked up a large piece of spawn of Angler.

1908.—In May and June great drifts of small jellyfish, Pleurobrachia, Tiara, Sarsia, Eulichota, etc. Continued through June, odd Ianthina, Velella, followed by Salpa, blue (*Thalia*) and brown (*fusiformis*).

1909.—In June and July great drift of jellyfish, Radiolaria and Noctiluca, including a number of big jellyfish (*Chrysaora*, *Pilema*, *Polycanna*), *Cupulita*, *Sarsia*, *Agalmopsis*, etc., and one rarity, a number of *Catablema*.

1914.—In May, a Long-finned Bream, taken near Bray Head.

1921.—January 17, large drift of Velella, Ianthina, Spirula, barnacles, and on 27 a small Loggerhead Turtle, dead, stranded on shore. Another turtle was reported from Bantry, and a great shoal of Portuguese Men-of-war about same date. A large piece of white coral covered with barnacles also floated in.

1923.—In May quantities of very large *Chrysaora* and *Aurelia* left on shores. July, drift of *Salpa*, *Velella*, and a Sea-bean. In August at Dohilla, an immense drift of *Salpa fusiformis*, *Velella*, *Spirula*, barnacles, and several Sea-beans. August 13, drift of *Salpa* in Valentia Harbour. September, *Salpa* ; quantities of very large *Polycanna*, blue and pink, very damaged.

Valentia.