

A CHECK LIST OF SIPHONOPHORA FROM IRISH WATERS, WITH A RECORD OF *PHYSOPHORA HYDROSTATICA* (FORSKAL) FROM THE IRISH COAST

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While shore collecting on the west coast of Blind Harbour (F 7437), on the Mullet Peninsula, Co. Mayo, on 18th May, 1969, a small rock pool was found to contain a rather unexpected specimen. This was recognized as *Physophora hydrostatica* (Forsk.) a coelenterate of the Class Siphonophora.

A description of this species may be found in Totton's monograph (Totton, 1965). The animal was in perfect condition, approximately 6 cm long, and capable of active swimming by means of its contractile nectocalyces, or "swimming bells". The tentacle-like palpons were highly mobile, and capable of considerable concerted action. The palpons are said to be able to inflict severe stings (Totton, 1965); this aspect was unfortunately not investigated in our specimen.

Physophora is of striking appearance. The swimming bells of this specimen were translucent, with a slight blue tinge, and the long trailing tentacles appeared off-white. The circle of palpons however was a bright colour between rose and apricot. They did not seem to show a greenish tinge, as is apparently common (Totton, 1965). The small float chamber (pneumatophore) had the characteristic dark plum coloured pigment spot, clearly visible at its apex.

This species is very widespread in its distribution, and is one of the few siphonophores that is indigenous in the cold waters of the North Atlantic, occupying a known temperature range of 3° C to 21° C. Fraser (1955) regards it as a species characteristic of the Oceanic water in the North Atlantic, and used it to differentiate between the Oceanic and Lusitanian water west of the British Isles. However, it also occurs in the Mediterranean.

In view of its distribution, and the fact that it is an animal of unusual appearance unlikely to be overlooked, or mistaken, it is remarkable that there appear to be no previous reports of its occurrence on the Irish coast. It does not appear in Stephens' "List of Irish Coelenterata" (Stephens, 1905, 1920). It has however been taken in the open sea off the coast of Clare (Fraser, 1969), and one would expect members of the species to be found washed ashore occasionally.

SIPHONOPHORA FROM IRISH WATERS

While most Siphonophora are open-sea forms, and are often cosmopolitan, or of wide distribution, so that the matter of "national records" scarcely arises, with the increasing number of biologists studying the sea shore it is of value to know which species are liable to be found on the coasts, which species have already been recorded, and the current nomenclature of such species. The last published check list to cover siphonophores from Irish coasts was that of Stephens (1905), since when considerable changes in the nomenclature of the group have occurred. This opportunity has been taken to bring the list up to date. Only coastal and inshore records are considered here. Much information on the siphonophores in the open sea west of Ireland may be found in Fraser (1967). Convenient keys for their identification, together with tables of their distribution, are given by Totton and Fraser (1955).

It should be noted that the frequently recorded 'By-the-wind Sailor', *Veella*, is no longer considered a member of the Siphonophora, being regarded as belonging either to a separate Order within the Hydrozoa, the Order Chondrophora (Totton, 1965), or as a family within the Hydroida Capitata (Edwards, 1966).

DEFINITE RECORDS

Agalma elegans (Sars) Fewkes. Stephens (1905) lists this as a doubtful record from Dalkey Sound under the name of *Agalmopsis sarsii* Kölliker. A specimen was collected from Valentia Harbour in 1902, and was recorded by Delap and Delap (1906) under the name of *Agalmopsis elegans* Sars. The specimen of "*Agalma* with tricornuate tentilla" recorded from Valentia Harbour in June 1899 (Delap and Delap, 1905) was probably also of this species. In recent years it has been common in the plankton of the Co. Galway coast, being particularly plentiful in May, 1968 (O'Céidigh, 1970). The species is abundant and of widespread distribution.

Chelophyes appendiculata (Eschscholtz). This diphyid is given in Stephens' list as *Diphyes elongata* Hyndman (and as *Diphyes bipartita* Costa). Early records exist from Belfast Lough and the Giant's Causeway, and a possible record from Bundoran.

Muggiaea atlantica Cunningham. This is the one species in Stephens' list which has retained the same name. The records are from Valentia Harbour, and were published by Browne (1900). Stephens (1920) adds records by Gough (1905) from S Arklow lightship (52° 40' N 5° 66' W), Coningbeg lightship (52° 2' N 60° 40' W), and from Fastnet Rock. Further records appear in Delap and Delap (1905, 1906) from Valentia Harbour, and Farran (1914) "off Co. Mayo".

In Valentia Harbour this species occurred from May to November, being particularly abundant in September. Very large shoals appeared from September to November in 1904. It has also been taken very frequently in the Galway Bay and Aran Islands plankton between 1967 and 1969, though not so often recorded in the previous decade (O'Céidigh, 1970).

Muggiaea kochi (Will). Stephens gives a single doubtful record from SW Ireland, as *Muggiaea kochii*. This is, however, a common species occurring frequently in the English Channel (Russell, 1934; Southward, 1962), and it has been extensively studied at Plymouth. It is also found in inshore waters along the west coast of Scotland (Fraser, 1967). Specimens have been taken at several stations off the southeast coast of Ireland in the course of large scale plankton surveys (Southward, 1962). Both *M. kochi* and *M. atlantica* are regarded as indicators of southwest warm water plankton. It appears that either of the two species may predominate in different years.

Nanomia cara Agassiz. Stephens (1905) lists this species as *Cupulita sarsii* Haeckel, giving records from Kingstown Harbour and from Valentia Harbour, the latter from Browne (1900). Further records from Valentia are to be found in Delap and Delap (1905, 1906) and Delap (1924). Farran (1914) records it from ten miles WNW of Cleggan Head, Co. Galway. The records show that it may occur at Valentia from March to November. Occasionally large shoals were recorded, especially in the Autumn.

Stephens (1920) adds two records by Gough in 1906, from the S. Arklow lightship (location as above) and from Fastnet Rock.

Physalia physalis (L.). This is the same species as *Physalia pelagica* Eschscholtz, listed by Stephens as being recorded near Ardmore, Co. Waterford by Thompson in 1835. Numerous records of its occurrence have appeared since, especially from Cape Clear Island (see Sharrock, 1969). Other localities include Valentia Harbour (Delap, 1924); Hook Tower lighthouse, Co. Wexford, and Tragumina (near Skibbereen), Co. Cork (Stelfox, 1936); Annestown, W of Tramore, Co. Waterford (Walker, 1946); Ballyteige Burrow, S Wexford (Wilson, 1947); SW of Cork Harbour (Atkins, 1959); Brittas Bay, Co. Wicklow (Friel, 1959); Portnoo, Co. Donegal (Roche, 1959); Dingle Bay and Ventry, Co. Kerry (O'Riordan, 1969); Mannin Bay and Galway Bay, Co. Galway (O'Céidigh, 1970). This species is common in tropical and subtropical Atlantic waters, and usually appears on our coasts after strong southwesterly winds (Wilson, 1947; Sharrock, 1969). In some years exceptionally large numbers are reported. One such year was 1946, and a detailed study of the event, together with much other information on the species and its occurrence in British waters may be found in Wilson's paper (1947).

Physophora hydrostatica (Forskål). One specimen from Blind Harbour, Co. Mayo, 1969 (see above).

Sulculeolaria biloba (Sars). The Misses Delap observed several specimens in Valentia Harbour, each year from 1899 to 1905, which they recorded as "*Galeolaria* sp.?" (Delap and Delap, 1905, 1906). (In modern nomenclature this would read "*Sulculeolaria* sp.?"). These have been positively identified (Totton, 1969), as *Sulculeolaria biloba* and Miss M. J. Delap's sketch was used as the basis of an illustration of the species in Totton's "Synopsis" (Totton, 1965).

The species was observed predominantly from April to July, though a few specimens were observed in September 1905.

Whether Farran's record of "*Galeolaria* sp." off Co. Mayo (Farran, 1914) also refers to this species is a matter of conjecture.

QUESTIONABLE RECORDS

Stephens (1905) lists two early records from Belfast Lough and Kingstown Harbour as *Forskalia contorta* Leuckart (and as *Stephanomia contorta* Milne-Edwards). Adhering strictly to the synonymy this species would now appear as *Forskalia leuckarti* Bedot. However, this is an exceptionally rare, poorly known Mediterranean species, and as such the record is most unlikely. As Totton (1965) has pointed out there has been a great deal of confusion in the synonymy of this genus. A more likely interpretation is that the specimens were of the abundant species *Forskalia edwardsi* K  lliker.

Stephens also lists a questionable record by Bourne in 1890 of *Athorybia ocellata* Haeckel, from the southwest of Ireland. This species (now *Athorybia rosacea* Forskal) is extremely rare, and most unlikely to occur in Irish waters. It is possible that the specimens observed may have been the so-called *Athorybia* larvae, of, perhaps, *Agalma*.

OTHER SPECIES LIKELY TO OCCUR IN IRISH WATERS

The following species are considered (Fraser, 1969) to be very likely to occur along the Irish coast, but have not so far been recorded:—

Lensia conoida (Kefferstein & Ehlers), one of the most abundant siphonophores in waters west and north of the British Isles.

Dimophyes arctica (Chun), which has a distribution similar to that of *Physophora*.

Sphaeronectes gracilis (Claus), which is not common, but has been found in inshore waters on the west coast of Scotland in 1964 (Fraser, 1967).

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