

Larger Cnidaria and Ctenophora from the plankton and pleuston in Belgian waters*

by Guido RAPPE

Abstract

This note describes the occurrence of one species of Hydrozoa, two species of Siphonophora, six species of Scyphozoa and two species of Ctenophora that have been observed alive in Belgian waters. From a further species of the pleuston, *Velella velella* (Hydrozoa, Chondrophora), only washed ashore 'skeletons' are known to have reached the Belgian coast.

For the more common species of Scyphozoa some attention is paid to the seasonal pattern of occurrence.

Key-words : Cnidaria, Ctenophora, plankton, pleuston, seasonal occurrence, Belgium.

Samenvatting

Deze bijdrage behandelt de grotere neteldieren (Cnidaria) en de kamkwallen (Ctenophora) die levend in plankton en pleuston werden waargenomen in de Belgische wateren : één kwalletje (Hydrozoa), twee Siphonophora, zes schijfkwallen (Scyphozoa) en twee kamkwallen (Ctenophora).

Van het drijvend 'kwalletje' *Velella velella* (Hydrozoa, Chondrophora) zijn alleen aangespoelde 'skeletons', bekend aan onze kust.

Bij de meer algemene schijfkwallen (Scyphozoa) wordt kort ingegaan op het seizoenale patroon van het voorkomen.

Trefwoorden : Cnidaria, Ctenophora, plankton, pleuston, seizoenaal voorkomen, België.

Introduction

The standard literature on Belgian species of Cnidaria and Ctenophora, formerly joined together in the phylum Coelenterata, (LELOUP, 1947 ; 1952) mentions five species of jellyfish (Scyphozoa) : *Pelagia noctiluca*, *Chrysaora hyoscella*, *Cyanea capillata*, *Aurelia aurita* and *Rhizostoma octopus*, and two species of combjellies (Ctenophora) : *Pleurobrachia pileus* and *Beroë cucumis*.

Recently this classical view proved to be partially wrong and incomplete (KERCKHOF, 1982 ; RAPPE, 1987). This urged us to review the status of the taxa concerned. In addition, for biological, ecological and linguistic reasons, some rarely recorded 'related' cnidarian species are reviewed too.

To gather more information on the common species of jellyfish, a small-scaled scheme was set up during 1988, with the cooperation of some members of the "Strandwerkgroep", a Flemish association for amateur marine

biologists. On some defined stretches of beach more or less regular counts were made of jellyfish washed ashore. However, compared to previous years 1988 proved to be a poor season for jellyfish. The cumulated results, up to and including November 13th, are summarized in table 1.

Systematic account

CNIDARIA

Class Hydrozoa

Order Hydrozoa

Suborder Chondrophora

Velella velella (LINNAEUS, 1758)

In February 1988 an invasion of *Velella velella*, a warm-water oceanic species, better known by its vernacular name 'Jack Sail-by-the-Wind', took place in the Southern Bight of the North Sea. No living specimens were noted though, only the colourless 'cartilaginous' skeletons were involved. Thousands of these were washed ashore on Belgian (RAPPE et al., 1988) and Dutch beaches (CADÉE, 1988 ; RAPPE, 1988 ; VERKUIL, 1988). The weather during the preceding period was characterized by strong gales from north-westerly to south-southwesterly direction. Although the first specimens of the invasion were found along the coast of Holland (the Netherlands), I rather believe the 'skeletons', together with surface waters were blown through the Channel into the North Sea.

This is the first published record of *V. velella* in the North Sea. In April 1912 both *Physalia physalis* and *V. velella* were present in the Straits of Dover. From that invasion at least some *P. physalis* reached the Belgian coast (LAMEERE, 1912). Had *V. velella* been overlooked? A second hint was the statement by M. DUMOULIN (pers. com.) to be almost sure to have seen such 'skeletons' before on the Belgian coast.

Due to its transparency, its light weight and its weak consistency the 'skeleton' might go unnoticed (especially when present in small numbers) between all the material in the high water mark, it might be blown inland or rapidly decay.

* MARBEL-communication n°. 1.

Suborder Leptomedusae

Aequorea vitrina GOSSE, 1853

According to LELOUP (1947) *Aequorea vitrina* is often found in large number between June and September, both in the sea and on the shore. A few years later he changes the word "parfois" in his statement to "occasionnellement" (LELOUP, 1952). I have not seen specimens of *A. vitrina* on the Belgian coast in the past fifteen years. Surprisingly, four specimens turned up in this year's jellyfish survey, at De Panne. Perhaps this is a direct result of drawing attention to jellyfish. All four were found in the first half of June.

Order Siphonophora

Physalia physalis (LINNAEUS, 1758)

A few specimens of the Portuguese man-of-war were found on the Belgian coast in April 1912 (LAMEERE, 1912) (see also under *V. velella*). WILSON (1947) summarized the records of this warm-water pleustonic siphonophore in Western Europe.

Sulculeolaria biloba (SARS, 1846)

LELOUP (1933) published a paper concerning the record of a siphonophore in front of the Belgian coast in June 1899. He called the species *Galetta australis* (LESUEUR, 1807). In fact two species of *Sulculeolaria* were described under the name *G. australis* in the past (KIRKPATRICK & PUGH, 1984). Fortunately the material is still present in the collections of the Koninklijk Belgisch Instituut voor Natuurwetenschappen, so that it could be reidentified as *S. biloba*. The preserved material comprises three posterior nectophores.

Class Scyphozoa

Order Semaestomeae

Pelagia noctiluca (FORSKAL, 1775)

syn. *P. perla* (SLABBER, 1781)

Some small individuals of *Pelagia noctiluca*, a warm-water species, common in the Mediterranean, were found once in Belgian waters, at Zeebrugge in 1929. (STIASNY, 1930). *P. noctiluca* is extremely rare in the southern North Sea. In the Netherlands an important invasion took place in the summer 1966 (VAN DER BAAN, 1967). This invasion, though it most probably entered the North Sea through the Channel, passed unnoticed along the Belgian coast.

Chrysaora hyoscella (LINNAEUS, 1766)

Chrysaora hyoscella is seen yearly in small numbers, though not necessarily as small as in 1988. Usually some jellyfish are found in late spring, with the bulk following in late summer to early autumn. This year (1988) a lonely *C. hyoscella* washed ashore on May 21st, a next one on July 16th, while the species was not seen later than September 7th.

Cyanea capillata (LINNAEUS, 1747)

Cyanea capillata is the name used by Belgian authors

	1	2	3	4	5
<i>Aurelia aurita</i>	141	240	300	500	1
<i>Chrysaora hyoscella</i>	2	4			15
<i>Cyanea capillata</i>	93	110	70	1	4
<i>Cyanea lamarckii</i>	45	95	40	6	
<i>Cyanea</i> sp.				1 ^o	20 ^o
<i>Rhizostoma octopus</i>	19	13			3
total no. of counts	28	49	7	12	-
no. posit. counts	16	25	6	5	>16*

Table 1. Number of counted jellyfish washed ashore on five stretches of beach in Belgium between May 7th and November 13th, 1988.

(1 : De Panne, 2 : Koksijde-Oostduinkerke, 3 : Oostende, 4 : De Haan, 5 : Knokke-Heist ; positive counts : jellyfish present ; ^o : probably to be added to *Cyanea capillata* ; * : only single observations, no systematic counts.)

(STIASNY, 1930 ; LELOUP, 1952) to designate the *Cyanea* jellyfish along our coast. When reading the description given by these authors, it becomes clear they joined both this and the next species as "*C. capillata*". RUSSELL (1970) clearly demonstrated that the genus comprises two species in northeast atlantic waters. Only very recently it was shown that both species do occur on the Belgian coast (RAPPÉ, 1987), *C. capillata* being the less common one. It is not recorded on a yearly basis, though for three successive seasons now, 1986-1988, it was not uncommon at all. It is a typical summer species. This, together with its severe stinging, makes it a public enemy in the bathing resorts along the Belgian coast. In 1986 it was observed between June 26th and August 22nd, in 1987 between June 7th and August 21st and in 1988 between May 28th and September 11th. Is this a coincidence or does it really appear earlier each year ? If the latter is true, one may wonder if it reproduces nearby. The most suitable area seems to be the Channel. However, most authors claim it is absent there (TEISSIER, 1965 ; RUSSELL, 1970 ; GLAÇON, 1977).

Highest numbers recorded were 100 on July 17th, 1987 and 41 on July 28th, 1988.

Cyanea lamarckii PÉRON & LESUEUR, 1809

syn. *C. capillata* auct. Belg

Cyanea lamarckii, a smaller species appears regularly on the beach. Normally it starts the jellyfish season, together with *Aurelia aurita*. Often it lasts longer than *A. aurita*, through part of the summer. As it is a small, common and inconspicuous species (no obvious invasions), very little detailed information is available. It was found between May 7th and August 3rd. Highest numbers in one single count some tens.

Aurelia aurita (LINNAEUS, 1746)

Aurelia aurita is the most common jellyfish in Belgian waters. It is found every year in considerable numbers. In this year's survey, the peak counts were rather low: at least 350 specimens at De Haan on May 26th, 150 at Oostende on May 21st and at Oostduinkerke on May 28th and 58 at De Panne on June 12th. In previous years much higher figures have been obtained, e.g. 5,700 specimens on a length of beach of 3.5 km on June 30th, 1983. The first *A. aurita* of the 1988 season was found on April 13th, the last one on July 23th. It is most abundant in May and June. In some years the species is seen again in small numbers in August-September. Whether this represents a second generation is not known. In other years the species lasts all summer in very low numbers. In the past, ephyrae have been observed in the Sluice-dock at Oostende and in the channel that connects Brugge with the sea (LELOUP, 1947). Recent reproduction along the Belgian coast has not yet been demonstrated. Suitable habitats for the polyp are the many breakwaters, jetties and harbour constructions.

Order Rhizostomeae

Rhizostoma octopus (LINNAEUS, 1788)

Rhizostoma octopus, a giant blue jellyfish, turns up on the beach every year. Typically it appears in late summer. It can be seen until December.

Sometimes it is present in large quantities, e.g. at least 2,000 on a beach of 3 km November 3th, 1987. This apparently was not the case in 1988. The first *R. octopus* was found on September 3rd, the last one on November 13th.

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CTENOPHORA

Class Tentaculata

Order Cydippida

Pleurobrachia pileus (O.F. MUELLER, 1776)

Pleurobrachia pileus is very common along the Belgian coast. It can be observed the year round, with smallest numbers in winter and a distinct peak in late spring.

Class Atentaculata

Order Beroidea

Beroë gracilis KUENNE, 1939

syn. *B. cucumis* auct. Belg.

Up to 1982 the *Beroë* sp. occurring in the Belgian waters was designated by the name *Beroë cucumis* Fabricius, 1780. Then KERCKHOF (1982) established its true identity. The typical *Beroë* species in the southern North Sea is *Beroë gracilis*. *B. gracilis* is considerably smaller than the real *B. cucumis*: 0.5-2 cm versus 5-16 cm! This difference in size was already commented upon by LELOUP (1952), though he failed to draw the right conclusions. There are also distinct differences in morphology.

B. cucumis is a northern species, feeding on a northern combjelly of the genus *Bolinopsis*. *B. gracilis* feeds on the abundant *P. pileus*. At times, it can appear in fairly high numbers, especially in June.

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Guido RAPPÉ
Kapelstraat 3, B-9890 Ursel