

SHORT NOTE ON THE OCCURRENCE OF CUMACEA IN THE SURFACE PLANKTON COLLECTED AT "TEXEL" LIGHTSHIP IN THE SOUTHERN NORTH SEA

by

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From mid-January 1961 until the end of 1966 macroplankton was collected in the surface water of the North Sea around "Texel" lightship (position: 53°01'30"N 04°22'E). As pointed out in a recent paper on decapod larvae (Van der Baan, Holthuis & Schrieken, 1972) the plankton nets were originally intended for collecting elvers and medusae, and the numbers of smaller species obtained, such as larvae and also Cumacea, was greatly influenced by incidental circumstances. Therefore no great significance can be attached to the actual numbers of these smaller animals.

Cumacea are mostly bottom-dwelling species, and cannot regularly be expected in surface waters. Still, four species were found in our samples viz.:

Diastylis bradyi Norman, 1879

Iphinoe trispinosa (Goodsir, 1843)

Pseudocuma similis G.O. Sars, 1900

Bodotria scorpioides (Montagu, 1804)

The last two species are very small. They were only held back by the nets in a very few cases, when the meshes got clogged by great quantities of algae or various animal species.

According to Zimmer all the above species belong to those Cumacea which are found throughout the North Sea (Zimmer, 1933: 110) and also to the species which, by vertical migration, can be found at the surface at night, especially during the reproductive periods.

The only specimen of *Bodotria scorpioides* was caught in the evening, in a flood haul. Of the 15 hauls in which *Pseudocuma similis* occurred, 3 were made by day, the others completely or partly during the dark hours;

eight of the hauls were flood hauls, the other seven ebb hauls. *Iphinoe trispinosa* was caught in 158 hauls, 13 hauls by daylight, the others either partly or completely in the dark hours, and 85 were flood hauls, 73 ebb hauls. *Diastylis* (in a few damaged specimens the species could not be identified with certainty, but in all other cases it proved to be *D. bradyi*, so so that we assume that all the specimens belong to that species) occurred in 88 hauls, of which only 2 were made in full daylight, the rest again completely or partly in the dark hours; 40 hauls were flood hauls, the other 48 ebb hauls.

In all species there is a clear preponderance of night catches, which agrees with Zimmer's statement that these species show a diurnal migration and come to the surface at night. The condition of rising or falling tide does not seem to influence the occurrence of *Pseudocuma*, *Iphinoe* or *Diastylis* in the surface waters near the lightship.

As to the seasonal occurrence, the only specimen of *Bodotria* was found in October, those of *Pseudocuma* in July (7 specimens), August (19), September (1) and October (5), those of *Diastylis* between June and January (June: 4, July: 18, August: 76, September: 24, October: 15, November: 47; December: 9, January: 19), *Iphinoe* was found almost throughout the year with a distinct peak in the last 5 months (January: 10, February: 2, March: 2, April: 5, May: 1, June: 4, July: 3, August: 132, September: 145, October: 33, November: 59, December: 64). Information on the life histories of Cumacea is not plentiful. Corey (1969) reported that *Iphinoe trispinosa* has two generations per year, one in the spring and one in late summer and autumn. If the occurrence of the species in the surface waters near the lightship is related to the reproductive period, then one would suppose that of the 2 periods the one in the summer and autumn in this area is the more important of the two. Krüger (1940) found for *Diastylis rathkei* only one reproductive period per year, viz., around November. If *Diastylis bradyi* in this respect resembles the closely related *D. rathkei*, its occurrence near lightship could well be influenced by the reproductive period.

The fact that *Diastylis bradyi* and not *D. rathkei* is found near the lightship may be due to the substratum in the area of the lightship being mainly sandy, while *D. rathkei* is an inhabitant of muddy areas.

Table 1 indicates the month and the greatest size of the catches made of the various species. As pointed out above not too much value can be attached to the number of specimens collected because the gear used was not suitable for obtaining small specimens. Another factor influencing the number of specimens caught is that in the various years the numbers of

Table I

Date	<i>Diastylis bradyi</i>		<i>Iphinoe trispinosa</i>		<i>Pseudocuma similis</i>		<i>Bodotria scorpioides</i>	
	A	B	A	B	A	B	A	B
1961 Sept.	1	1	11	1				
Oct.	1	1	1	1				
Nov.	1	1	6	1				
Dec.	1	1	10	5				
1962 Jan.	3	3	1	1				
July			1	1				
Aug.								
Sept.			1	1				
Oct.	3	1	4	2	4	3		
Nov.	7	2	3	2				
Dec.								
1963 Jan.	1	1						
Aug.			1	1	4	2		
Sept.	1	1	1	1	1	1		
Oct.	7	3						
1964 July			1	1	7	3		
Aug.	11	3	23	6	14	9		
Sept.			19	6				
Oct.	2	1	27	7				1
Nov.	13	3	33	5				
Dec.	3	1	30	11				
1965 Jan.	12	9	7	3				
Febr.			2	1				
Mar.			1	1				
Apr.			3	1				
May								
June	4	4						
July	9	8						
Aug.	52	25	107	64	1	1		
Sept.	21	9	113	66				
Oct.					1	1		
Nov.	25	6	16	3				
Dec.	2	1	23	10				
1966 Jan.	3	2	2	1				
Febr.								
Mar.			1	1				
Apr.			2	1				
May			1	1				
June			4	3				
July	9	7	1	1				
Aug.	13	6	1	1				
Sept.	1	1						
Oct.	2	2	1	1				
Nov.	1	1	1	1				
Dec.	3	1	1	1				

A = Total number per month; B = Highest number per haul.

samples taken was not the same: in 1961 and 1962 fishing was practically continuous: the net being emptied at each turn of the tide, weather permitting. In 1963 to 1965 12 hauls were made per week (each haul covering a full period of flood or ebb), whenever possible in consecutive tides. In 1966 the number of hauls per week was reduced to 6, again if possible in consecutive tides.

Since the catch of Cumacea was so largely influenced by circumstances, no attempt has been made to reduce the figures to time units. Even so, it appears from the table that 1964 and 1965 seem to have been very productive years.

Our data as a whole are too incomplete and too uncertain to permit of any definite conclusions, but they are too interesting not to be presented, especially since so little is known about the occurrence of the various species in this area.

SAMENVATTING

Tijdens het macroplanktononderzoek van 1961 t/m 1966, uitgevoerd bij het lichtschip „Texel”, werden 4 soorten Cumacea gevangen. De gebruikte netten waren niet berekend op de vangst van deze kleine soorten, zodat de hier gegeven getallen geen juist beeld geven van de aantallen dieren die in het plankton aanwezig waren. Van alle soorten kon worden vastgesteld dat zij vooral in de donkere uren gevangen werden. *Pseudocuma similis* en *Bodotria scorpioides* waren te klein voor de maaswijdte van de gebruikte netten, zij werden slechts gevangen wanneer de mazen van het net verstopt raakten, b.v. door grote massa's algen. Waar *Diastylis* gedetermineerd kon worden bleek het steeds *D. bradyi* te zijn, een soort die een zandige bodem prefereert. *Iphinoe trispinosa* werd het gehele jaar door gevonden, maar was duidelijk algemener in de periode van augustus t/m december.

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