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Some data on the Icelandic catch of shrimp in the  
Denmark Strait area in 1983

by

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I. Catch data

In 1983 the Icelandic shrimp catch in the Denmark Strait area amounted to approximately 15 tons, whereas no Icelandic catch was reported from this area in 1982. Apart from the varying distribution patterns of the shrimp in the Denmark Strait, the reasons for low catches of Icelandic boats are thought to be mainly due to unfavorable weather and ice conditions. Moreover, catch per effort was high in the area north of Iceland, making shrimping more advantageous in that area. Table 1 itemizes the Icelandic shrimp fishery in the Denmark Strait in 1983.

II. Sampling data

Table 2 shows the number of Icelandic samples taken in the Denmark Strait by years and months in the period 1976 to 1983. As indicated only three samples were obtained from the area in 1983, two in August and one in October.

Furthermore, Tables 3 and 4 show the length distributions of the August and October samples, measured to the nearest 0.5 mm. Also the sexual maturity stages are indicated regarding males and females with or without sternal spines or berried. Unfortunately, the males and females, both with and without sternal spines, were not treated separately in the October sample.

Skúladóttir (1981) has demonstrated the possibility of tracing deviations in length groups from a mean length distribution of a certain number of years in inshore shrimp stocks at Iceland. The annual movements by month of such deviations of the length distribution are interpreted as growth of a certain year-class or year-classes. In continuation, this method was applied to the Icelandic Denmark Strait August samples from 1979 to 1983. Fig. 1 shows the annual deviations by length groups based on the average length distribution during 1979 to 1983. As shown in the figure, there are certain signs of either positive or negative deviations moving up the length distribution during the period, indicating that these might be related to growth and/or year-class strength. Positive deviations shown from 1979 to 1980 in shrimp above 32 mm carapace length point to an effect from the fishery in the largest shrimp when these are compared to the negative deviations observed in the years 1981 to 1983. Furthermore, a positive top in 1980 around 26 to 28 mm carapace length can be traced upwards to about 29 to 32 mm carapace length in 1983. Similarly, a negative deviation can be traced from 29 to 31 carapace length in 1980 to about 32 to 34 mm carapace length in 1983. These deviations indicate that the growth of shrimp in this area could be only about 1 to 1.5 mm a year within the size range mentioned above.

References

- SKULADOTTIR, U. 1981. The deviation method. A simple method for detecting year-classes of a population of *Pandalus borealis* from length distributions. Proc. of the International Pandalid Shrimp Symposium, Feb. 13-15, 1979, Kodiak Alaska. Sea Grant Report 81-3: 283-307 p.

Table 1. The Icelandic shrimp fishery in the Denmark Strait in 1983, by trawling hours, landings and catch per trawling hour.

Month	No. trawling hours	Catch (tons)	kg/hour
May	2	0.1	50
Jun	48	4.7	99
Oct	5	2.0	400
Nov	59	8.0	135
Total	114	14.8	130 (Average CPUE)

Table 2. Number of Icelandic samples from the Denmark Strait by years and months during 1976-1983.

Year/month	J	F	M	A	M	J	J	A	S	O	N	D
1976									2	1		
1977												
1978					3		1			1	2	
1979						1		5	5	1	1	
1980						2	3	1		35		
1981		2	2	3				6				
1982			1	4				2				
1983								2		1		

Table 3. Length frequency distribution of shrimp by sex in August 1983.

CL mm	♂	♀ <sup>1</sup>	♀ <sup>2</sup>	♀e	Total
19.5	1				1
20					
20.5	1				1
20.5	2				2
21	1				1
21.5	3				3
22	2				2
22.5	10				10
23	4				4
23.5	7				7
24	7				7
24.5	11				11
25	7				7
25.5	8				8
26	5		1		6
26.5	1	1			2
27	6				6
27.5	2				2
28			3		3
28.5			8		8
29			6		6
29.5			7		7
30			7		7
30.5			6		6
31			12		12
31.5			6		6
32			1		1
32.5			1		1
33			2		2
33.5				1	1
34				1	1
34.5				1	1
35				1	1
Total	78	1	55	84	218
Mean CL	24.6		30.2	30.0	28.1

Table 4. Length frequency distribution by sex in October 1983.

CL mm	♂	♀ <sup>1</sup>	♀ <sup>2</sup>	♀e	Total
19.5					
20					
20.5		1			1
20.5		2			2
21		1			1
21.5		1			1
22		3			3
22.5		1			1
23		2			2
23.5		3			3
24		2			2
24.5		2			2
25		3			3
25.5		4			4
26		4			4
26.5		4			4
27		3			3
27.5		1			1
28		3		2	5
28.5		1		3	4
29		4		2	6
29.5		6		3	9
30		1		6	7
30.5		2		3	5
31		5		3	8
31.5		2		3	5
32		2		2	4
32.5		3		3	6
33		1		1	2
33.5				1	1
34				1	1
34.5				1	1
Total		62		38	100
Mean CL		25.6		30.2	28.3

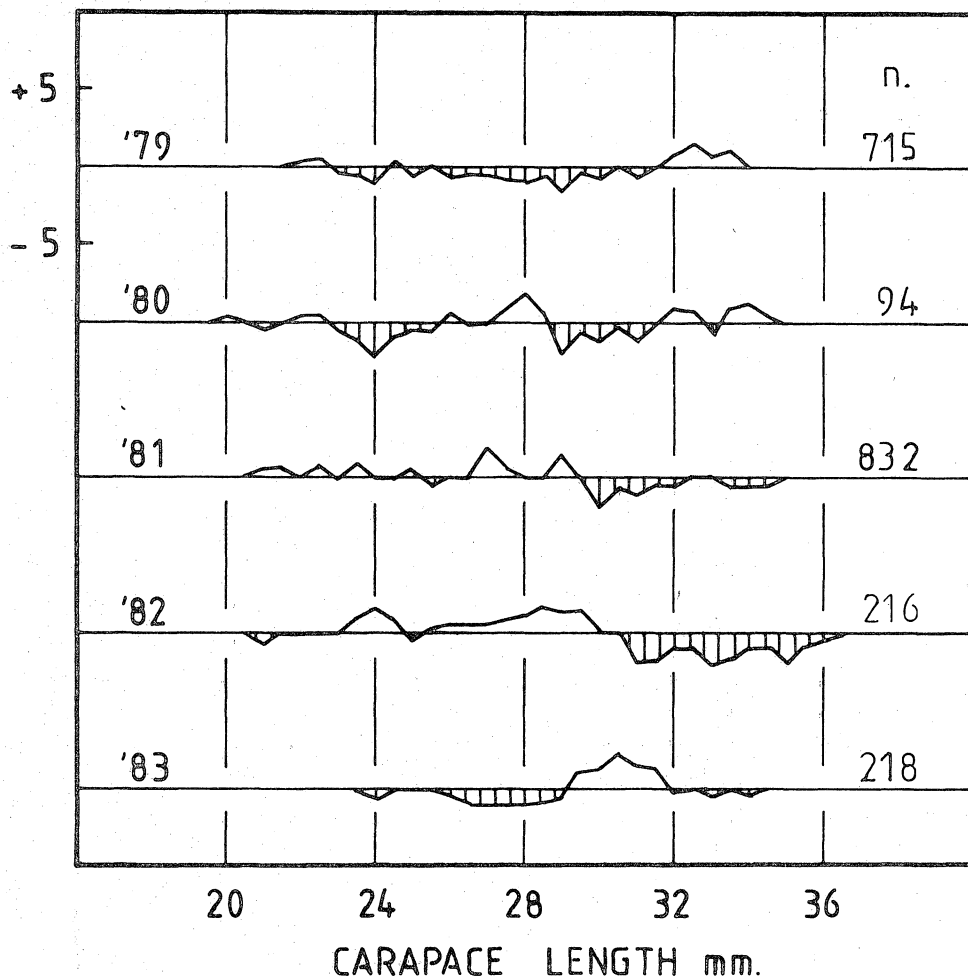


Fig. 1. Deviations of length groups by years, based on the average length distribution of the period 1979-1983.