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The Icelandic Shrimp Fishery (*Pandalus borealis*)
in the Denmark Strait in 1992 and early 1993

by

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Catch data

In 1992 the fishery was carried out from April onwards. The total catch in the year was 1440 tons in 1992 (table 1) as compared to 465 tons in 1991, and the mean CPUE for the whole year was 208 kg per trawling hour as compared to 195 kg in 1991. As the fishermen remembered the very high catch rate of May 1991 there was more effort in the area in 1992 than ever before. Also the ice conditions were not as bad as usually in the years prior to 1991. It is noticeable that there are new grounds more to the east than ever before i.e. in stratum 676 (table 2. and fig 2.). The first time any catch in stratum 676 has been reported was in 1991 when 3 tons were caught (Skúladóttir 1992).

The average size of gear namely 2441 meshes which is similar to that of most years i.e. about 2400 meshes (Skúladóttir 1992). The size, is the number of meshes in the circumference of the foremost belly based on 36 mm open mesh. When a different mesh size in the belly is used the circumference size still corresponds to the number of meshes of 36 mm mesh size.

Commercial Samples

The samples were all obtained from shrimpers in the year 1993. The small samples are compiled by month and stratum (tables 3-7, figs. 1 and 2). The male length frequency distribution (lfd) is always very prominent and makes up 66 % of all specimens studied. This is similar to what was found in samples from 1990 through 1992, but very different from the period 1987-1989 (Hallgrímsson and Skúladóttir 1988) and (Skúladóttir 1991). The modes in the lfd of males are not very clear except for that of stratum 627 in May where about 5 modes can be seen, namely at 17.5 (very small), 20, 22, 24 and a small indistinct one at 26-27 mm. The mature female lfd has in some cases three very distinct modes, namely in April in stratum 676 the modes occur at about 26.5, 28.5, 30 and 32 mm respectively. In stratum 627 in May the modes seem to occur at 28, 30 and 32 mm respectively. In the overall lfd of females in April through May and strata 627, 676 and 677 combined, there could be even four modes, namely one very small at 26, and the rest like before i.e. at 28, 30, 32 mm respectively. The small female mode at 26 mm is most prominent in the easternmost stratum 676. Possibly there is a minor mixing from the Icelandic deep sea stocks.

References

Hallgrímsson, I. and U. Skúladóttir. 1988. The Icelandic shrimp (*Pandalus borealis*) in the Denmark Strait in 1987. NAFO SCR Doc. No. 64. Serial No. N1506, 10 p.

Skúladóttir, U. 1991 The Icelandic Shrimp fishery (*Pandalus borealis*) in the Denmark Strait in 1989 and early 1990. NAFO SCR Doc. No. 91. Serial No. N1956, 16 p.

1992 The Icelandic Shrimp fishery (*Pandalus borealis*) in the Denmark Strait in 1991 and early 1992. NAFO SCR Doc. No. 62. Serial No. N2116, 7 p.

Table 1. The catch, effort and CPUE as reported by Icelandic logbooks, in the Denmark Strait in 1992. It is considered that the catch was reported 100 %.

YEAR	FROM LOGBOOKS		
	CPUE kg/hr	EFFORT Tr. hours	CATCH Tonnes
1992			
April	325	2857	928.4
May	127	3915	495.7
June	116	23	2.7
Σ April-June	210	6795	1426.8
July	105	103	10.8
August	116	7	0.8
September	17	6	0.1
October	82	13	1.0
Σ Jul-Oct	98	129	13
Total 1992	208	6924	1439.5

Table 2. Nominal catch (tonnes) per stratum and month in 1992.

Month	Stratum number							
	626	627	628	676	677	678	727	779
April	48.17	34.93	0.04	580.50	284.77	0.02		
May	7.60	240.92	0.11	49.14	197.89			
June								2.70
July	0.30			0.65	9.42	0.46		
August						0.81		
September		0.02	0.08					
October		0.15	0.30			0.03	0.56	
Total	56.07	276.02	0.53	610.29	492.08	1.32	0.56	2.70

Table 3. The length distribution by 3 major categories, namely males, transitionals and immature females combined, and females with no sternal spines. At the bottom there are sums and mean CL by the 9 sexual categories as explained below.

April 1993		Stratum 627		
CL mm	♂	♀ ♀	♀ no spines	Σ
14				
14.5				
15	1			1
15.5	1			1
16				
16.5	3			3
17	6			6
17.5	4			4
18	10			10
18.5	14			14
19	28			28
19.5	23			23
20	38			38
20.5	23			23
21	50			50
21.5	41			41
22	48	1		49
22.5	39		1	40
23	43	3	1	47
23.5	49	7	3	59
24	52	2	3	57
24.5	28	5	4	37
25	47	6	2	55
25.5	40	3	8	51
26	15	8	5	28
26.5	25	11	6	42
27	15	7	7	29
27.5	5	13	14	32
28	3	10	14	27
28.5	2	6	10	18
29		8	22	30
29.5		2	19	21
30		1	18	19
30.5			22	22
31			15	15
31.5			11	11
32			10	10
32.5			8	8
33			2	2
33.5			1	1
34			1	1
34.5				
35				
35.5			1	1
Σ	653	93	208	954
Σ	ma	mi	mg	gm
mean CL	653	11	3	79
%	22.62	25.05	26.17	26.79
	68.45	1.15	0.31	8.28
Σ	ag	ga	ea	em
mean CL	8	37	1	162
%	28.56	29.64	25.50	29.01
	0.84	3.86	0.10	16.98
Σ	eg			
mean CL	0			
%				

The legend used in tables 3-7:

- ma Males.
- mi Transitionals.
- mg Females with sternal spines, no headroes.
- gm Females with sternal spines, with headroes.
- ag Females without sternal spines, no headroes, not berried but at times with egg hairs.
- ga Females without sternal spines, with headroes, not berried.
- ea Females with green eggs, no eyespots.
- em Females with eggs with eyespots.
- eg Females with eggs with eyespots and also with headroes.

Table 4. The same legend as in table 3

April 1993		Stratum 677		
CL mm	♂	♀ ♀	♀ no spines	Σ
14				
14.5				
15				
15.5				
16				
16.5				
17				
17.5	1			1
18	2			2
18.5				
19				
19.5	2			2
20				
20.5	2			2
21	5			5
21.5	5			5
22	5			5
22.5	10			10
23	7		1	8
23.5	8		2	10
24	6	1		7
24.5	11		1	12
25	6			6
25.5	5		1	6
26	3		1	4
26.5	2	1		3
27	2	1	3	6
27.5	1		2	3
28		2	6	8
28.5		1	2	3
29		1	2	3
29.5			4	4
30			1	1
30.5			2	2
31			1	1
31.5				
32			2	2
32.5			1	1
33			1	1
33.5			1	1
34			1	1
34.5				
35				
35.5				
Σ	83	7	35	125
Σ	ma	mi	mg	gm
mean CL	83	1	0	6
%	23.30	24.00		27.83
	66.40	0.80		4.80
Σ	ag	ga	ea	em
mean CL	1	6	0	27
%	28.50	31.08		28.15
	0.80	4.80		21.60
Σ	eg			
mean CL	1			
%	27			
	0.8			

Table 5. The same legend as in table 3

April 1993		Stratum 676		
CL mm	♂	♀ ♀	♀ no spines	Σ
14				
14.5				
15				
15.5				
16				
16.5				
17				
17.5				
18				
18.5				
19	4			4
19.5	2			2
20	7			7
20.5	6			6
21	4			4
21.5	6			6
22	9			9
22.5	15		1	16
23	12	1		13
23.5	10			10
24	9	2		11
24.5	14	1		15
25	5		1	6
25.5	7	2	3	12
26	2		3	5
26.5	2		5	7
27	4	2	3	9
27.5	2			2
28	1	1	4	6
28.5		3	7	10
29			6	6
29.5		1	6	7
30			11	11
30.5			4	4
31			4	4
31.5			2	2
32			8	8
32.5			2	2
33				
33.5			1	1
34				
34.5			1	1
35				
35.5			1	1
Σ	121	13	73	207
Σ	ma	mi	mg	gm
mean CL	121	5	0	8
%	23.11	24.20		27.81
	58.45	2.42		3.86
Σ	ag	ga	ea	em
mean CL	1	14	0	58
%	25.50	30.68		29.08
	0.48	6.76		28.02
Σ	eg			
mean CL	0			
%				

Table 6. The same legend as in table 3

May 1993		Stratum 627		
CL mm	♂	♀ ♀	♀ no spines	Σ
14				
14.5				
15				
15.5				
16				
16.5				
17	1			1
17.5	1			1
18	1			1
18.5				
19	1			1
19.5	2			2
20	3			3
20.5	2			2
21	5			5
21.5	4			4
22	4		1	5
22.5	3	1		4
23	6			6
23.5	5		1	6
24	8			8
24.5	4	1		5
25	1			1
25.5	2	1	2	5
26	1		1	2
26.5				
27	1	1	2	4
27.5	1	1	3	5
28		2	3	5
28.5		1	2	3
29		2	1	3
29.5			4	4
30			5	5
30.5			2	2
31			2	2
31.5			1	1
32			6	6
32.5			3	3
33				
33.5				
34				
34.5				
35				
35.5				
Σ	56	10	39	105
Σ	ma 56	mi 1	mg 0	gm 9
mean CL	22.50	24.50		27.22
%	53.33	0.95		8.57
Σ	ag 1	ga 10	ea 0	em 28
mean CL	23.50	28.85		29.61
%	0.95	9.52		26.67
Σ	eg 0			
mean CL				
%				

Table 7. The same legend as in table 3

April/May 1993		Stratum 627,676,677		
CL mm	♂	♀ ♀	♀ no spines	Σ
14				
14.5				
15	1			1
15.5	1			1
16				
16.5	3			3
17	7			7
17.5	6			6
18	13			13
18.5	14			14
19	33			33
19.5	29			29
20	48			48
20.5	33			33
21	64			64
21.5	56			56
22	66	1	1	68
22.5	67	1	2	70
23	68	4	2	74
23.5	72	7	6	85
24	75	5	3	83
24.5	57	7	5	69
25	59	6	3	68
25.5	54	6	14	74
26	21	8	10	39
26.5	29	12	11	52
27	22	11	15	48
27.5	9	14	19	42
28	4	15	27	46
28.5	2	11	21	34
29		11	31	42
29.5		3	33	36
30		1	35	36
30.5			30	30
31			22	22
31.5			14	14
32			26	26
32.5			14	14
33			3	3
33.5			3	3
34			2	2
34.5			1	1
35				
35.5			2	2
Σ	913	123	355	1391
Σ	ma 913	mi 18	mg 3	gm 102
mean CL	22.74	24.72	26.17	26.97
%	65.64	1.29	0.22	7.33
Σ	ag 11	ga 67	ea 1	em 275
mean CL	27.82	29.87	25.50	29.00
%	0.79	4.82	0.07	19.77
Σ	eg 1			
mean CL	27			
%	0.07189			

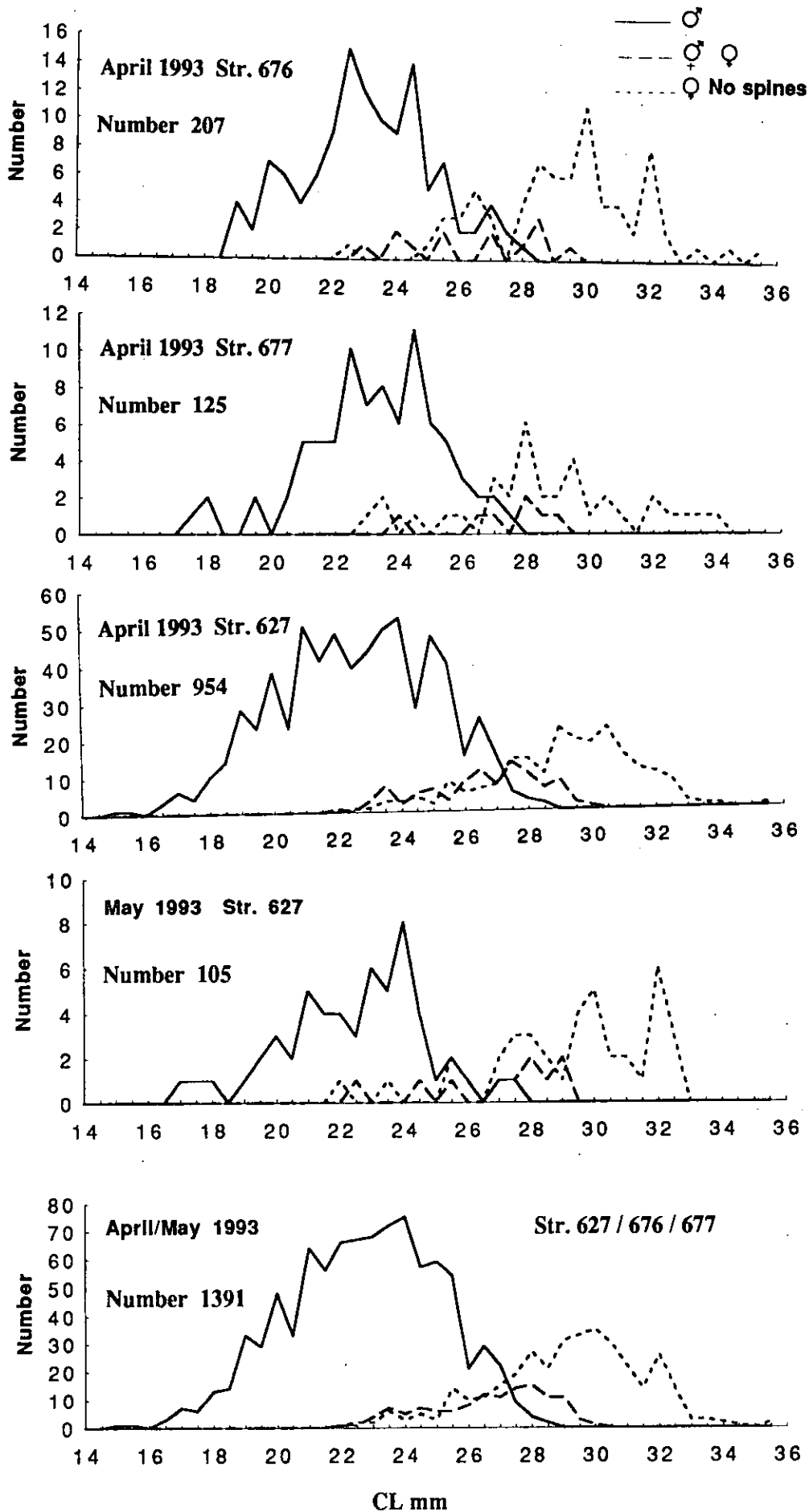


Fig. 1. The samples obtained in 1993 compiled by month and stratum, see tables 3-7.

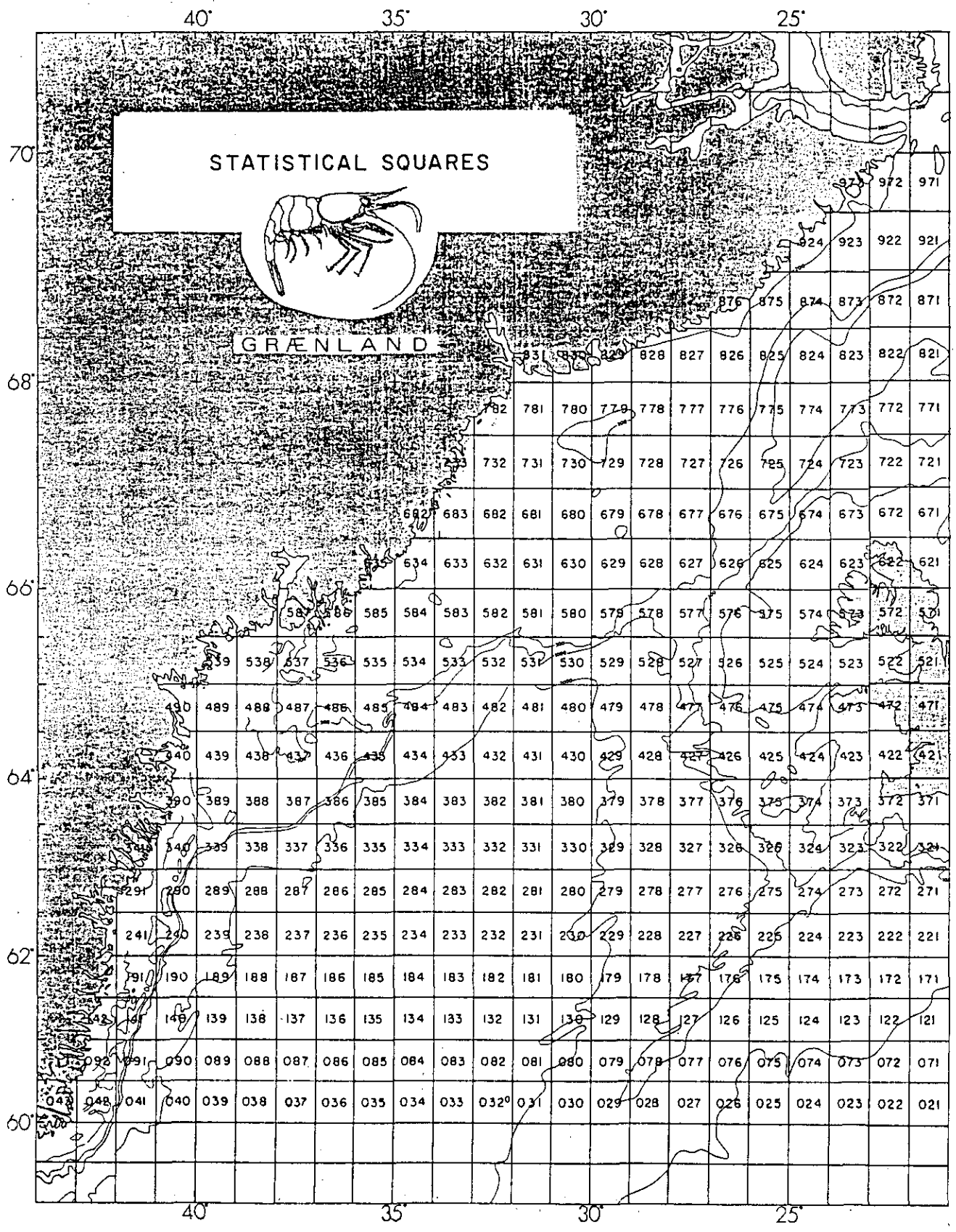


Figure 2. The strata numbers in the Denmark Strait.