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Status of the Cod stock in  
Divisions 3L, 3M and 3N, in 1983

by

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Introduction

During 1983, as part of the Spanish program of observers in NAFO waters, J. Zamarro and L. Suarez were on board two Spanish pair trawlers: Puente del Carmen - P. de Triana and Meixueiro - Xaxan, both PTB-5 class, to sample the catch and collect cod otoliths.

The Spanish catch and sampling intensity are shown in table 1. Otoliths were read by the authors for age determination and values accepted by agreement between two readers.

Results

An estimate of the age composition of the cod catches is shown in table 2 and figure 1. The length frequency distributions used were calculated by weighting the sample data with the catch from the corresponding haul.

In Division 3N there was an unusual abundance of cod of small size. The biggest year class in the catch was that of 1980, the 3 years age group, in spite of its low partial recruitment. This year class was recorded as a good one in 1982, which is now supported by the new data. This may signify that a very good year class is now entering the fishery. Of the larger sizes, the 1974 and 1978 year classes, the most important age groups in 1982, continued to be abundant in 1983. So too did the 1975 year class.

In Division 3M the catch of large sizes was limited. The 1978 and 1980 year classes were the most abundant ones. In Division 3L the same year classes provided the bulk of the catch.

Table 3 shows the catch and effort data of the Spanish fleet in the three divisions visited. From them, the catch-rate indices calculated using the multiplicative model were:

3N - 0.698 MT/h. SPA PTB-4

3M - 0.789 "

3L - 1.680 "

For Division 3N in 1982 this index was 0.52 MT/h.. This means that there was a increase in abundance in the last year. It is necessary to point out that catches in both years were obtained in the southern corner of the Grand Bank, a zone that is certainly supporting greater fishing effort at present.

TABLE 1.- Spanish comercial sampling in NAFO waters.

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<u>Div.</u>	<u>nº measured</u>	<u>nº aged</u>	<u>sampling weight MT</u>	<u>catch MT</u>
3L	2,324	296	3.06	5,062
3M	1,114	75	2.61	4,407
3N	11,179	1,259	39.59	12,320

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TABLE 2.- Catch at age: numbers  $\times 10^{-3}$ , mean weight in gr. and mean length.

AGE	Division 3N												3M		3L	
	April			May			June			July			April	June	June	
	n°	weight	l	n°	weight	l	n°	weight	l	n°	weight	l	n°	n°	n°	
2	-	19	250	31	110	186	28	189	210	29	14	250	31			2
3	-	116	480	38	238	427	36	426	414	36	80	641	42	23	40	207
4	-	46	982	47	66	862	45	117	842	45	5	1347	53	12	37	101
5	-	66	1571	56	73	1697	57	111	1540	55	10	1876	59	32	76	555
6	-	27	2133	61	48	2640	65	49	2458	63	11	2625	65	9	81	198
7	-	5	3493	72	40	5177	81	44	5357	82	32	4944	80		7	38
8	-	4	5316	81	115	7413	92	121	7059	90	72	6689	89			23
9	-	2	7215	91	79	8438	95	75	7676	93	54	7333	91			14
10	-				28	10912	104	17	10147	101	18	-	-			
11	-				17	13468	112	8	13462	112	2	-	-			
12	-				11	15309	116	5	15225	116						
13	-				3	16500	119	1	16292	119						
14	-				2	15328	116									
15	-															
16+	-				3	-	-	1	-	-						
n° samples		1			32			24			6			1	4	11
catch (MT)		319			2980			2673			1439			122	678	1587

TABLE 3.- Cod catches (MT) and fishing effort (hours) of Spanish fleet during 1983.

month	3N				3M				3L				
	PTB-4		PTB-5		PTB-4		PTB-5		PTB-4		PTB-5		
	catch	f	catch	f	catch	f	catch	f	catch	f	catch	f	
JAN	-	-	114	173	-	-	2	11	-	-	77	104	
FEB	-	-	150	173	-	-	-	-	-	-	38	10	
MAR	-	-	71	336	-	-	97	77	29	22	28	11	
APR	-	44	51	275	378	69	410	53	135	490	408	-	8
MAY	-	2423	3221	557	686	110	200	15	27	733	492	162	40
JUN	-	2498	1657	175	244	598	947	80	49	1197	1536	390	182
JUL	-	1360	1219	79	59	221	423	-	-	508	220	-	-
AUG	-	137	225	9	41	363	684	-	-	95	275	-	-
SEP	-	415	662	89	284	712	1434	-	-	-	-	-	-
OCT	-	896	1216	69	239	1138	2031	238	330	120	152	-	-
NOV	-	2059	2600	73	353	41	66	374	591	107	241	-	-
DEC	-	716	912	111	133	146	526	150	121	985	338	103	87
total	-	10548	11763	1772	3099	3398	6721	1009	1341	4264	3684	789	442

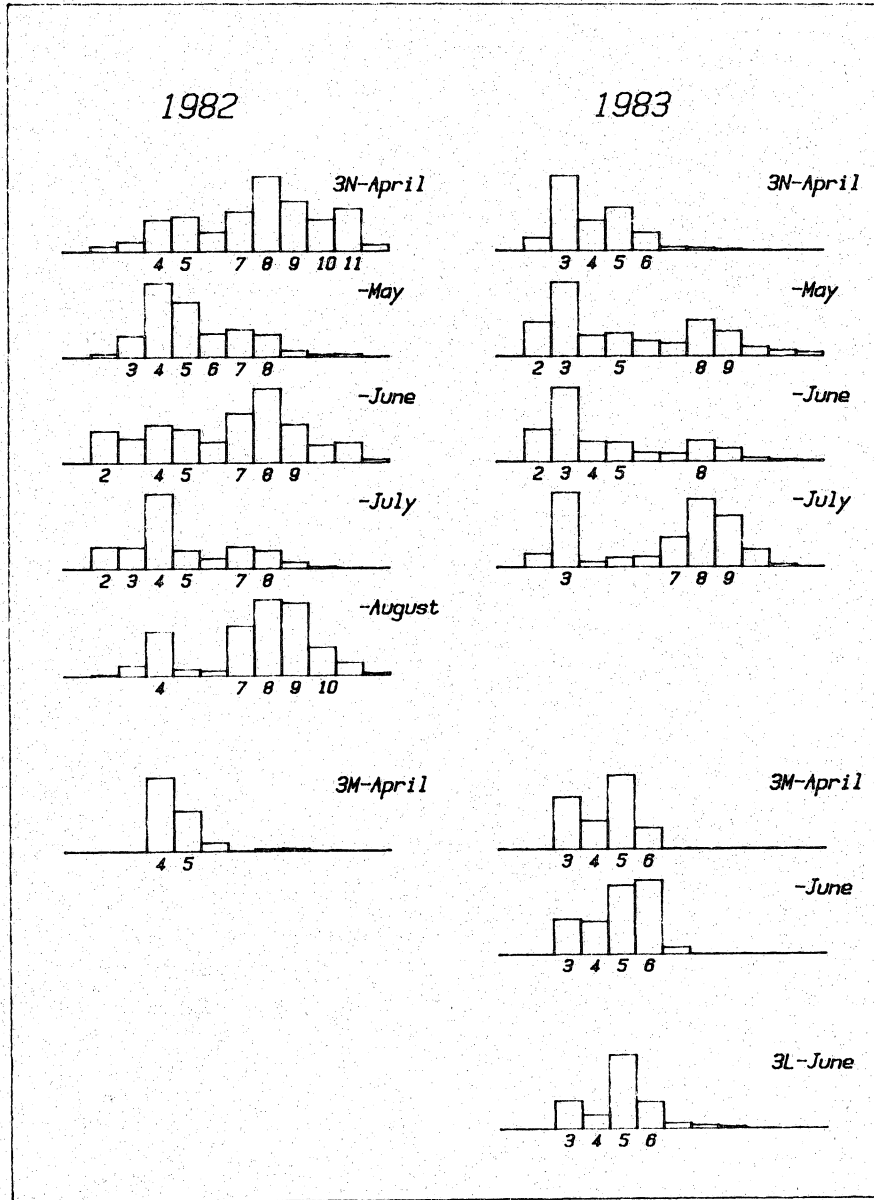


FIGURE 1.- Catch at age distribution.