



COMITE DES POISSONS DE FOND

par  
Cl. Marin

1977

Allemagne (République Démocratique)

(P. Ernst)

Sampling: COD

| Area                                        | Season | Type of Fish      | No. of Samples |        | No. of Fish |       |                   |
|---------------------------------------------|--------|-------------------|----------------|--------|-------------|-------|-------------------|
|                                             |        |                   | Vessel         | Market | measured    | aged  | examined racially |
| IIa (NW-Norway)                             | 4      | Adults/<br>Immat. | 5              | -      | 1 506       | 807   | -                 |
| IIb (W-Spitsbergen)                         | 3      | "                 | 11             | -      | 1 807       | 450   | -                 |
|                                             | 4      | "                 | 55             | -      | 3 724       | 1 066 | -                 |
| Sampling: <u>GREENLAND HALIBUT</u>          |        |                   |                |        |             |       |                   |
| IIa (NW-Norway)                             | 4      | Adults/<br>Immat. | 5              | -      | 209         | 100   | -                 |
| IIb (W-Spitsbergen,<br>Bear-Island)         | 3      | "                 | 35             | -      | 5 680       | 1 311 | -                 |
|                                             | 4      | "                 | 29             | -      | 3 839       | 967   | - x)              |
| Sampling: <u>REDFISH (Sebastes marinus)</u> |        |                   |                |        |             |       |                   |
| IIa (N-Norway)                              | 4      | Adults/<br>Immat. | 14             | -      | 756         | -     | -                 |
| IIa (North-Cape)                            | 4      | "                 | 18             | -      | 521         | -     | -                 |
| IIb (Bear-Island-Spitsbergen)               | 4      | "                 | 54             | 2      | 3 707       | 200   | -                 |

x) Parasitological investigations of Greenland Halibut (Bear Island) were carried out.

Sampling: REDFISH (Sebastes mentella)

| Area                                                   | Season | Type of Fish                | No. of Samples |        | No. of Fish |       |                   |
|--------------------------------------------------------|--------|-----------------------------|----------------|--------|-------------|-------|-------------------|
|                                                        |        |                             | Vessel         | Market | measured    | aged  | examined racially |
| IIa (Kopytov)                                          | 2      | Adults/<br>Immat.           | 3              | -      | -           | 828   | -                 |
| IIa (North-Cape)                                       | 4      | "                           | 15             | -      | 594         | -     | -                 |
| IIb (Bear Island/Spitsbergen)                          | 3      | "                           | 14             | -      | 4 721       | 1 100 | -                 |
| IIb (Bear-Island/Spitsbergen)                          | 4      | "                           | 71             | -      | 6 218       | -     | -                 |
| Sampling: <u>REDFISH</u> ( <u>Sebastes viviparus</u> ) |        |                             |                |        |             |       |                   |
| IVa (Eastern North Sea)                                | 3      | Adults/<br>Immat.           | 2              | -      | 221         | -     | -                 |
| IIa (West Norway)                                      | 4      | "                           | 4              | -      | 100         | -     | -                 |
| Sampling: <u>SAITHE</u>                                |        |                             |                |        |             |       |                   |
| IIa (Svinøy, Haltenbank, Röst)                         | 1      | Adults,<br>Spawn.<br>Immat. | 22             | -      | 9 945       | 2 000 | -                 |
| IIId (Fugloy, Röst)                                    | 4      | Immat./<br>Adults           | 7              | -      | 1 303       | 615   | -                 |
| IVa (Finkenwerder)                                     | 3      | "                           | 5              | -      | 729         | 616   | -                 |

Tagging: No tagging experiments were carried out in 1977.

Research Vessel Surveys

| Area                                                   | Dates             | Objectives                              |
|--------------------------------------------------------|-------------------|-----------------------------------------|
| Northern North Sea                                     | 16 - 18 Sept.     | Saithe                                  |
| Bear-Island, West Spitsbergen                          | 13 - 22 Oct.      | Greenland Halibut, Cod, Redfish         |
| Bear-Island, West Spitsbergen, Kopytov, West of Norway | 30 Oct. - 24 Nov. | Cod, Saithe, Greenland Halibut, Redfish |

### Other Research Activities

During the research vessel surveys the following hydrographic stations (temperature, salinity) were carried out as basis of environmental investigations :

| Area                    | Dates     | No. of stations |
|-------------------------|-----------|-----------------|
| Spitsbergen-Bear Island | October   | 68              |
| Spitsbergen-Bear Island | Oct./Nov. | 118             |
| West Coast of Norway    | November  | 18              |

### Allemagne (République Fédérale)

(G. RAUCK)

Continuation of the Wadden Sea sampling programme along the German coast with special reference to juvenile plaice, sole, dab, flounder, cod, haddock and whiting (joint demersal young fish survey in collaboration with Holland and Belgium).

The market sampling (length distribution, otoliths) on demersal fish species from the North Sea and the North Atlantic was continued.

Sampling of data as length measurements, otoliths, sex, maturity stages, etc. on board commercial and research vessels was continued as in the the previous years.

### RESEARCH VESSEL SURVEYS

| Area                    | Date                 | Objectives                   |
|-------------------------|----------------------|------------------------------|
|                         | <u>"Anton Dohrn"</u> |                              |
| North Sea               | 20.01.-18.02.        | I Y H S 1977                 |
| Iceland                 | 18.04.-14.05.        | Research on Gear Selectivity |
| Bear Island-Spitzbergen | 18.07.-20.08.        | Groundfish Survey            |

| Area      | Date              | Objectives                  |
|-----------|-------------------|-----------------------------|
|           | <u>"Poseidon"</u> |                             |
| North Sea | 27.01.-27.02.     | Groundfish Survey           |
|           | <u>"Solea"</u>    |                             |
| North Sea | 06.01.-26.01.     | Groundfish Survey           |
| - " -     | 05.03.-21.03.     | - " - and research on gear  |
| - " -     | 26.03.-09.04.     | - " -                       |
| - " -     | 09.05.-20.05.     | - " -                       |
| - " -     | 14.07.-26.07.     | - " -                       |
| - " -     | 24.08.-06.09.     | - " - and pollution studies |
| - " -     | 13.09.-03.10.     | - " -                       |
| - " -     | 23.11.-06.12.     | - " -                       |
| - " -     | 10.12.-21.12.     | - " -                       |

TAGGING

| Area | Season | Type of Tags           | No. Tagged | Type of Fish |
|------|--------|------------------------|------------|--------------|
| IV b | II     | red soft plastic discs | 517        | plaice       |
| IV b | IV     | yellow spaghetti tags  | 824        | cod          |

Sampling Data for SOLE

| Area <sup>1)</sup>              | Season <sup>2)</sup> | <u>No. of Samples</u> | <u>No. of Fish</u> |      |                | <u>No. of Samples</u> | <u>No. of Fish</u> |      |                |
|---------------------------------|----------------------|-----------------------|--------------------|------|----------------|-----------------------|--------------------|------|----------------|
|                                 |                      | Research Vessels      | Measured           | Aged | Racial Invest. | Market Samples        | Measured           | Aged | Racial Invest. |
| IV b                            | I                    | 36                    | 831                | 518  | --             | 6                     | 898                | 464  | --             |
|                                 | II                   | 51                    | 1869               | 640  | --             | 3                     | 2815               | 590  | --             |
|                                 | III                  | 61                    | 1801               | 202  | --             | 1                     | 213                | 63   | --             |
|                                 | IV                   | 59                    | 1273               | --   | --             | 2                     | 1649               | 685  | --             |
| Sampling Data for <u>BRILL</u>  |                      |                       |                    |      |                |                       |                    |      |                |
| IV b                            | I                    | 15                    | 31                 | 26   | --             | 1                     | 10                 | 10   | --             |
|                                 | II                   | 21                    | 283                | 153  | --             | 2                     | 192                | 42   | --             |
|                                 | III                  | --                    | --                 | --   | --             | --                    | --                 | --   | --             |
|                                 | IV                   | --                    | --                 | --   | --             | --                    | --                 | --   | --             |
| Sampling Data for <u>TURBOT</u> |                      |                       |                    |      |                |                       |                    |      |                |
| IV b                            | I                    | 40                    | 700                | 308  | --             | 8                     | 491                | 220  | --             |
|                                 | II                   | 19                    | 267                | 251  | --             | 3                     | 605                | 135  | --             |
|                                 | III                  | 4                     | 6                  | --   | --             | 3                     | 347                | 210  | --             |
|                                 | IV                   | --                    | --                 | --   | --             | 1                     | 404                | 241  | --             |

1) ICES Statistical Fishing Areas (except for herring in the North Sea)

2) By quarters of year if possible.

Sampling Data for DAB

| Area <sup>1)</sup>                | Season <sup>2)</sup> | No. of Fish                           |          |      |                   | No. of Fish                         |          |      |                   |
|-----------------------------------|----------------------|---------------------------------------|----------|------|-------------------|-------------------------------------|----------|------|-------------------|
|                                   |                      | No. of Samples<br>Research<br>Vessels | Measured | Aged | Racial<br>Invest. | No. of Samples<br>Market<br>Samples | Measured | Aged | Racial<br>Invest. |
| IV b                              | I                    | 16                                    | 574      | --   | --                | --                                  | --       | --   | --                |
|                                   | II                   | 7                                     | 619      | --   | --                | --                                  | --       | --   | --                |
|                                   | III                  | --                                    | --       | --   | --                | --                                  | --       | --   | --                |
|                                   | IV                   | 90                                    | 22210    | --   | --                | --                                  | --       | --   | --                |
| IV c                              | I                    | 2                                     | 133      | --   | --                | --                                  | --       | --   | --                |
| Sampling Data for <u>FLOUNDER</u> |                      |                                       |          |      |                   |                                     |          |      |                   |
| IV b                              | I                    | 11                                    | 171      | --   | --                | --                                  | --       | --   | --                |
|                                   | II                   | 8                                     | 21       | --   | --                | --                                  | --       | --   | --                |
|                                   | III                  | --                                    | --       | --   | --                | --                                  | --       | --   | --                |
|                                   | IV                   | 65                                    | 4446     | --   | --                | --                                  | --       | --   | --                |
| IV c                              | I                    | 3                                     | 17       | --   | --                | --                                  | --       | --   | --                |
| Sampling Data for <u>PLAICE</u>   |                      |                                       |          |      |                   |                                     |          |      |                   |
| IV b                              | I                    | 59                                    | 7078     | 1289 | --                | 8                                   | 8654     | 1338 | --                |
|                                   | II                   | 27                                    | 1702     | --   | --                | 5                                   | 5257     | 1017 | --                |
|                                   | III                  | 5                                     | 620      | --   | --                | 7                                   | 6815     | 1109 | --                |
|                                   | IV                   | 97                                    | 9997     | --   | --                | 7                                   | 5931     | 1366 | --                |
| IV c                              | I                    | 6                                     | 208      | 208  | --                | --                                  | --       | --   | --                |

<sup>1)</sup> ICES Statistical Fishing Areas (except for herring in the North Sea)

<sup>2)</sup> By quarters of year if possible.

Sampling Data for NORWAY POUT

| Area <sup>1)</sup>                     | Season <sup>2)</sup> | No. of Samples   | No. of Fish |      | Racial Invest. | No. of Samples | No. of Fish |      | Racial Invest. |
|----------------------------------------|----------------------|------------------|-------------|------|----------------|----------------|-------------|------|----------------|
|                                        |                      | Research Vessels | Measured    | Aged |                | Market Samples | Measured    | Aged |                |
| IV a                                   | I                    | 24               | 4880        | --   | --             | --             | --          | --   | --             |
| IV b                                   | I                    | 19               | 1269        | --   | --             | --             | --          | --   | --             |
| Sampling Data for <u>Gadus minutus</u> |                      |                  |             |      |                |                |             |      |                |
| IV b                                   | II                   | 2                | 158         | --   | --             | --             | --          | --   | --             |
|                                        | IV                   | 1                | 23          | --   | --             | --             | --          | --   | --             |
| IV c                                   | I                    | 1                | 28          | --   | --             | --             | --          | --   | --             |
| Sampling Data for <u>Gadus luscus</u>  |                      |                  |             |      |                |                |             |      |                |
| IV b                                   | I                    | 1                | 18          | --   | --             | --             | --          | --   | --             |
|                                        | II                   | 4                | 139         | --   | --             | --             | --          | --   | --             |
|                                        | IV                   | 9                | 411         | --   | --             | --             | --          | --   | --             |
| IV c                                   | I                    | 2                | 41          | --   | --             | --             | --          | --   | --             |

1) ICES Statistical Fishing Areas (except for herring in the North Sea)

2) By quarters of year if possible.

Sampling Data for WHITING

| Area <sup>1)</sup>               | Season <sup>2)</sup> | No. of Samples   | No. of Fish |      | Racial Invest. | No. of Samples | No. of Fish |      | Racial Invest. |
|----------------------------------|----------------------|------------------|-------------|------|----------------|----------------|-------------|------|----------------|
|                                  |                      | Research Vessels | Measured    | Aged |                | Market Samples | Measured    | Aged |                |
| IV a                             | I                    | 26               | 2217        | 353  | --             | --             | --          | --   | --             |
| IV b                             | I                    | 53               | 7590        | 554  | --             | --             | --          | --   | --             |
|                                  | II                   | 6                | 798         | --   | --             | --             | --          | --   | --             |
|                                  | III                  | 24               | 5565        | --   | --             | --             | --          | --   | --             |
|                                  | IV                   | 73               | 3858        | --   | --             | --             | --          | --   | --             |
| IV c                             | I                    | 10               | 1018        | --   | --             | --             | --          | --   | --             |
| Sampling Data for <u>HADDOCK</u> |                      |                  |             |      |                |                |             |      |                |
| II a                             | I                    | --               | --          | --   | --             | 14             | 3077        | 1598 | --             |
|                                  | II                   | 11               | 5826        | 585  | --             | 1              | 174         | 79   | --             |
| II b                             | III                  | 2                | 87          | 16   | --             | 1              | 445         | 445  | --             |
| IV a                             | I                    | 44               | 11280       | 3179 | --             | --             | --          | --   | --             |
| IV b                             | I                    | 75               | 5725        | 2411 | --             | --             | --          | --   | --             |
|                                  | II                   | 1                | 2           | --   | --             | --             | --          | --   | --             |
| V a                              | I                    | --               | --          | --   | --             | 2              | 546         | 262  | --             |
|                                  | II                   | 28               | 2827        | 193  | --             | --             | --          | --   | --             |
|                                  | III                  | --               | --          | --   | --             | 1              | 275         | 144  | --             |
|                                  | IV                   | --               | --          | --   | --             | 1              | 290         | 113  | --             |
| VI b                             | III                  | 3                | 260         | 193  | --             | --             | --          | --   | --             |

<sup>1)</sup> ICES Statistical Fishing Areas (except for herring in the North Sea)

<sup>2)</sup> By quarters of year if possible.



Sampling Data for COALFISH

| Area <sup>1)</sup> | Season <sup>2)</sup> | No. of Samples   | No. of Fish |      | Racial Invest. | No. of Samples | No. of Fish |      | Racial Invest. |
|--------------------|----------------------|------------------|-------------|------|----------------|----------------|-------------|------|----------------|
|                    |                      | Research Vessels | Measured    | Aged |                | Market Samples | Measured    | Aged |                |
| II a               | I                    | --               | --          | --   | --             | 5              | 1888        | 1580 | --             |
|                    | II                   | --               | --          | --   | --             | 5              | 2003        | 429  | --             |
|                    | III                  | --               | --          | --   | --             | --             | --          | --   | --             |
|                    | IV                   | --               | --          | --   | --             | 1              | 313         | 313  | --             |
| IV a               | II                   | --               | --          | --   | --             | 1              | 577         | 288  | --             |
|                    | III                  | --               | --          | --   | --             | 3              | 890         | 543  | --             |
| V a                | I                    | --               | --          | --   | --             | 9              | 2865        | 1488 | --             |
|                    | II                   | 28               | 10775       | 531  | --             | 9              | 3301        | 1605 | --             |
|                    | III                  | --               | --          | --   | --             | 14             | 3830        | 1652 | --             |
|                    | IV                   | --               | --          | --   | --             | 7              | 2072        | 795  | --             |
| V b                | I                    | --               | --          | --   | --             | 1              | 334         | 334  | --             |
|                    | II                   | --               | --          | --   | --             | 2              | 555         | 555  | --             |
|                    | IV                   | --               | --          | --   | --             | 2              | 515         | 317  | --             |
| VI a               | I                    | 3                | 125         | 47   | --             | 4              | 1579        | 813  | --             |

<sup>1)</sup> ICES Statistical Fishing Areas (except for herring in the North Sea)

<sup>2)</sup> By quarters of year if possible.

Sampling Data for COD

| Area <sup>1)</sup> | Season <sup>2)</sup> | No. of Samples   | No. of Fish |      | Racial Invest. | No. of Samples | No. of Fish |      | Racial Invest. |
|--------------------|----------------------|------------------|-------------|------|----------------|----------------|-------------|------|----------------|
|                    |                      | Research Vessels | Measured    | Aged |                | Market Samples | Measured    | Aged |                |
| II a               | I                    | --               | --          | --   | --             | 13             | 2852        | 1563 | --             |
|                    | II                   | 17               | 11212       | 681  | --             | 2              | 332         | 191  | --             |
| II b               | III                  | 35               | 3165        | 1086 | --             | --             | --          | --   | --             |
| IV a               | I                    | 24               | 177         | 168  | --             | --             | --          | --   | --             |
|                    | II                   | --               | --          | --   | --             | --             | --          | --   | --             |
|                    | III                  | 1                | 179         | 179  | --             | --             | --          | --   | --             |
|                    | IV                   | --               | --          | --   | --             | --             | --          | --   | --             |
| IV b               | I                    | 121              | 6352        | 593  | --             | --             | --          | --   | --             |
|                    | II                   | 29               | 4180        | 621  | --             | --             | --          | --   | --             |
|                    | III                  | 71               | 10906       | 2946 | --             | --             | --          | --   | --             |
|                    | IV                   | 133              | 18577       | 1245 | --             | --             | --          | --   | --             |
| IV c               | I                    | 13               | 759         | 159  | --             | --             | --          | --   | --             |
|                    | II                   | --               | --          | --   | --             | --             | --          | --   | --             |
|                    | III                  | --               | --          | --   | --             | --             | --          | --   | --             |
|                    | IV                   | --               | --          | --   | --             | --             | --          | --   | --             |
| V a                | I                    | --               | --          | --   | --             | 4              | 811         | 472  | --             |
|                    | II                   | 15               | 1195        | 955  | --             | 1              | 362         | 166  | --             |
|                    | III                  | --               | --          | --   | --             | 2              | 462         | 269  | --             |
|                    | IV                   | --               | --          | --   | --             | --             | --          | --   | --             |
| XIV                | I                    | --               | --          | --   | --             | 3              | 970         | 286  | --             |
|                    | II                   | --               | --          | --   | --             | 3              | 1112        | 571  | --             |
|                    | III                  | 2                | 344         | 205  | --             | 3              | 916         | 311  | --             |
|                    | IV                   | --               | --          | --   | --             | 3              | 1320        | 351  | --             |

<sup>1)</sup> ICES Statistical Fishing Areas (except for herring in the North Sea)

<sup>2)</sup> By quarters of year if possible.

Sampling Data for REDFISH

\* S. marinus  
 \*\* S. mentella

| Area <sup>1)</sup> | Season <sup>2)</sup> | No. of Samples   |          |      |                | No. of Fish    |          |      |                |
|--------------------|----------------------|------------------|----------|------|----------------|----------------|----------|------|----------------|
|                    |                      | Research Vessels | Measured | Aged | Racial Invest. | Market Samples | Measured | Aged | Racial Invest. |
| I and II b         | III*                 | 8                | 1360     | 240  | --             | --             | --       | --   | --             |
|                    | III**                | 7                | 1598     | 319  | --             | --             | --       | --   | --             |
| II a               | I*                   | --               | --       | --   | --             | 4              | 1223     | --   | --             |
|                    | II*                  | --               | --       | --   | --             | 6              | 1853     | 256  | --             |
| V a                | I*                   | --               | --       | --   | --             | 8              | 1576     | 300  | --             |
|                    | II*                  | 10               | 1826     | 500  | --             | 4              | 501      | 269  | --             |
|                    | III*                 | --               | --       | --   | --             | 6              | 1068     | 194  | --             |
|                    | IV*                  | --               | --       | --   | --             | 9              | 1832     | 200  | --             |
|                    | I**                  | --               | --       | --   | --             | 8              | 2159     | --   | --             |
|                    | II**                 | 59               | 8864     | 811  | --             | 14             | 3644     | --   | --             |
|                    | III**                | --               | --       | --   | --             | 12             | 3116     | 100  | --             |
|                    | IV**                 | --               | --       | --   | --             | 8              | 2009     | 317  | --             |
| V b                | II*                  | --               | --       | --   | --             | 2              | 457      | 176  | --             |
|                    | IV*                  | 7                | 3200     | 500  | --             | --             | --       | --   | --             |
|                    | I**                  | --               | --       | --   | --             | 1              | 548      | --   | --             |
|                    | II**                 | --               | --       | --   | --             | 1              | 217      | --   | --             |
| XIV                | I*                   | --               | --       | --   | --             | 9              | 2623     | --   | --             |
|                    | II*                  | --               | --       | --   | --             | 1              | 261      | --   | --             |
|                    | III*                 | 12               | 1172     | --   | --             | --             | --       | --   | --             |
|                    | IV*                  | --               | --       | --   | --             | 3              | 771      | --   | --             |
|                    | III**                | 24               | 3015     | 300  | --             | 5              | 1509     | 50   | --             |

<sup>1)</sup>ICES Statistical Fishing Areas (except for herring in the North Sea)

<sup>2)</sup>By quarters of year if possible.

Belgique  
(P. Hovart)

The determination of the density and the growth per year-class of soles, plaice, dab, flounders and gadoids along the Belgian coast has been continued on the R.V. "Hinders".

Two cruises were carried out for the demersal young fish survey in collaboration with the Netherlands and Germany.

The market sampling was continued covering cod-North Sea, whiting-North Sea, haddock-North Sea, plaice-North Sea-English Channel-Bristol Channel-Irish Sea, sole-North Sea-English Channel-Bristol Channel and Irish Sea.

| Species              | Season | N° of samples   |                | N° of samples |      |
|----------------------|--------|-----------------|----------------|---------------|------|
|                      |        | Research vessel | Market samples | Measured      | aged |
| <u>Sole</u><br>IV    | 1      | -               | 11             | 1094          | 210  |
|                      | 2      | -               | 12             | 1074          | 200  |
|                      | 3      | -               | 12             | 1244          | 210  |
|                      | 4      | -               | 13             | 1262          | 210  |
| VII f                | 1      | -               | 11             | 1106          | 280  |
|                      | 2      | -               | 4              | 311           | 210  |
|                      | 3      | -               | 2              | 180           | 70   |
|                      | 4      | -               | 2              | 210           | 210  |
| VII a                | 1      | -               | 6              | 623           | 210  |
|                      | 2      | -               | 5              | 470           | 200  |
|                      | 3      | -               | 2              | 140           | 140  |
|                      | 4      | -               | 9              | 993           | 210  |
| VII d, e             | 1-4    | -               | 4              | 320           | 210  |
| <u>Plaide</u><br>IV  | 1      | -               | 11             | 671           | 150  |
|                      | 2      | -               | 10             | 551           | 150  |
|                      | 3      | -               | 11             | 721           | 100  |
|                      | 4      | -               | 13             | 654           | 150  |
| VII f                | 1-4    | -               | 16             | 922           | 300  |
| VII a                | 1-4    | -               | 16             | 982           | 300  |
| VII d,e              | 1-4    | -               | 4              | 213           | 213  |
| <u>Cod</u><br>IV     | 1      | -               | 6              | 215           | 213  |
|                      | 2      | -               | 7              | 210           | 210  |
|                      | 3      | -               | 4              | 130           | 130  |
|                      | 4      | -               | 5              | 172           | 172  |
| <u>Whiting</u><br>IV | 1      | -               | 6              | 120           | 120  |
|                      | 2      | -               | 5              | 100           | 100  |
|                      | 3      | -               | 4              | 91            | 90   |
|                      | 4      | -               | 6              | 110           | 110  |

Canada

P.F. Lett)

1. Evaluation des stocks commerciaux et pré-commerciaux de poisson de fond à l'aide d'un chalut de fond, dans le sud du golfe du Saint-Laurent, sur les bancs au large de la Nouvelle-Ecosse et dans la baie de Fundy.
2. Etude de l'écologie des oeufs et larves de poisson de fond dans le golfe du Saint-Laurent ainsi que sur le plateau continental au large de la Nouvelle-Ecosse.
3. Etude des mécanismes de recrutement des poissons de fond grâce à l'analyse des captures d'oeufs, de larves et de juvéniles.
4. Dynamique de populations de certains stocks côtiers.
5. Etude de l'influence de certains paramètres de l'environnement sur les prises de poissons par les navires de recherches et commerciaux.
6. Etude de la ponte et de la fécondité de l'aiglefin.
7. Etudes par asitologiques en fonction de l'écologie, la distribution et la mortalité de l'aiglefin, la morue et les poissons plats dans le golfe du Saint-Laurent, sur le plateau continental Néo-Ecossais et dans la baie de Fundy.
8. Localisation des stocks de poissons de fond dans le sud du golfe du Saint-Laurent à l'aide de méthode hydro-acoustique.
9. Etude de la possibilité de déterminer l'abondance des stocks de poissons par des méthodes hydro-acoustiques.
10. Collecte et compilation de statistiques détaillées sur les débarquements, les zones de pêche et l'effort de pêche de la flotte mobile.
11. Echantillonnage de la longueur et de l'âge des débarquements commerciaux pour les principales espèces de poissons de fond.
12. Etude des relations entre les captures de poissons de fond et l'environnement.

Denmark

(E. Ursin) 1977.

The RV "Dana" took part in the Young Fish Survey in the North Sea in February.

Sampling.

| Species, Area                      | Season | No of samples   |        | No of fish |      |
|------------------------------------|--------|-----------------|--------|------------|------|
|                                    |        | Research vessel | Market | Measured   | Aged |
| <u>Cod</u>                         | I      | -               | 27     | 648        | 228  |
| North Sea IV                       | II     | -               | 25     | 694        | 302  |
|                                    | III    | -               | 18     | 491        | 269  |
|                                    | IV     | -               | 14     | 481        | 225  |
|                                    | I      | -               | 25     | 279        | 279  |
| Skagerrak-Kattegat<br>III a        | II     | -               | 19     | 240        | 240  |
|                                    | III    | -               | 37     | 495        | 455  |
|                                    | IV     | -               | 86     | 721        | 721  |
|                                    | I      | -               | 81     | 487        | 487  |
| <u>Haddock</u><br>North Sea IV     | II     | -               | 13     | 54         | 54   |
|                                    | III    | -               | 30     | 76         | 76   |
|                                    | IV     | -               | 64     | 270        | 270  |
|                                    | I      | -               | 7      | 17         | 17   |
| Skagerrak-Kattegat<br>III a        | II     | -               | 3      | 6          | 6    |
|                                    | III    | -               | 14     | 41         | 41   |
|                                    | IV     | -               | 16     | 67         | 67   |
|                                    | I      | -               | 108    | 1504       | 1504 |
| <u>Whiting</u><br>North Sea IV     | II     | -               | 52     | 341        | 341  |
|                                    | III    | -               | 43     | 499        | 499  |
|                                    | IV     | -               | 101    | 1176       | 1176 |
|                                    | I      | -               | 27     | 314        | 314  |
| Skagerrak-Kattegat<br>III a        | II     | -               | 18     | 46         | 46   |
|                                    | III    | -               | 54     | 2416       | 2416 |
|                                    | IV     | -               | 100    | 3488       | 3488 |
|                                    | I      | -               | 74     | 7788       | 7788 |
| <u>Norway Pout</u><br>North Sea IV | II     | -               | 9      | 978        | 978  |
|                                    | III    | -               | 27     | 2561       | 2561 |
|                                    | IV     | -               | 55     | 7340       | 7340 |
|                                    | I      | -               | 15     | 122        | 122  |
| Skagerrak-Kattegat<br>III a        | II     | -               | 3      | 88         | 88   |
|                                    | III    | -               | 10     | 802        | 802  |
|                                    | IV     | -               | 5      | 430        | 430  |
|                                    | I      | -               | 15     | 122        | 122  |

| Species, Area      | Season | No of samples   |        | No of fish |       |
|--------------------|--------|-----------------|--------|------------|-------|
|                    |        | Research vessel | Market | Measured   | Aged  |
| <u>Sandeel</u>     | I      | -               | 20     | 3084       | 3084  |
| North Sea IV       | II     | -               | 77     | 10262      | 10262 |
|                    | III    | -               | 28     | 3864       | 3864  |
|                    | IV     | -               | 13     | 2052       | 2052  |
| Skagerrak-Kattegat | I      | -               | 3      | 350        | 350   |
| III a              | II     | -               | 19     | 2615       | 2615  |
|                    | III    | -               | 5      | 651        | 651   |
|                    | IV     | -               | 2      | 4          | 1     |
| <u>Plaice</u>      | I      | -               | -      | 202        | 202   |
| North Sea IV       | II     | -               | 3      | 3          | -     |
|                    | III    | -               | -      | 369        | 369   |
|                    | IV     | -               | -      | 188        | 188   |
| Skagerrak-Kattegat | I      | -               | 3      | 263        | 260   |
| III a              | II     | -               | 4      | 630        | 625   |
|                    | III    | -               | 4      | 591        | 586   |
|                    | IV     | -               | 7      | 709        | 699   |
| <u>Sole</u>        | II     | -               | -      | 3493       | 626   |
| North Sea IV       |        |                 |        |            |       |

Feroe

(K. Hoydal)

R/V Jens Chr. Svabo participated in the international 0-group survey at the Faroes, and worked all the year in the Faroe Area surveying demersal resources.

The hired fishing vessel "Morgunstjörnan" had rather extensive fishing trials in the east Greenland Area between Tingmiarmiut and Angmagssalik. An observer covered the cruise and undertook rather extensive sampling of the catches.

Due to restriction on manpower only the three main stocks in the Faroe Area of commercial importance have been covered by regular sampling of all gears involved.

Sampling

|         | ICES AREA Vb<br>n° of gears | samples | measured | aged |
|---------|-----------------------------|---------|----------|------|
| cod     | 4                           | 41      | 6469     | 1605 |
| haddock | 2                           | 27      | 5507     | 1072 |
| saithe  | 2                           | 20      | 1838     | 467  |
|         | ICES AREA WIVa              |         |          |      |
| cod     | 1                           | 14      | 1258     | 1145 |

Occasional samples have been taken from landings from the Icelandic Area.

The material has been used by the Faroe Working Group and The Saithe Working Group, as part of the database for assessing TAC's for 1979.

Espagne  
(R. Robles)

1. Travaux réalisés par l'Institut espagnol d'Océanographie (I.E.O.).

Travaux à la mer.

Le laboratoire des îles Canaries a poursuivi ses travaux sur des chalutiers de la flottille commerciale pour étudier les rejets de poissons dans la pêche de l'ouest Afrique (21°30 à 25°00 N), en effectuant 4 campagnes dans lesquelles on avait réalisé des mensurations sur différentes espèces (*Dentex macrophthalmus*, *Solea vulgaris vulgaris*, *Callionymus lyra*, *Trachinus araneus*, *Diplodus senegalensis*, *Trigla lucerna*, *Pagellus acarne*, *Spondyllosoma cantharus*, *Trachinus draco*, *Arnoglossus blachei* et *Dicologlossa cuneata*).

Une campagne sur le bateau océanographique "Cornide de Saavedra" (1-21 septembre) a été effectuée au large du NO de l'Espagne et avait pour but l'étude des nurseries du merlu et l'essai des comparaisons entre les rendements obtenus par le chalut conventionnel et le chalut à grande ouverture verticale.

A part le merlu, on a effectué des mensurations sur *Micromesistius poutassou*, *Lepidorhombus boscii* et *L. whiff-iagonis*, *Trachurus trachurus* et *Nephrops norvegicus*.

En outre, diverses sorties ont été effectuées à bord des chalutiers pêchant sur le plateau continental du NO espagnol.

Travaux à terre.

a. Merlu. La recherche a porté sur les points suivants :

. poursuite de la récolte des données sur la composition des captures et l'effort, selon les différentes zones de pêche,

. étude particulière du stock du plateau continental du NO de l'Espagne compte tenu des différents engins de pêche utilisés (chalut, palangre et fillet maillant grand et petit),

. l'étude de la flottille palangrière pêchant cette espèce est maintenant

b. Autres espèces. Poursuite de l'étude des captures des chalutiers et ligneurs pêchant la dorade (*Pagellus bogaraveo*) sur la côte cantabrique et de la récolte des données de capture et d'effort pour les cardines (*Lepidorhombus whiff-iagonis* et *L. boscii*) et les baudroies (*Lophius budegassa* et *L. piscatoria*



## 2. Travaux réalisés par d'autres organismes.

L'Institut pour les Recherches sur les Pêcheries a réalisé, pendant cette année, une révision systématique des poissons capturés pendant des campagnes au large de la côte du NO Africain (Atlor III et Atlor V), ce qui a permis d'avancer dans la connaissance de certains aspects des relations écologiques entre sparidés et céphalopodes.

Pour la côte NO de l'Espagne, on a continué les études biologiques et biométriques sur quelques espèces d'importance commerciale (*Lepidorhombus bosci* et *L. whiff-iaonis*, *Trachurus trachurus*, *Sprattus sprattus*, *Merluccius merluccius*, *Scomber scombrus*, *Pagellus cantabricus*, *Aspitrigla cuculus* et *A. lucerna*).

Les données obtenues pendant la campagne "Galicia III" ont permis de calculer le recrutement et la mortalité du merlu et du merlan bleu, ainsi que la distribution et l'abondance pour les 21 espèces de poissons les plus importantes dans la pêche du plateau galicien.

## 3. Travaux pour 1978.

. Continuation des études déjà entreprises dans les régions N et NO de l'Espagne, comme dans la zone canario-africaine où il est prévu de consacrer 2 campagnes à l'étude de la distribution du merlu dans les eaux de l'ouest africain.

. Création d'un groupe de travail entre les deux Instituts de recherche espagnols pour l'étude conjointe du merlu des secteurs VIIIc ouest et IX du CIEM.

. Il est également prévu de réaliser, si possible, une campagne avec chalut pélagique ou à grande ouverture verticale pour estimer les rendements potentiels en chinchards, merlan bleu et maquereaux sur les côtes de la Galice.

## 4. Echantillonnage de l'I.E.O. pour le merlu (voir tableau ci-après).

Echantillonnages de l'Institut espagnol d'Océanographie. MERLU (1977)

| Secteur<br>CIEM | Saison        | Nombre d'échantillon    |                         |         | Nombre de poissons      |                        |         |
|-----------------|---------------|-------------------------|-------------------------|---------|-------------------------|------------------------|---------|
|                 |               | Navires de<br>recherche | Navieres<br>commerciaux | Marchés | Navires de<br>recherche | Navires<br>commerciaux | Marchés |
| VII             | 1er trimestre |                         |                         | 4       |                         |                        | 1.351   |
|                 | 2er trimestre |                         |                         | 5       |                         |                        | 1.459   |
|                 | 3er trimestre |                         |                         | 2       |                         |                        | 228     |
|                 | 4er trimestre |                         |                         | -       |                         |                        | -       |
| VIII            | 1er trimestre |                         |                         | 10      |                         |                        | 897     |
|                 | 2er trimestre |                         |                         | 10      |                         |                        | 1.980   |
|                 | 3er trimestre | 29                      |                         | 2       | 2.755                   |                        | 375     |
|                 | 4er trimestre |                         |                         | 4       |                         |                        | 763     |
| IX              | 1er trimestre | --                      | --                      | --      | --                      | --                     | --      |
|                 | 2er trimestre | --                      | 2                       | 6       | --                      | 328                    | 395     |
|                 | 3er trimestre | 14                      | 3                       | 4       | 539                     | 134                    | 316     |
|                 | 4er trimestre | --                      | --                      | 4       | --                      | --                     | 294     |

Finlande

(E. Aro et R. Parmanne)

No work done on demersal fish other than that reported to the Baltic Fish Committee.

France

(J. Dardignac et J. Gueguen)

I. Travaux réalisés par l'Institut scientifique et technique des Pêches maritimes (ISTPM).

1. Travaux à la mer.

Les navires de recherche français ont pris part aux campagnes internationales d'inventaire de jeunes poissons :

- . young herring survey en février en mer du Nord
- . O group survey aux Féroé en juin (29 stations)
- . jeunes poissons plats en Manche orientale et au sud de la mer du Nord en août-septembre
- . jeunes merlus dans le golfe de Gascogne.

De plus, une première mission consacrée à l'étude de la répartition des principales espèces dans le sud de la mer d'Irlande (VII A) et la mer Celtique (VII e, f, g, h) a eu lieu en décembre.

En liaison avec l'étude des nuisances dues à d'éventuelles extractions d'agrégats marins ou d'éventuelles implantations de centrales thermo-nucléaires, les travaux d'inventaire des ressources du secteur littoral (jusqu'aux fonds de 40 m) ont été poursuivis et intensifiés. Un intérêt particulier est porté aux frayères et nurseries. A cet effet, des campagnes mensuelles ou trimestrielles ont eu lieu au long des côtes françaises de la mer du Nord, de la Manche et du golfe de Gascogne.

Des travaux de marquages portant sur 206 soles et 263 plies appartenant principalement au groupe I ont eu lieu en Manche orientale.

Enfin, 11 sorties ont été effectuées à bord des chalutiers rochellais en octobre et novembre 1977.

2. Travaux à terre.

2.1. Pour la mer du Nord et la Manche orientale, des clefs taille-âge ont été réalisées pour l'églefin, le merlan, la morue et la sole. Un travail analogue est en cours pour le lieu noir de la sous-zone VIa.

Pour répondre à une demande du CIEM, une recherche sur la croissance de la dorade grise (*Spondyliosoma cantharus*) a été débutée à partir des pêches commerciales du golfe de Gascogne.

2.2. Les recherches sur le merlu ont porté sur les points suivants :

. la croissance, par mensuration des anneaux sur des otolithes polis à plat ;

. les caractères méristiques sur des échantillons du groupe 0 de différentes origines ;

. la sélectivité et en particulier sur la relation entre l'écart de sélection et  $e_{50}$  ;

. les nurseries sur lesquelles un essai de synthèse a fait l'objet d'une note au CIEM. Par ailleurs, une étude des relations entre les facteurs du milieu et les concentrations des groupes 0 et I a été entreprise.

## II. Travaux réalisés par d'autres organismes (O.R.S.T.O.M.).

Les Centres de recherches de Dakar, Abidjan et Pointe Noire, animés par des équipes de chercheurs de l'O.R.S.T.O.M. ont poursuivi, en 1977, les travaux sur les espèces démersales exploitées du golfe de Guinée. Au niveau des trois centres, les données de prise et d'effort des flottes nationales et internationales qui fréquentent la région ont été collectées. Un certain nombre de missions en mer, complétées par des travaux en laboratoire, ont permis de préciser les connaissances déjà acquises sur la biologie des principales espèces. Au Sénégal et en Côte d'Ivoire, un effort particulier a été consacré à l'étude des pêcheries artisanales.

Les campagnes d'échointégration effectuées dans le golfe de Guinée ont permis de préciser l'évaluation des stocks démersaux de la région.

## III. Echantillonnages effectués à bord de navires de recherches ou sur les marchés français.

| région                           | saison     | Nb d'échantillons |        | Nb poissons | Nb otolithes |
|----------------------------------|------------|-------------------|--------|-------------|--------------|
|                                  |            | Nav. recherche    | marché | mesurés     | prélevés     |
| Roussette<br>VIII a              | 1er trim   | gr.fish surv.     |        | 107         |              |
|                                  | 2ème trim  | -                 |        | 49          |              |
|                                  | 4ème trim  | -                 |        | 140         |              |
| VII a                            | 4ème trim. | -                 |        | 52          |              |
| VII f                            | 4ème trim  | -                 |        | 151         |              |
| Chien<br>VII g                   | 4ème trim  | -                 |        | 64          |              |
| Raies<br>VII a<br>VII f<br>VII g | 4ème trim  | -                 |        | 132         |              |
|                                  | -          | -                 |        | 74          |              |
|                                  | -          | -                 |        | 40          |              |

| région | saison    | Nb d'échantillons |        | Nb poissons | Nb otolithes |
|--------|-----------|-------------------|--------|-------------|--------------|
|        |           | Nav. recherche    | marché | mesurés     | prélevés     |
| Morue  |           |                   |        |             |              |
| IV a   | 1er trim  | young fish surv   |        | 1 417       | 358          |
| V b    | 2ème trim | 29                |        | 962 larves  |              |
| VI a   | 1er trim  |                   | 2      | 160         |              |
|        | 3ème trim |                   | 1      | 122         |              |
|        | 4ème trim |                   | 1      | 84          |              |
| VII a  | 1er trim  |                   | 2      | 351         |              |
|        | 2ème trim |                   | 1      | 127         |              |
|        | 3ème trim |                   | 1      | 187         |              |
|        | 4ème trim | 1                 | 3      | 320         |              |
| VII g  | 1er trim  |                   | 3      | 182         |              |
|        | 2ème trim |                   |        | 48          |              |
|        | 3ème trim |                   | 2      | 248         |              |
|        | 4ème trim |                   | 1      | 19          |              |
| VII d  | 3ème trim |                   | 2      | 22          |              |
| Merlan |           |                   |        |             |              |
| IV     | 1er trim  | young fish surv   |        | 4 338       | 391          |
| VI a   | 1er trim  |                   | 1      | 106         |              |
| VII a  | 1er trim  |                   | 1      | 263         |              |
|        | 2ème trim |                   | 1      | 230         |              |
|        | 3ème trim |                   | 1      | 242         |              |
|        | 4ème trim | 1                 | 3      | 1 237       | 133          |
| VII d  | 3ème trim |                   |        | 37          |              |
| VII e  | 4ème trim | 1                 |        | 32          | 30           |
| VII f  | 3ème trim |                   | 2      | 339         |              |
|        | 4ème trim | 1                 | 2      | 635         | 201          |
| VII g  | 1er trim  |                   | 1      | 207         |              |
|        | 2ème trim |                   | 2      | 419         |              |
|        | 3ème trim |                   | 1      | 275         |              |
|        | 4ème trim | 1                 | 2      | 469         | 60           |
| VII h  | 4ème trim | 1                 |        | 5           |              |
| VIII a | 2ème trim | 2                 |        | 2 807       |              |
|        | 3ème trim | 2                 |        | 400         |              |
|        | 4ème trim | 3                 |        | 1 732       |              |

| région     | saison    | Nb d'échantillons |        | Nb poissons  | Nb otolithes |
|------------|-----------|-------------------|--------|--------------|--------------|
|            |           | Nav. recherche    | marché | mesurés      | prélevés     |
| Eglefin    |           |                   |        |              |              |
| IV         | 1er trim  | young herr. S.    |        | 984          | 134          |
| IV a       |           |                   | 1      | 194          |              |
| VI a       | 1er trim  |                   | 1      | 162          |              |
|            | 2ème trim |                   | 1      | 63           |              |
|            | 4ème trim |                   | 2      | 331          |              |
| VII c      |           |                   | 1      | 79           |              |
| VII f      | 1er trim  |                   | 1      | 276          |              |
|            | 2ème trim |                   | 1      | 104          |              |
|            | 3ème trim |                   | 1      | 56           |              |
| VII g      | 2ème trim |                   | 1      | 105          |              |
| VII e      | 4ème trim |                   | 1      | 149          |              |
| Merlu      |           |                   |        |              |              |
| VII a      | 4ème trim | 1                 |        | 6            |              |
| VII e      | 4ème trim | 1                 |        | 21           |              |
| VII f      | 4ème trim | 1                 |        | 251          |              |
| VII g      | 1er trim  |                   | 1      | 119          |              |
|            | 4ème trim | 1                 |        | 37           |              |
| VII h      | 4ème trim | 1                 |        | 11           |              |
| VIII a     | 2ème trim | 1                 |        | 410          |              |
|            | 4ème trim | 2                 |        | 3 437        |              |
| Lieu Noir  |           |                   |        |              |              |
| IV a       | 1er trim  |                   | 1      | 98           |              |
|            | 4ème trim |                   | 1      | 210          |              |
| V b        | 2ème trim | 29                | 1      | 1 188 larves |              |
|            | 3ème trim |                   | 1      | 125          |              |
|            | 4ème trim |                   | 1      | 125          |              |
| VI a       | 1er trim  |                   | 4      | 408          | 43           |
|            | 3ème trim |                   | 2      | 380          |              |
|            | 4ème trim |                   | 3      | 418          | 150          |
| VII a      |           |                   | 2      | 211          |              |
| Lieu Jaune |           |                   |        |              |              |
| VII e      | 4ème trim | ground fish S.    |        | 84           |              |
| VII f      | 4ème trim |                   |        | 48           |              |

| région                 | saison    | Nb d'échantillons |        | Nb poissons | Nb otolithes |
|------------------------|-----------|-------------------|--------|-------------|--------------|
|                        |           | Nav. recherche    | marché | mesurés     | prélevés     |
| Lingue<br>VII e        | 4ème trim | ground fish S.    |        | 20          |              |
| Poutassou<br>VII e     | 4ème trim |                   |        | 231         |              |
| VII g                  | 4ème trim |                   |        | 216         |              |
| VII h                  | 4ème trim |                   |        | 82          |              |
| Tacaud<br>VII a        | 4ème trim | 1                 |        | 91          |              |
| VII f                  | 4ème trim | 1                 |        | 176         |              |
| VIII a                 | 1er trim  | 2                 |        | 4 804       |              |
|                        | 2ème trim | 2                 |        | 19 918      |              |
|                        | 3ème trim | 2                 |        | 1 300       |              |
|                        | 4ème trim | 3                 |        | 36 490      |              |
| Tacaud norvégien<br>IV | 1er trim  | young herr. S.    |        | 622         |              |
| VII a                  | 4ème trim | ground fish S.    |        | 12          |              |
| VII g                  | 4ème trim |                   |        | 364         |              |
| VII h                  | 4ème trim |                   |        | 81          |              |
| Rouget<br>VIII a       | 1er trim  |                   |        | 337         |              |
|                        | 2ème trim |                   |        | 569         |              |
|                        | 4ème trim |                   |        | 168         |              |
| Grondin gris<br>VII a  | 4ème trim |                   |        | 63          |              |
| VII e                  | 4ème trim |                   |        | 21          |              |
| Grondin rouge<br>VII a | 4ème trim |                   |        | 14          |              |
| VII e                  | -         |                   |        | 202         |              |
| VII f                  | -         |                   |        | 175         |              |
| Dorade grise<br>VIII a | 2ème trim | 1                 |        | 147         | 127 écailles |
|                        | 4ème trim | 3                 |        | 653         |              |

| région  | saison    | Nb d'échantillons |        | Nb poissons<br>mesurés | Nb otolithes<br>prélevés |
|---------|-----------|-------------------|--------|------------------------|--------------------------|
|         |           | Nav. recherche    | marché |                        |                          |
| Limande |           |                   |        |                        |                          |
| IV      | 1er trim  | young herr. S     |        | 2 097                  |                          |
| VII a   | 4ème trim | ground fish sur   |        | 115                    |                          |
| VII e   | 4ème trim |                   |        | 39                     |                          |
| VII f   | 4ème trim |                   |        | 10                     |                          |
| Plie    |           |                   |        |                        |                          |
| VII a   | 4ème trim | ground fish S.    |        | 6                      |                          |
| VII d   | 3ème trim | young fish Surv   |        | 825                    | 55 otolithes             |
| VII f   | 4ème trim | ground fish S.    |        | 31                     |                          |
| VIII a  | 1er trim  |                   |        | 45                     |                          |
|         | 2ème trim |                   |        | 183                    |                          |
|         | 4ème trim |                   |        | 131                    |                          |
| Sole    |           |                   |        |                        |                          |
| VII d   | 2ème trim | ground fish S.    |        | 848                    |                          |
|         | 3ème trim | young fish S.     |        | 405                    |                          |
| VIII a  | 1er trim  | ground fish S.    |        | 912                    |                          |
|         | 2ème trim |                   |        | 1 235                  |                          |
|         | 3ème trim |                   |        | 300                    |                          |
|         | 4ème trim |                   |        | 3 867                  |                          |
| VII f   | 4ème trim |                   |        | 21                     | 11 otolithes             |
| VII g   | 4ème trim |                   |        | 6                      |                          |
| Cardine |           |                   |        |                        |                          |
| VII f   | 4ème trim | ground fish S.    |        | 7                      |                          |
| VII h   | 4ème trim |                   |        | 13                     |                          |



Echantillonnage fait en 1977 au laboratoire ISTPM de  
La Rochelle

1. Criée.

|           |   |       |                                        |
|-----------|---|-------|----------------------------------------|
| Merlu     | : | 7 524 |                                        |
| Lieu noir | : | 440   | (72 en VIIa ; 368 en VIa)              |
| Morue     | : | 241   | (123 en VIa ; 75 en VIIa ; 44 en VIIf) |
| Merlan    | : | 615   |                                        |
| Eglefin   | : | 494   | (135 en VIIa ; 276 en VIIe, f)         |
| Lingue    | : | 157   |                                        |
| Sole      | : | 1 977 |                                        |
| Cardine   | : | 295   |                                        |
| Plie      | : | 74    |                                        |
| Maquereau | : | 1 124 |                                        |
| Dorade    | : | 627   |                                        |
| Baudroie  | : | 544   |                                        |
| Bar       | : | 275   |                                        |
| Chein     | : | 23    |                                        |

2. A la mer.

|                    |   |       |                   |
|--------------------|---|-------|-------------------|
| "Pelagia" Merlu    | : | 3 850 | (1 000 otolithes) |
| Courreauteurs Sole | : | 3 743 |                   |
| Bar                | : | 317   |                   |
| Plie               | : | 198   |                   |

Islande  
(J. Magnusson)

Research work in Iceland on demersal species of fish was continued along the same lines as in 1976.

The collection of data on landed demersal fish, mainly cod, haddock and redfish, was carried out in various ports as in previous years. Three branches of the Marine Research Institute were in operation the whole year with the same tasks as in 1976. The sampling of data, particularly on cod was considerably increased by the whole year activities of the movable fishery inspectors, but their work was intensified during 1977. The research vessels "Bjarni Sæmundsonn" and "Hafpor" were engaged in work on demersal species, particularly the latter.

The investigations on the distribution of mature cod just before and during the spawning period, as well as the investigation on the immature population of cod were carried out along the same lines as in the previous year.

A special research programme on the behaviour of cod in the area NW of Iceland implemented in 1976 was continued.

Research programmes on haddock and saithe were similar to that of cod.

During 1977 no special research cruises were carried out on redfish. The sampling on landed redfish was on the other hand increased.

One research cruise was carried out in order to locate the spawning area of Greenland halibut combined with research on other deep-sea species, particularly grenadier fish. Data were also collected on landed Greenland halibut.

Investigations on other demersal species were carried out in similar ways as in previous years. The number of fish sampled is shown in the attached tables.

Iceland - Sampling data for cod 1977

| Area | Season     | No. of samples   |                | No. of fish |       |        |
|------|------------|------------------|----------------|-------------|-------|--------|
|      |            | Research vessels | Market samples | Measured    | Aged  | Tagged |
| Va   | Jan.-March | 256              |                | 43284       | 2746  | 298    |
| "    | "          |                  | 58             | 14530       | 1789  | -      |
| "    | Apr.-June  | 274              |                | 42451       | 1808  | 398    |
| "    | "          |                  | 47             | 9279        | 1476  | -      |
| "    | July-Sept. | 264              |                | 41348       | 1753  | -      |
| "    | "          |                  | 126            | 19233       | 1001  | -      |
| "    | Oct.-Dec.  | 202              |                | 24911       | 1913  | 561    |
| "    | "          |                  | 34             | 5655        | 400   | -      |
|      | Total      | 996              | 265            | 200734      | 12886 | 1257   |

Iceland - Sampling data for haddock 1977

| Area | Season     | No. of samples   |                | No. of fish |      |        |
|------|------------|------------------|----------------|-------------|------|--------|
|      |            | Research vessels | Market samples | Measured    | Aged | Tagged |
| Va   | Jan.-March | 77               |                | 5993        | 505  | 2225   |
| "    | "          |                  | 17             | 2997        | 704  | -      |
| "    | Apr.- June | 64               |                | 8935        | 927  | -      |
| "    | "          |                  | 4              | -           | 400  | -      |
| "    | July-Sept. | 35               |                | 5013        | -    | -      |
| "    | "          |                  | 6              | 837         | 299  | -      |
| "    | Oct.-Dec.  | 61               |                | 6070        | 221  | 185    |
| "    | "          |                  | 15             | 2509        | 200  | -      |
|      | Total      | 237              | 42             | 32354       | 3256 | 2410   |

Iceland - Sampling data for saithe 1977

| Area  | Season     | No. of samples   |                | No. of fish |      |        |
|-------|------------|------------------|----------------|-------------|------|--------|
|       |            | Research vessels | Market samples | Measured    | Aged | Tagged |
| Va    | Jan.-March | 12               |                | 1563        |      |        |
| "     | "          |                  | 8              | 1619        | 300  |        |
| "     | Apr.-June  | 16               |                | 1020        | 76   |        |
| "     | "          |                  | 3              | 410         | 100  |        |
| "     | July-Sept. | 8                |                | 1276        | -    |        |
| "     | "          |                  | 3              | 400         | 200  |        |
| "     | Oct.-Dec.  | 10               |                | 802         | 222  |        |
| "     | "          |                  | 1              | 105         | -    |        |
| Total |            | 46               | 15             | 7195        | 898  |        |

Iceland - Sampling data for whiting 1977

| Area  | Season     | No. of samples   |                | No. of fish |      |
|-------|------------|------------------|----------------|-------------|------|
|       |            | Research vessels | Market samples | Measured    | Aged |
| Va    | Jan.-March | 9                |                | 293         |      |
| "     | Apr.-June  | 14               |                | 885         | 300  |
|       | Jul.-Sept. | 3                |                | 35          |      |
|       | Oct.-Dec.  | 5                |                | 513         |      |
| Total |            | 31               |                | 1726        | 300  |

Iceland - Sampling data for redfish 1977

| Area        | Season     | No. of samples   |                     | No. of fish |      |
|-------------|------------|------------------|---------------------|-------------|------|
|             |            | Research vessels | Market samples      | Measured    | Aged |
|             |            |                  | <u>S. marinus</u>   |             |      |
| Va          | Jan.-March | 57               | 3                   | 4576        | 186  |
| "           | Apr.-June  | 3                | 7                   | 1661        |      |
| "           | July-Sept. | 50               | 8                   | 5921        |      |
| "           | Oct.-Dec.  | 33               | 9                   | 4915        | 100  |
| Sub. total  |            | 143              | 27                  | 17073       | 286  |
|             |            |                  | <u>S. mentella</u>  |             |      |
| Va          | Jan.-March | 40               | 1                   | 1702        |      |
| "           | Apr.-June  | 1                |                     | 106         |      |
| "           | Oct.-Dec.  |                  | 1                   | 129         |      |
| Sub. total  |            | 41               | 2                   | 1937        |      |
|             |            |                  | <u>S. viviparus</u> |             |      |
| Va          | Jan.-March | 3                |                     | 81          |      |
| "           | July-Sept. | 1                |                     | 35          |      |
| "           | Oct.-Dec.  | 1                |                     | 43          |      |
| Sub. total  |            | 5                |                     | 159         |      |
| Grand total |            | 189              | 29                  | 19169       | 286  |

Iceland - Sampling data for Argentina silus 1977

| Area | Season     | No. of samples   |                | No. of fish |      |
|------|------------|------------------|----------------|-------------|------|
|      |            | Research vessels | Market samples | Measured    | Aged |
| Va   | Jan.-March | 20               |                | 310         |      |
| "    | Apr.-June  | 4                |                | 300         |      |
| "    | July-Sept. | 1                |                | 77          |      |
| "    | Oct.-Dec.  | 1                |                | 10          |      |
|      | Total      | 26               |                | 697         |      |

Iceland - Sampling data for blue ling 1977

| Area  | Season     | No. of samples   |                | No. of fish |      |
|-------|------------|------------------|----------------|-------------|------|
|       |            | Research vessels | Market samples | Measured    | Aged |
| Va    | Jan.-March | 33               |                | 195         |      |
| "     | Jul.-Sept. |                  | 1              | 180         |      |
| "     | Oct.-Dec.  | 1                | 1              | 64          |      |
| Total |            | 34               | 2              | 439         |      |

Iceland - Sampling data for plaice 1977

| Area        | Season     | No. of samples   |                | No. of fish |      |        |
|-------------|------------|------------------|----------------|-------------|------|--------|
|             |            | Research vessels | Market samples | Measured    | Aged | Tagged |
| Va          | Jan.-March | 27               |                | 456         | 586  | 1500   |
|             | Apr.-June  | 6                |                | 465         | 507  | 500    |
|             | July-Sept. | 52               |                | 4295        | 1134 | 500    |
| Grand total |            | 85               |                | 5216        | 2227 | 2500   |

Iceland - Sampling data for Greenland halibut 1977

| Area  | Season     | No. of samples   |                | No. of fish |      |        |
|-------|------------|------------------|----------------|-------------|------|--------|
|       |            | Research vessels | Market samples | Measured    | Aged | Tagged |
| Va    | Jan.-March | 50               | 1              | 2397        | 486  |        |
|       | Apr.-June  | 34               | 5              | 3490        | 1130 | 4752   |
|       | July-Sept. | 6                | 4              | 1916        |      |        |
|       | Oct.-Dec.  |                  | 1              | 67          |      |        |
| Total |            | 90               | 11             | 7870        | 1616 | 4752   |

Iceland - Sampling data for roughhead grenadier 1977

| Area | Season     | No. of samples   |                | No. of fish |      |
|------|------------|------------------|----------------|-------------|------|
|      |            | Research vessels | Market samples | Measured    | Aged |
| Va   | Jan.-March | 45               |                | 489         | 20   |
| "    | Apr.-June  | 9                |                | 224         | 101  |
|      | Total      | 54               |                | 713         | 121  |

Iceland - Sampling data. Various species

| Area | Season     | No. of samples   |                                          | No. of fish |      |        |
|------|------------|------------------|------------------------------------------|-------------|------|--------|
|      |            | Research vessels | Market samples                           | Measured    | Aged | Tagged |
| Va   | Jan.-Dec.  | 11               | <u>Catfish (A. lupus)</u>                |             |      | 1467   |
|      |            |                  | 5                                        | 1808        | 1595 |        |
| Va   | Jan.-Dec.  | 5                | <u>Norway pout (Trisopterus esmarki)</u> |             |      | 583    |
|      |            |                  | 3                                        | 2165        | 640  |        |
| Va   | Jan.-Dec.  | 10               | <u>Halibut (H. hippoglossus)</u>         |             |      | 583    |
|      |            |                  | -                                        | 112         | 554  |        |
| Va   | Jan.-March | 57               | <u>Roundnose grenadier</u>               |             |      | 200    |
|      |            |                  | -                                        | 7980        | 200  |        |
| Va   | Jan.-Sept. | 32               | <u>Lumpsucker (Cyclopterus lumpus)</u>   |             |      | 2269   |
|      |            |                  | 21                                       | 3610        | 2269 |        |

Irelande  
(J.P. Hillis)

Cod, haddock, whiting and plaice were sampled at the ports shown in the Table, two ports being sampled in Divisions VIa and VIIa due to the disparity in age - composition between catches of the main species from different parts of the Divisions. Small scale studies on fish landed for fish meal and mink food were carried out at Lillybegs.

Plaice

Spring and autumn beam trawl surveys for juveniles were carried out in Division VIIa.

Sampling Data

| Species | Division,<br>Port             | Season           | No. of<br>samples<br>(all market) | No. of fish |      |
|---------|-------------------------------|------------------|-----------------------------------|-------------|------|
|         |                               |                  |                                   | Measured    | Aged |
| COD     | VIa<br>Killybegs              | 1                | 10                                | 484         | 259  |
|         |                               | 2                | 11                                | 197         | 88   |
|         |                               | 3                | 2                                 | 30          | 30   |
|         |                               | 4                | 6                                 | 455         | 260  |
|         | Greencastle                   | 2                | 2                                 | 104         | 38   |
|         |                               | 3                | 3                                 | 190         | 86   |
|         |                               | 4                | -                                 | -           | -    |
|         |                               | Total            | 34                                | 1460        | 761  |
|         | VIIa<br>Howth                 | 1                | 7                                 | 488         | 255  |
|         |                               | 2                | 3                                 | 520         | 237  |
|         |                               | 3                | 5                                 | 587         | 216  |
|         |                               | 4                | 3                                 | 410         | 158  |
|         | Kilmore Quay<br>/Dunmore East | 1                | 1                                 | 45          | 45   |
|         |                               | 2                | 2                                 | 289         | 51   |
|         |                               | 4                | 5                                 | 660         | 151  |
|         |                               | Total            | 26                                | 2999        | 1113 |
|         | VIIbc<br>Galway               | 1                | 5                                 | 364         | 213  |
|         |                               | 4                | 2                                 | 233         | 233  |
|         |                               | Total            | 7                                 | 597         | 446  |
|         | VIIg-k<br>Castletownbere      | Total<br>(all 4) | 3                                 | 264         | 168  |
|         | OVERALL                       | TOTAL            | 70                                | 5320        | 2488 |
| HADDOCK | VIa<br>Killybegs              | 1                | 5                                 | 962         | 336  |
|         |                               | 2                | 13                                | 1288        | 140  |
|         |                               | 3                | 8                                 | 817         | 532  |
|         |                               | 4                | 4                                 | 575         | 144  |
|         | Greencastle                   | 3                | 3                                 | 172         | 88   |
|         |                               | Total            | 33                                | 3814        | 1240 |
|         | VIIbc<br>Galway               | 1                | 4                                 | 271         | 224  |
|         |                               | 2                | 1                                 | 45          | 45   |
|         |                               | 3                | 1                                 | 47          | 47   |
|         |                               | 4                | 1                                 | 63          | 59   |
|         | VIIg-k<br>Castletownbere      | Total            | 7                                 | 426         | 375  |
|         |                               | Total<br>(all 2) | 3                                 | 173         | 157  |
|         | OVERALL                       | TOTAL            | 43                                | 4413        | 1772 |

Sampling Data

| Species | Division,<br>Port             | Season | No. of<br>samples<br>(all market) | No. of fish |      |      |     |
|---------|-------------------------------|--------|-----------------------------------|-------------|------|------|-----|
|         |                               |        |                                   | Measured    |      | Aged |     |
| WHITING | VIa<br>Killybegs              | 1      | 2                                 | 488         |      | 104  |     |
|         |                               | 2      | 8                                 | 1291        |      | 81   |     |
|         |                               | 3      | 8                                 | 1465        |      | 180  |     |
|         |                               | 4      | 2                                 | 278         |      | 67   |     |
|         | VIa<br>Greencastle            | 1      | 2                                 | 550         |      | 88   |     |
|         |                               | Total  | 22                                | 4072        |      | 520  |     |
|         | VIIa<br>Howth                 | 1      | 2                                 | 303         |      | 101  |     |
|         |                               | 2      | 2                                 | 547         |      | 115  |     |
|         |                               | 3      | 4                                 | 1250        |      | 85   |     |
|         |                               | 4      | 2                                 | 906         |      | 122  |     |
|         |                               | Total  | 10                                | 3006        |      | 423  |     |
|         | VIIbc<br>Galway               | 1      | 2                                 | 239         |      | 149  |     |
|         |                               | 3      | 1                                 | 514         |      | 132  |     |
|         |                               | 4      | 2                                 | 592         |      | 116  |     |
|         |                               | Total  | 5                                 | 1345        |      | 397  |     |
|         | OVERALL                       | TOTAL  | 37                                | 8423        |      | 1340 |     |
| PLAICE  | VIa<br>Killybegs              | 1      | 6                                 | 429         | 499  | 86   | 73  |
|         |                               | 2      | 3                                 | 596         | 471  | 115  | 156 |
|         |                               | 3      | 2                                 | 104         | 108  | 104  | 108 |
|         |                               | 4      | 2                                 | 281         | 164  | 67   | 75  |
|         | Greencastle                   | 1      | 1                                 | 145         | 159  | 63   | 85  |
|         |                               | 2      | 1                                 | 136         | 167  | 46   | 57  |
|         |                               | 3      | 6                                 | 1132        | 1173 | 111  | 124 |
|         |                               | Total  | 21                                | 2823        | 2741 | 592  | 678 |
|         | VIIa<br>Howth                 | 1      | 1                                 | 247         | 167  | 59   | 104 |
|         |                               | 2      | 2                                 | 72          | 256  | 87   | 115 |
|         |                               | 3      | 5                                 | 568         | 638  | 110  | 148 |
|         |                               | 4      | 2                                 | 208         | 186  | 52   | 62  |
|         | Kilmore Quay<br>/Dunmore East | 1      | 1                                 | 92          | 39   | 83   | 39  |
|         |                               | 2      | 2                                 | 587         | 866  | 71   | 114 |
|         |                               | 3      | 3                                 | 163         | 254  | 78   | 120 |
|         |                               | 4      | 4                                 | 289         | 281  | 25   | 33  |
|         |                               | Total  | 20                                | 2226        | 2687 | 565  | 735 |



Sampling Data

| Species | Division,<br>Port       | Season           | No. of<br>samples<br>(all market) | No. of fish |        |      |        |
|---------|-------------------------|------------------|-----------------------------------|-------------|--------|------|--------|
|         |                         |                  |                                   | Measured    |        | Aged |        |
| PLAICE  | VIIbc<br>Galway         | 1                | 3                                 | Male        | Female | Male | Female |
|         |                         | 2                | 1                                 | 152         | 197    | 59   | 97     |
|         |                         | 3                | 2                                 | 51          | 88     | 45   | 66     |
|         |                         | 4                | 3                                 | 238         | 236    | 57   | 61     |
|         |                         |                  |                                   | 244         | 227    | 96   | 135    |
|         |                         | Total            | 9                                 | 685         | 748    | 257  | 359    |
|         | VIIgk<br>Castletownbere | Total<br>(all 4) | 1                                 | 40          | 182    | 40   | 153    |
| OVERALL |                         | TOTAL            | 51                                | 5774        | 6358   | 1454 | 1925   |

Norvège  
(C.J. Rørvik)

Sub-areas I and II

The research activities at sea were nearly the same in 1977 as the last previous years. The distribution and abundance of young cod and haddock were studied with two research vessels in the Barents Sea in January-February. In February-March the concentrations of mature Arcto-Norwegian cod were charted in Lofoten. In April-May investigations of cod larvae and post-larvae were carried out in Lofoten. In August-September the annual international 0-group fish survey was carried out in the Barents Sea and adjacent waters. In October-November the distribution and abundance of cod, haddock, redfish and blue whiting were investigated in the Bear Island - West Spitsbergen area.

Tagging experiments of the major roundfish species continued. In March-April mature cod were tagged in Lofoten. In June young saithe were tagged in the southern part of Division IIa. In August, cod, haddock and saithe were tagged in the coastal waters of northern Norway.

The abundance of 0-group saithe in the littoral zone was studied at selected localities along the Norwegian coast in September-October.

Market sampling of Recommendation 4 species continued. The sampling of Recommendation 2 fisheries continued.

Sub-area IV

The sampling of Recommendation 2 fisheries from Division IVa continued.

As a part of international surveys, the distribution and abundance of I- and II-group gadoids were studied in February-March, and 0-group gadoids and young sandeel were studied in June.

The influx of 0-group blue whiting to the Northern North Sea was investigated in November-December. Saithe were tagged in April and June along the Norwegian coast.

| SPECIES<br>AREA | Season | RESEARCH VESSEL   |                |                   |                |        | MARKET            |                |                   |                |
|-----------------|--------|-------------------|----------------|-------------------|----------------|--------|-------------------|----------------|-------------------|----------------|
|                 |        | Aged              |                | Measured          |                | Tagged | Aged              |                | Measured          |                |
|                 |        | No. of<br>samples | No. of<br>fish | No. of<br>samples | No. of<br>fish |        | No. of<br>samples | No. of<br>fish | No. of<br>samples | No. of<br>fish |
| <u>Cod</u>      | 1      | 25                | 2285           | 35                | 2923           | -      | -                 | -              | -                 | -              |
| I               | 2      | -                 | -              | -                 | -              | -      | 16                | 1475           | 32                | 12482          |
|                 | 3      | 5                 | 467            | 25                | 1269           | 826    | -                 | -              | -                 | -              |
|                 | 4      | -                 | -              | -                 | -              | -      | 21                | 2137           | 154               | 12931          |
| II A            | 1      | 4                 | 250            | 14                | 235            | 2964   | 22                | 1641           | 35                | 6976           |
|                 | 2      | -                 | -              | -                 | -              | 729    | 6                 | 565            | 5                 | 1590           |
|                 | 3      | 3                 | 162            | 5                 | 268            | 174    | -                 | -              | -                 | -              |
|                 | 4      | -                 | -              | -                 | -              | -      | 1                 | 100            | 3                 | 791            |
| II B            | 1      | 1                 | 104            | 1                 | 135            |        |                   |                |                   |                |
|                 | 2      | 11                | 1200           | 56                | 54443          |        |                   |                |                   |                |
|                 | 4      | 14                | 759            | 22                | 156            |        |                   |                |                   |                |
| IV A            | 1      | 4                 | 64             | -                 | -              |        |                   |                | 70                | 210            |
|                 | 2      | -                 | -              | 29                | 392            |        |                   |                | 36                | 69             |
|                 | 3      | -                 | -              | -                 | -              |        |                   |                | 29                | 40             |
|                 | 4      | -                 | -              | 4                 | 18             |        |                   |                | 2                 | 2              |
| IV B            | 1      | 2                 | 30             | -                 | -              |        |                   |                |                   |                |
|                 | 2      | -                 | -              | 2                 | 12             |        |                   |                |                   |                |
|                 | 4      | -                 | -              | 1                 | 6              |        |                   |                |                   |                |
| <u>Saithe</u>   | 2      | -                 | -              | -                 | -              | 1000   |                   |                | 1                 | 59             |
| I               | 3      | 3                 | 304            | 3                 | 1400           | 1000   |                   |                | -                 | -              |
|                 | 4      |                   |                |                   |                |        |                   |                | 7                 | 706            |
| II A            | 1      | 1                 | 93             | 9                 | 300            | -      | 7                 | 812            | 11                | 1865           |
|                 | 2      | 4                 | 400            | 4                 | 2187           | 3030   | 12                | 1395           | 12                | 4257           |
|                 | 3      | 1                 | 101            | 1                 | 486            | 1000   | 1                 | 120            | 2                 | 371            |
|                 | 4      | -                 | -              | -                 | -              | -      | 2                 | 240            | 2                 | 429            |
| IV A            | 1      | 2                 | 192            | 1                 | 175            | -      | 2                 | 224            | 44                | 306            |
|                 | 2      | 4                 | 399            | 17                | 1481           | 1900   | -                 | -              | 10                | 46             |
|                 | 3      | -                 | -              | -                 | -              | -      | -                 | -              | 42                | 405            |
|                 | 4      | -                 | -              | 8                 | 57             | -      | -                 | -              | 16                | 105            |

| SPECIES<br>AREA | Season | RESEARCH VESSEL   |                |                   |                |        | MARKET            |                |                   |                |
|-----------------|--------|-------------------|----------------|-------------------|----------------|--------|-------------------|----------------|-------------------|----------------|
|                 |        | Aged              |                | Measured          |                | Tagged | Aged              |                | Measured          |                |
|                 |        | No. of<br>samples | No. of<br>fish | No. of<br>samples | No. of<br>fish |        | No. of<br>samples | No. of<br>fish | No. of<br>samples | No. of<br>fish |
| <u>Haddock</u>  | 1      | 14                | 992            | 32                | 3973           | -      |                   |                |                   |                |
| I               | 2      | -                 | -              | -                 | -              | -      | 6                 | 665            | 7                 | 545            |
|                 | 3      | 2                 | 114            | 2                 | 300            | 300    | -                 | -              | -                 | -              |
|                 | 4      | -                 | -              | -                 | -              | -      | 10                | 1082           | 82                | 4816           |
| II A            | 1      | 1                 | 101            | 15                | 580            | -      | 3                 | 148            | 7                 | 254            |
|                 | 2      | -                 | -              | -                 | -              | -      | -                 | -              | 4                 | 114            |
|                 | 3      | 6                 | 307            | 7                 | 905            | 900    | 1                 | 85             | 7                 | 40             |
|                 | 4      | -                 | -              | -                 | -              | -      | 1                 | 100            | 6                 | 301            |
| II B            | 1      | -                 | -              | 2                 | 10             |        |                   |                |                   |                |
|                 | 2      | -                 | -              | 9                 | 50             |        |                   |                |                   |                |
|                 | 3      | -                 | -              | 2                 | 12             |        |                   |                |                   |                |
|                 | 4      | -                 | -              | 8                 | 98             |        |                   |                |                   |                |
| IV A            | 1      | 5                 | 343            | 26                | 2266           |        |                   |                | 41                | 832            |
|                 | 2      | -                 | -              | 37                | 1688           |        |                   |                | 48                | 569            |
|                 | 3      | -                 | -              | -                 | -              |        |                   |                | 23                | 431            |
|                 | 4      | 1                 | 81             | 9                 | 1281           |        |                   |                | 28                | 953            |
| IV B            | 1      | 3                 | 179            | 3                 | 485            |        |                   |                |                   |                |
|                 | 2      | 1                 | 141            | 4                 | 128            |        |                   |                |                   |                |
|                 | 4      | -                 | -              | 1                 | 34             |        |                   |                |                   |                |
| <u>Whiting</u>  | 1      | -                 | -              | 1                 | 7              |        |                   |                |                   |                |
| II a            |        |                   |                |                   |                |        |                   |                |                   |                |
| IV A            | 1      | 5                 | 272            | 18                | 1021           |        |                   |                | 101               | 3179           |
|                 | 2      | -                 | -              | 5                 | 157            |        |                   |                | 11                | 149            |
|                 | 3      | -                 | -              | -                 | -              |        |                   |                | 4                 | 25             |
|                 | 4      | -                 | -              | 7                 | 204            |        |                   |                | 6                 | 154            |
| IV B            | 1      | 5                 | 220            | 13                | 1247           |        |                   |                |                   |                |
|                 | 2      | 1                 | 60             | 3                 | 52             |        |                   |                |                   |                |
|                 | 3      | -                 | -              | -                 | -              |        |                   |                |                   |                |
|                 | 4      | -                 | -              | 1                 | 38             |        |                   |                |                   |                |

| SPECIES<br>AREA           | Season | RESEARCH VESSEL   |                |                   |                |        | MARKET            |                |                   |                |
|---------------------------|--------|-------------------|----------------|-------------------|----------------|--------|-------------------|----------------|-------------------|----------------|
|                           |        | Aged              |                | Measured          |                | Tagged | Aged              |                | Measured          |                |
|                           |        | No. of<br>samples | No. of<br>fish | No. of<br>samples | No. of<br>fish |        | No. of<br>samples | No. of<br>fish | No. of<br>samples | No. of<br>fish |
| <u>Redfish</u>            | 1      |                   |                | 39                | 4001           |        |                   |                |                   |                |
| I                         | 2      |                   |                |                   |                |        |                   |                | 1                 | 77             |
| II a                      | 1      |                   |                | 17                | 971            |        |                   |                |                   |                |
| II b                      | 1      |                   |                | 2                 | 123            |        |                   |                |                   |                |
|                           | 2      |                   |                | 4                 | 40             |        |                   |                |                   |                |
|                           | 3      |                   |                | 5                 | 666            |        |                   |                |                   |                |
|                           | 4      |                   |                | 14                | 1337           |        |                   |                |                   |                |
| IV a                      | 1      |                   |                | 1                 | 67             |        |                   |                |                   |                |
|                           | 4      |                   |                |                   |                |        |                   |                | 1                 | 12             |
| <u>Long rough<br/>dab</u> |        |                   |                |                   |                |        |                   |                |                   |                |
| I                         | 1      |                   |                | 24                | 4388           |        |                   |                |                   |                |
| II a                      | 1      |                   |                | 3                 | 62             |        |                   |                |                   |                |
| II b                      | 1      |                   |                | 1                 | 44             |        |                   |                |                   |                |
|                           | 2      |                   |                | 5                 | 1218           |        |                   |                |                   |                |
|                           | 3      |                   |                | 2                 | 443            |        |                   |                |                   |                |
|                           | 4      |                   |                | 17                | 3088           |        |                   |                |                   |                |
| IV a                      | 1      |                   |                | 4                 | 359            |        |                   |                |                   |                |
|                           | 2      |                   |                | 6                 | 154            |        |                   |                |                   |                |
|                           | 4      |                   |                | 3                 | 95             |        |                   |                |                   |                |
| IV b                      | 1      |                   |                | 2                 | 142            |        |                   |                |                   |                |
|                           | 2      |                   |                | 3                 | 106            |        |                   |                |                   |                |

| SPECIES<br>AREA          | Season | RESEARCH VESSEL   |                |                   |                |        | MARKET            |                |                   |                |
|--------------------------|--------|-------------------|----------------|-------------------|----------------|--------|-------------------|----------------|-------------------|----------------|
|                          |        | Aged              |                | Measured          |                | Tagged | Aged              |                | Measured          |                |
|                          |        | No. of<br>samples | No. of<br>fish | No. of<br>samples | No. of<br>fish |        | No. of<br>samples | No. of<br>fish | No. of<br>samples | No. of<br>fish |
| <u>Greenland halibut</u> | 1      | 7                 | 80             | 2                 | 2              |        |                   |                | -                 | -              |
| I                        | 2      | -                 | -              | -                 | -              |        |                   |                | 6                 | 639            |
|                          | 4      | -                 | -              | -                 | -              |        |                   |                | 1                 | 103            |
| II B                     | 3      |                   |                | 1                 | 25             |        |                   |                | -                 | -              |
|                          | 4      |                   |                | 10                | 266            |        |                   |                | -                 | -              |
| <u>Ling</u>              | 1      | -                 | -              | 1                 | 3              |        |                   |                | -                 | -              |
| II A                     | 2      | -                 | -              | -                 | -              |        |                   |                | 3                 | 577            |
|                          | 3      | -                 | -              | -                 | -              |        |                   |                | 17                | 2525           |
| IV A                     | 2      | -                 | -              | -                 | -              |        |                   |                | 1                 | 22             |
|                          | 3      | -                 | -              | -                 | -              |        |                   |                | 9                 | 2838           |
| <u>Blue ling</u>         |        |                   |                |                   |                |        |                   |                |                   |                |
| V b                      | 4      | -                 | -              | -                 | -              |        | 1                 | 116            | -                 | -              |
| <u>Tusk</u>              |        |                   |                |                   |                |        |                   |                |                   |                |
| I                        | 1      | -                 | -              | 1                 | 3              |        |                   |                | -                 | -              |
| II A                     | 1      | -                 | -              | 3                 | 7              |        |                   |                | -                 | -              |
|                          | 2      | -                 | -              | -                 | -              |        |                   |                | 3                 | 378            |
|                          | 3      | -                 | -              | -                 | -              |        |                   |                | 14                | 3874           |
| IV A                     | 3      | -                 | -              | -                 | -              |        |                   |                | 6                 | 2566           |
| <u>Sandeel</u>           | 2      | -                 | -              | 32                | 1318           |        |                   |                | 4                 | 405            |
| IV A                     | 3      | -                 | -              | -                 | -              |        |                   |                | 3                 | 299            |
| IV B                     | 2      | -                 | -              | 5                 | 327            |        |                   |                | 3                 | 300            |

| SPECIES<br>AREA     | Season | RESEARCH VESSEL   |                |                   |                |        | MARKET            |                |                   |                |
|---------------------|--------|-------------------|----------------|-------------------|----------------|--------|-------------------|----------------|-------------------|----------------|
|                     |        | Aged              |                | Measured          |                | Tagged | Aged              |                | Measured          |                |
|                     |        | No. of<br>samples | No. of<br>fish | No. of<br>samples | No. of<br>fish |        | No. of<br>samples | No. of<br>fish | No. of<br>samples | No. of<br>fish |
| <u>Norway pout</u>  |        |                   |                |                   |                |        |                   |                |                   |                |
| I                   | 1      |                   |                | 3                 | 475            |        |                   |                |                   |                |
| II A                | 1      |                   |                | 3                 | 105            |        |                   |                | 4                 | 410            |
| IV A                | 1      | 8                 | 174            | 31                | 2972           |        | 1                 | 76             | 41                | 4115           |
|                     | 2      | 2                 | 27             | 23                | 823            |        | 1                 | 27             | 51                | 4741           |
|                     | 3      | 1                 | 21             | -                 | -              |        | 2                 | 64             | 33                | 3127           |
|                     | 4      | 5                 | 143            | 12                | 1173           |        | 2                 | 58             | 28                | 2323           |
| IV B                | 1      | 2                 | 31             | 4                 | 339            |        |                   |                |                   |                |
|                     | 4      | 1                 | 29             | 1                 | 117            |        |                   |                |                   |                |
| <u>Blue whiting</u> |        |                   |                |                   |                |        |                   |                |                   |                |
| I                   | 1      |                   |                | 4                 | 9              |        |                   |                |                   |                |
| II A                | 1      | -                 | -              | 4                 | 44             |        |                   |                | 7                 | 639            |
|                     | 2      | -                 | -              | -                 | -              |        |                   |                | 17                | 1012           |
|                     | 3      | -                 | -              | -                 | -              |        |                   |                | 5                 | 254            |
|                     | 4      | -                 | -              | -                 | -              |        |                   |                | 1                 | 50             |
| II B                | 2      |                   |                | 2                 | 252            |        |                   |                |                   |                |
|                     | 4      |                   |                | 14                | 1394           |        |                   |                |                   |                |
| IV A                | 1      | -                 | -              | 1                 | 111            |        |                   |                | 5                 | 498            |
|                     | 2      | -                 | -              | -                 | -              |        |                   |                | 25                | 2295           |
|                     | 3      | -                 | -              | -                 | -              |        |                   |                | 6                 | 412            |
|                     | 4      | -                 | -              | 16                | 1216           |        |                   |                | 9                 | 713            |
| <u>Silver smelt</u> |        |                   |                |                   |                |        |                   |                |                   |                |
| I                   | 1      |                   |                | 2                 | 6              |        |                   |                |                   |                |
| II A                | 1      | -                 | -              | 4                 | 35             |        | 4                 | 356            | 10                | 875            |
|                     | 2      | -                 | -              | -                 | -              |        | 3                 | 275            | 4                 | 247            |
|                     | 3      | -                 | -              | -                 | -              |        | 5                 | 303            | 7                 | 410            |
|                     | 4      | -                 | -              | -                 | -              |        | -                 | -              | 1                 | 50             |
| IV A                | 2      | -                 | -              | -                 | -              |        | -                 | -              | 9                 | 437            |
|                     | 3      | -                 | -              | 1                 | 27             |        | 1                 | 78             | 3                 | 150            |
|                     | 4      | -                 | -              | 4                 | 199            |        | -                 | -              | 7                 | 140            |

Pays Bas

(J.F. de Veen)

Travail en mer.

Le "Tridens" a participé à 24 campagnes dans le region de la Comité dont 11 ont été consacrés au travail concernant la Commission des Poissons Demersaux.

Les navires "Stern" et "Schollevaar" ont faites ensemble 20 voyages scientifiques consacrés aux recherches demersales dans les estuaires Néerlandais.

Les navires "Stern", "Schollevaar" et "Tridens" ont faites deux voyages ensemble en avril et en septembre-octobre pour l'analyse des stocks de la sole, plie, limande, gadidés, crevette grise et autres organismes dans les nurseries de la Belgique, les Pays-Bas et la République Fédérale de l'Allemagne en collaboration avec les collègues Belges et Allemands.

Le navire "Rose Marie" a fait une voyage scientifique en may pour estimer l'abondance du recrutement des nouvelles classes d'âge des poissons demersaux en Mer d'Irlande.

Travail au Laboratoire

Plie

L'analyse des stocks au moyen des échantillons au marché et au bateaux de recherche courant les différentes sous-populations dans la Mer du Nord était continuée avec l'accent sur le premier trimestre, le saison de ponte. Discarding des poissons et les chances de survivance avait été étudié au bord des navires commerciaux.

Sole

L'analyse des stocks au moyen des échantillons au marché et au bord des bateaux de recherche dans des localités diverses de la Mer du Nord, de la Mer d'Irlande et du Golfe de Gascogne était continuée.

L'abondance du recrutement des nouvelles classes d'âge dans la Mer d'Irlande à été étudié pendant une voyage scientifique au printemps.

La classe d'âge de 1974 se manifestait comme pauvre en recrutement. En contraste la classe d'âge 1975 était bonne et l'analyse des recherches dans les nurseries réalisées pendant la campagne internationale de la Belgique, les Pays-Bas et l'Allemagne occidentale montrait que la classe d'âge 1976 est très abondante.

Limande

Pendant la campagne internationale pour étudier l'abondance du recrutement la structure d'âge de la population de la limande de la Mer du Nord était analysée.

Morue, Eglefin, Merlan et Lieu noir

L'analyse des stocks des gadidés était continuée.

La "Tridens" a participé en 1977 à l'"International Young Herring Survey" avec collecte de données sur les gadidés de premier âge en février et en juin à une campagne pour estimer l'abondance des gadidés de 0-groupe pendant la phase pélagique.

| Région                    | Saison                 | Nombre d'échantillons<br>pour détermination<br>de l'âge seulement |        | Nombre de poissons |                         |
|---------------------------|------------------------|-------------------------------------------------------------------|--------|--------------------|-------------------------|
|                           |                        | bateau de<br>recherche                                            | marché | mesurés            | d'otolithes<br>prélevés |
| IIIa                      | 2 <sup>ème</sup> trim. | 1                                                                 | 2      | 162                | 265                     |
|                           | 4 <sup>ème</sup> trim. | 1                                                                 | 1      | 2 492              | 191                     |
| IVb                       | 1 <sup>er</sup> trim.  | -                                                                 | 105    | -                  | 7 332                   |
|                           | 2 <sup>ème</sup> trim. | 10                                                                | 12     | 1 399              | 1 246                   |
|                           | 3 <sup>ème</sup> trim. | -                                                                 | 15     | -                  | 953                     |
|                           | 4 <sup>ème</sup> trim. | 10                                                                | 14     | 888                | 1 813                   |
| IVc                       | 1 <sup>er</sup> trim.  | -                                                                 | 25     | -                  | 1 737                   |
|                           | 2 <sup>ème</sup> trim. | 3                                                                 | 3      | 481                | 457                     |
|                           | 3 <sup>ème</sup> trim. | -                                                                 | 5      | -                  | 361                     |
|                           | 4 <sup>ème</sup> trim. | 9                                                                 | 14     | 2 467              | 1 618                   |
| VIIa                      | 1 <sup>er</sup> trim.  | -                                                                 | -      | -                  | -                       |
|                           | 2 <sup>ème</sup> trim. | 8                                                                 | -      | 1 134              | 502                     |
|                           | 3 <sup>ème</sup> trim. | -                                                                 | -      | -                  | -                       |
|                           | 4 <sup>ème</sup> trim. | -                                                                 | -      | -                  | -                       |
| Waddenzee<br>Neerlandaise | 2 <sup>ème</sup> trim. | 12                                                                | -      | 2 073              | 318                     |
|                           | 4 <sup>ème</sup> trim. | 12                                                                | -      | 3.161              | 448                     |
| Zeeland<br>estuaire       | 2 <sup>ème</sup> trim. | 8                                                                 | -      | 755                | 292                     |
|                           | 4 <sup>ème</sup> trim. | 7                                                                 | -      | 1 649              | 331                     |
| Total annuel              |                        | 81                                                                | 196    | 16 661             | 17 864                  |



| Région               | Saison                 | Nombre d'échantillons<br>pour détermination<br>de l'âge seulement |        | Nombre de poissons |                         |
|----------------------|------------------------|-------------------------------------------------------------------|--------|--------------------|-------------------------|
|                      |                        | bateau de<br>recherche                                            | marché | mesurés            | d'otolithes<br>prélevés |
| IIIa                 | 4 <sup>ème</sup> trim. | 1                                                                 | -      | 46                 | 5                       |
| IVb                  | 1 <sup>er</sup> trim.  | -                                                                 | 14     | -                  | 700                     |
|                      | 2 <sup>ème</sup> trim. | 8                                                                 | 56     | 84                 | 2 909                   |
|                      | 3 <sup>ème</sup> trim. | -                                                                 | 17     | -                  | 850                     |
|                      | 4 <sup>ème</sup> trim. | 10                                                                | 13     | 584                | 898                     |
| IVc                  | 1 <sup>er</sup> trim.  | -                                                                 | 8      | -                  | 400                     |
|                      | 2 <sup>ème</sup> trim. | 3                                                                 | 63     | 179                | 3 300                   |
|                      | 3 <sup>ème</sup> trim. | -                                                                 | 10     | -                  | 500                     |
|                      | 4 <sup>ème</sup> trim. | 9                                                                 | 7      | 1 087              | 608                     |
| VIIa                 | 1 <sup>er</sup> trim.  | -                                                                 | 4      | -                  | 200                     |
|                      | 2 <sup>ème</sup> trim. | 8                                                                 | 18     | 1 367              | 1 498                   |
|                      | 3 <sup>ème</sup> trim. | -                                                                 | -      | -                  | -                       |
|                      | 4 <sup>ème</sup> trim. | -                                                                 | -      | -                  | -                       |
| Golfe de<br>Gascogne | 3 <sup>ème</sup> trim. | -                                                                 | 1      | -                  | 50                      |
| Waddenzee            | 2 <sup>ème</sup> trim. | 10                                                                | -      | 702                | 150                     |
| Néerlandaise         | 4 <sup>ème</sup> trim. | 11                                                                | -      | 505                | 139                     |
| Zeeland              | 2 <sup>ème</sup> trim. | 6                                                                 | -      | 352                | 179                     |
| estuaire             | 4 <sup>ème</sup> trim. | 6                                                                 | -      | 504                | 72                      |
| Total annuel         |                        | 72                                                                | 211    | 5 410              | 12 458                  |

| Région                    | Saison                 | Nombre d'échantillons<br>pour détermination<br>de l'âge seulement |        | Nombre de poissons |                         |
|---------------------------|------------------------|-------------------------------------------------------------------|--------|--------------------|-------------------------|
|                           |                        | bateau de<br>recherche                                            | marché | mesurés            | d'otolithes<br>prélevés |
| IIIa                      | 2 <sup>ème</sup> trim. | 1                                                                 | -      | 69                 | 74                      |
|                           | 4 <sup>ème</sup> trim. | 1                                                                 | -      | 732                | 56                      |
| IVb                       | 1 <sup>er</sup> trim.  | -                                                                 | -      | -                  | -                       |
|                           | 2 <sup>ème</sup> trim. | 10                                                                | -      | 1 586              | 686                     |
|                           | 3 <sup>ème</sup> trim. | -                                                                 | -      | -                  | -                       |
|                           | 4 <sup>ème</sup> trim. | 10                                                                | -      | 1 156              | 669                     |
| IVc                       | 1 <sup>er</sup> trim.  | -                                                                 | -      | -                  | -                       |
|                           | 2 <sup>ème</sup> trim. | 3                                                                 | -      | 450                | 270                     |
|                           | 3 <sup>ème</sup> trim. | -                                                                 | -      | -                  | -                       |
|                           | 4 <sup>ème</sup> trim. | 9                                                                 | -      | 2 972              | 655                     |
| VIIa                      | 1 <sup>er</sup> trim.  | -                                                                 | -      | -                  | -                       |
|                           | 2 <sup>ème</sup> trim. | 8                                                                 | -      | 1 518              | 380                     |
|                           | 3 <sup>ème</sup> trim. | -                                                                 | -      | -                  | -                       |
|                           | 4 <sup>ème</sup> trim. | -                                                                 | -      | -                  | -                       |
| Waddenzee<br>Néerlandaise | 2 <sup>ème</sup> trim. | 4                                                                 | -      | 279                | 50                      |
|                           | 4 <sup>ème</sup> trim. | 11                                                                | -      | 2 581              | 269                     |
| Zeeland<br>estuaire       | 2 <sup>ème</sup> trim. | 3                                                                 | -      | 70                 | 33                      |
|                           | 4 <sup>ème</sup> trim. | 6                                                                 | -      | 1 346              | 81                      |
| Total annuel              |                        | 66                                                                | -      | 12 759             | 3 223                   |

1977 Echantillonnage Lieu noir

| Région       | Saison                 | Nombre d'échantillons<br>pour détermination<br>de l'âge seulement |        | Nombre de poissons |                         |
|--------------|------------------------|-------------------------------------------------------------------|--------|--------------------|-------------------------|
|              |                        | bateau de<br>recherche                                            | marché | mesurés            | d'otolithes<br>prélevés |
| IV           | 1 <sup>er</sup> trim.  | 1                                                                 | 9      | 660                | 487                     |
|              | 2 <sup>ème</sup> trim. | -                                                                 | 6      | 429                | 285                     |
|              | 3 <sup>ème</sup> trim. | -                                                                 | 3      | 323                | 141                     |
|              | 4 <sup>ème</sup> trim. | -                                                                 | 3      | 138                | 387                     |
| VII          | 1 <sup>er</sup> trim.  | -                                                                 | 1      | 55                 | 55                      |
|              | 2 <sup>ème</sup> trim. | -                                                                 | -      | -                  | -                       |
|              | 3 <sup>ème</sup> trim. | -                                                                 | -      | -                  | -                       |
|              | 4 <sup>ème</sup> trim. | -                                                                 | -      | -                  | -                       |
| Total annuel |                        | 1                                                                 | 22     | 1 854              | 1 156                   |

1977 Echantillonnage Eglefin

| Région       | Saison                 | Nombre d'échantillons pour détermination de l'âge seulement |        | Nombre de poissons |                      |
|--------------|------------------------|-------------------------------------------------------------|--------|--------------------|----------------------|
|              |                        | bateau de recherche                                         | marché | mesurés            | d'otolithes prélevés |
| IV           | 1 <sup>er</sup> trim.  | 7                                                           | 6      | 1 329              | 589                  |
|              | 2 <sup>ème</sup> trim. | -                                                           | 4      | 1 352              | 200                  |
|              | 3 <sup>ème</sup> trim. | -                                                           | 6      | 1 484              | 300                  |
|              | 4 <sup>ème</sup> trim. | -                                                           | 5      | 953                | 175                  |
| Total annuel |                        | 7                                                           | 21     | 5 118              | 1 264                |

1977 Echantillonnage Merlan

| Région       | Saison                 | Nombre d'échantillons pour détermination de l'âge seulement |        | Nombre de poissons |                      |
|--------------|------------------------|-------------------------------------------------------------|--------|--------------------|----------------------|
|              |                        | bateau de recherche                                         | marché | mesurés            | d'otolithes prélevés |
| IIIa         | 2 <sup>ème</sup> trim. | -                                                           | -      | 3                  | -                    |
|              | 4 <sup>ème</sup> trim. | -                                                           | -      | 679                | -                    |
| IV           | 1 <sup>er</sup> trim.  | 8                                                           | 8      | 2 886              | 685                  |
|              | 2 <sup>ème</sup> trim. | -                                                           | 7      | 4 632              | 350                  |
|              | 3 <sup>ème</sup> trim. | -                                                           | 5      | 3 115              | 250                  |
|              | 4 <sup>ème</sup> trim. | -                                                           | 6      | 6 037              | 298                  |
| Total annuel |                        | 8                                                           | 26     | 17 302             | 1 583                |

1977 Echantillonnage Morue

| Région       | Saison                 | Nombre d'échantillons<br>pour détermination<br>de l'âge seulement |        | Nombre de poissons |                         |
|--------------|------------------------|-------------------------------------------------------------------|--------|--------------------|-------------------------|
|              |                        | bateau de<br>recherche                                            | marché | mesurés            | d'otolithes<br>prélevés |
| IIIa         | 2 <sup>ème</sup> trim. | -                                                                 | -      | 36                 | -                       |
|              | 4 <sup>ème</sup> trim. | -                                                                 | -      | 130                | -                       |
| IV           | 1 <sup>er</sup> trim.  | 6                                                                 | 11     | 2 421              | 833                     |
|              | 2 <sup>ème</sup> trim. | -                                                                 | 11     | 3 638              | 546                     |
|              | 3 <sup>ème</sup> trim. | -                                                                 | 10     | 2 829              | 497                     |
|              | 4 <sup>ème</sup> trim. | -                                                                 | 10     | 3 868              | 529                     |
| Total annuel |                        | 6                                                                 | 42     | 12 922             | 2 405                   |

Pologne

( W.Cięglewicz, J.Janusz )

SAMPLING DATA FOR COD, HADDOCK, SAITHE, WHITING,  
GREENLAND HALIBUT IN 1977

| Area                         | Season<br>Quarters | No. of Samples      |                       | No. of Fish |       |
|------------------------------|--------------------|---------------------|-----------------------|-------------|-------|
|                              |                    | Research<br>vessels | Commercial<br>vessels | Measured    | Aged  |
| <u>COD</u>                   |                    |                     |                       |             |       |
| IIb                          | 3                  | -                   | 7                     | 6 243       | 416   |
| <u>HADDOCK</u>               |                    |                     |                       |             |       |
| IV                           | 1                  | -                   | 7                     | 1 670       | 700   |
|                              | 2                  | -                   | 7                     | 2 134       | 796   |
| <u>SAITHE</u>                |                    |                     |                       |             |       |
| IV                           | 1                  | -                   | 11                    | 5 000       | 1 100 |
|                              | 2                  | -                   | 16                    | 6 000       | 1 600 |
| <u>WHITING</u>               |                    |                     |                       |             |       |
| IV                           | 1                  | -                   | 6                     | 1 767       | 600   |
| <u>GREENLAND<br/>HALIBUT</u> |                    |                     |                       |             |       |
| IIa                          | 3                  | -                   | 1                     | 221         | 100   |
| IIb                          | 3                  | -                   | 4                     | 3 353       | 388   |

Portugal

(M. Lima Dias)

Pendant l'année 1977, notre Instituto nacional de Investigacao das Pescas a poursuivi les études sur les échantillons de débarquement de merlu, débarqués par des bateaux commerciaux (chalutiers et artisans) sur la côte portugaise.

Les données enregistrées sont portées dans le tableau ci-après.

Echantillonnage de merlu (*Merluccius merluccius* L.) dans la côte portugaise (région IX du CIEM) pendant l'année 1977 (bateaux de pêche industrielle (chalutiers) et artisans (ligne et hameçon et filets soulevés).

| Région<br>CIEM | Saison                     | N° des Échantillons    |        | N° des Poissons |                       |                           |
|----------------|----------------------------|------------------------|--------|-----------------|-----------------------|---------------------------|
|                |                            | Bateau de<br>recherche | Marché | Mesuré          | dont âge<br>déterminé | Classe<br>suivant<br>race |
| IX             | 1 <sup>er</sup> trimestre  | -                      | 22     | 2056            | -                     | -                         |
| IX             | 2 <sup>ème</sup> trimestre | -                      | 26     | 2789            | -                     | -                         |
| IX             | 3 <sup>ème</sup> trimestre | -                      | 15     | 779             | -                     | -                         |
| IX             | 4 <sup>ème</sup> trimestre | -                      | 39     | 3195            | -                     | -                         |
|                |                            | -                      | 102    | 8819            | -                     | -                         |

Royaume-Uni

(England and Wales)

(A. C. Burd)

Sampling. The areas where research vessel samples have been taken are indicated. Samples include material for ICES Young Fish Trawl Survey, other recruitment studies, and biological investigations.

COD

| Area                           | No of samples    |                | No of fish |       |               |
|--------------------------------|------------------|----------------|------------|-------|---------------|
|                                | Research Vessels | Market Samples | Measured   | Aged  | Racial Invest |
| Arctic 101 + 102 + 113         |                  | 254            | 42 864     | 2 143 |               |
| Iceland 111                    |                  | 1              | 89         | -     |               |
| Greenland 114                  |                  | 18             | 2 487      | 299   |               |
| Faroe 105                      |                  | 18             | 2 674      | 615   |               |
| North Sea 104                  | +                | 956            | 117 923    | 6 558 |               |
| Westerly 106A                  |                  | 54             | 8 823      | 695   |               |
| Irish Sea 107A                 | +                | 107            | 15 927     | 2 172 |               |
| Bristol Channel 107F           | +                | 7              | 434        | 77    |               |
| S E Ireland 107G               |                  | 3              | 444        | 101   |               |
| Rockall 106B                   |                  | 4              | 417        | 92    |               |
| E English Channel 107D,E       | +                | 54             | 6 460      | 125   |               |
| FREEZER Arctic 101 + 102 + 113 |                  | 62             | 30 572     | -     |               |
| Rockall 106B                   |                  | 1              | 240        | -     |               |

HADDOCK

| Area                           | No of samples    |                | No of fish |       |               |
|--------------------------------|------------------|----------------|------------|-------|---------------|
|                                | Research Vessels | Market Samples | Measured   | Aged  | Racial Invest |
| Arctic 101+ 102 + 113          |                  | 148            | 21 385     | 1 193 |               |
| Iceland 111                    |                  | 1              | 124        | -     |               |
| Faroe 105                      |                  | 15             | 2 640      | 40    |               |
| North Sea 104                  | +                | 471            | 57 906     | 2 630 |               |
| Westerly 106A                  |                  | 50             | 6 957      | 764   |               |
| Irish Sea 107A                 | +                | 15             | 1 209      | 114   |               |
| Bristol Channel 107F           |                  | 1              | 81         | -     |               |
| S E Ireland 107G               |                  | 1              | 82         | -     |               |
| Rockall 106B                   |                  | 24             | 2 721      | 329   |               |
| E Greenland 114                |                  | 2              | 206        | -     |               |
| FREEZER Arctic 101 + 102 + 113 |                  | 16             | 2 296      | -     |               |

SAITHE

| Area                           | No of samples    |                | No of fish |      |               |
|--------------------------------|------------------|----------------|------------|------|---------------|
|                                | Research Vessels | Market Samples | Measured   | Aged | Racial Invest |
| Arctic 101 + 102 + 113         |                  | 45             | 3 891      | 620  |               |
| Faroe 105                      | +                | 18             | 1 492      | 367  |               |
| North Sea 104                  | +                | 71             | 7 121      | 781  |               |
| Westerly 106A                  | +                | 71             | 8 167      | 927  |               |
| Rockall 106B                   |                  | 2              | 167        | 12   |               |
| FREEZER Arctic 101 + 102 + 113 |                  | 7              | 630        | -    |               |
| North Sea 104                  |                  | 1              | 77         | -    |               |



PLAICE

| Area                   | No of Samples    |                | No of fish |       |               |
|------------------------|------------------|----------------|------------|-------|---------------|
|                        | Research Vessels | Market Samples | Measured   | Aged  | Racial Invest |
| Arctic 101 + 102 + 113 |                  | 4              | 785        | -     |               |
| North Sea 104          | +                | 329            | 58 072     | 4 163 |               |
| Irish Sea 107A         | +                | 121            | 21 379     | 1 584 |               |
| Bristol Channel 107F   | +                | 47             | 8 395      | 276   |               |
| S E Ireland 107G       |                  | 8              | 1 725      | 95    |               |
| E English Channel 107D |                  | 72             | 5 125      | 648   |               |
| W English Channel 107E |                  | 156            | 11 179     | 1 706 |               |

WHITING

| Area                   | No of samples    |                | No of fish |       |               |
|------------------------|------------------|----------------|------------|-------|---------------|
|                        | Research Vessels | Market Samples | Measured   | Aged  | Racial Invest |
| North Sea 104          | +                | 513            | 39 513     | 1 980 |               |
| Irish Sea 107A         | +                | 133            | 16 754     | 1 492 |               |
| Bristol Channel 107F   | +                | 11             | 1 479      | 100   |               |
| S E Ireland 107G       |                  | 5              | 533        | 25    |               |
| Westerly 106A          |                  | 3              | 258        | 27    |               |
| E English Channel 107D |                  | 27             | 3 438      | -     |               |
| W English Channel 107E |                  | 103            | 10 889     | 537   |               |

SOLE

| Area                   | No of samples    |                | No of fish |      |               |
|------------------------|------------------|----------------|------------|------|---------------|
|                        | Research Vessels | Market Samples | Measured   | Aged | Racial Invest |
| North Sea 104          | +                | 65             | 12 078     | 201  |               |
| Irish Sea 107A         | +                | 62             | 11 009     | 417  |               |
| Bristol Channel 107F   | +                | 38             | 4 681      | 108  |               |
| S E Ireland 107G       |                  | 3              | 692        | 54   |               |
| Westerly 106A          |                  | 1              | 255        | -    |               |
| E English Channel 107D |                  | 78             | 5 399      | 554  |               |
| W English Channel 107E |                  | 161            | 12 292     | 828  |               |

TURBOT

| Area          | No of samples    |                | No of fish |      |               |
|---------------|------------------|----------------|------------|------|---------------|
|               | Research Vessels | Market Samples | Measured   | Aged | Racial Invest |
| North Sea 104 |                  | 2              | 140        | -    |               |

# HAKE

| Area                 | No of samples    |                | No of fish |      |               |
|----------------------|------------------|----------------|------------|------|---------------|
|                      | Research Vessels | Market Samples | Measured   | Aged | Racial Invest |
| North Sea 104        |                  | 14             | 1 851      | -    |               |
| Irish Sea 107A       |                  | 42             | 5 928      | -    |               |
| Westerly 106A        |                  | 53             | 7 977      | -    |               |
| Bristol Channel 107F |                  | 9              | 1 849      | -    |               |
| S E Ireland 107G     |                  | 4              | 749        | -    |               |

# SPURDOG

| Area          | No of samples    |                | No of fish |      |               |
|---------------|------------------|----------------|------------|------|---------------|
|               | Research Vessels | Market Samples | Measured   | Aged | Racial Invest |
| North Sea 104 |                  | 112            | 9 537      | -    |               |
| Westerly 106A |                  | 53             | 5 046      | -    |               |

# SKATES AND RAYS

| Area                 | No of samples    |                | No of fish |      |               |
|----------------------|------------------|----------------|------------|------|---------------|
|                      | Research Vessels | Market Samples | Measured   | Aged | Racial Invest |
| Westerly 106A        |                  | 24             | 1 922      | -    |               |
| Irish Sea 107A       | +                | 108            | 13 079     | -    |               |
| Bristol Channel 107F | +                | 21             | 3 533      | -    |               |
| S E Ireland 107G     |                  | 9              | 1 476      | -    |               |
| North Sea 104        |                  | 43             | 2 396      | -    |               |

# LEMON SOLE

| Area                   | No of samples    |                | No of fish |      |               |
|------------------------|------------------|----------------|------------|------|---------------|
|                        | Research Vessels | Market Samples | Measured   | Aged | Racial Invest |
| North Sea 104          | +                |                |            |      |               |
| W English Channel 107E |                  | 152            | 11 859     | 480  |               |
| Britol Channel 107F    |                  | 28             | 2 623      | -    |               |
| Irish Sea 107A         | +                |                |            |      |               |

Release of English tagged fish in ICES areas during 1977

| Species      | Region |       |       |      |      |       |      | Total |
|--------------|--------|-------|-------|------|------|-------|------|-------|
|              | 104A   | 104B  | 104C  | 107D | 107E | 107A  | 106A |       |
| Cod          | 121    | 1 825 | 1 300 | 521  | 574  | 292   | 132  | 4 765 |
| Plaice       | -      | -     | 544   | -    | -    | -     | -    | 544   |
| Sole         | -      | 2     | 956   | -    | -    | 392   | -    | 1 350 |
| Whiting      | -      | 1 169 | 697   | -    | -    | -     | -    | 1 866 |
| Haddock      | -      | 11    | -     | -    | -    | -     | -    | 11    |
| Coalfish     | 7      | -     | 30    | -    | -    | -     | 67   | 104   |
| Spurdog fish | 15     | 90    | -     | -    | -    | -     | -    | 105   |
| Turbot       | -      | -     | -     | -    | -    | 645   | -    | 645   |
| TOTAL        | 143    | 3 097 | 3 527 | 521  | 574  | 1 329 | 199  | 9 390 |

(Scotland)

(R. Jones)

1. Research vessel activities.

FRV "Explorer" participated in the 1977 International Young Herring Survey in feb-mar and also carried out surveys of pre-recruit cod, haddock and whiting in the North Sea (november) and at Faroe (june-july).

FRV "Clupea" carried out a pre-recruit gadoid survey off the west coast of Scotland during november and december while FRV "Mara" carried out a pre-recruit plaice surveys off the east coast of Scotland in november.

FRV "Explorer" participated in an internationally co-ordinated North Sea survey of 0 group gadoids during the pelagic phase of their life history in june and july while FRV "Scotia" carried out a similar survey in october.

Numbers of fish measured and aged are shown in table 1.

2. Routine monitoring of demersal fish landings.

Landings of cod, haddock, whiting, saithe, plaice, lemon sole and megrim were sampled to obtain size and length data for all areas fished by Scottish seiners, trawlers, light trawlers and nephrops trawlers. Length data were also collected for landings of hake from the Clyde.

Numbers of fish measured and aged are shown in table 1.

3. Measurement of discarding rates.

Forty-five trips were made on Scottish commercial fishing vessels to determine the numbers of haddock and whiting discarded at each age. Some length frequency data were also collected for other species.

4. Sandeel and pout sampling.

Sandeels were more comprehensively sampled in 1977 than in previous years. 40 samples, all from the Shetland area were analysed, 382 fish being measured, weighed and aged, and 10 725 fish measured. Owing to an increase in the sandeel fishery at Shetland, the Norway pout fishery was smaller than in 1976 and fewer samples were analysed.

### 5. Tagging experiments.

Two commercial fishing vessels were chartered during the year to carry out tagging operations. In June, FV "Scotia" worked in the North Minch where 177 haddock, 876 plaice, 37 whiting, 66 cod and 69 lemon sole were released. FV "Jenmar" worked in the South Minch in September and released 657 haddock, 216 plaice, 257 cod and 113 lemon sole.

FRV "Mara" carried out a tagging experiment in the Moray Firth in Feb. during which 1 867 plaice and 80 lemon sole were released.

### 6. Aquarium experiments.

Aquarium experiments on female haddock indicated that those maintained on low ration ( $\leq 5K$  cal/day) spawned less frequently and produced fewer eggs than well-fed controls.

### 7. Field studies in west coast Sea Loch.

Experiments to examine the natural movements and migrations of fish in west coast Sea Lochs have continued, and have confirmed that juvenile cod occupy a home range of limited extent during their first two years of life. Studies have also been made of the stomach contents of these fish and in particular the intake of a particular prey item, the hermit crab *Pagurus bernhardus*, has been examined intensively.

Further studies have been performed on the sensory capacities of cod. In particular, visual contrast perception, directional hearing in the vertical plane, and the sensitivity of fish to dissolved amino acids have been examined.

TABLE 1 Number of Fish Measured and Aged in 1977 (1 : market sampling data ; 2 : research vessel data).

| Area                   | Cod<br>Meas Aged        | Haddock<br>Meas Aged       | Whiting<br>Meas Aged      | Saithe<br>Meas Aged | Hake<br>Meas Aged |
|------------------------|-------------------------|----------------------------|---------------------------|---------------------|-------------------|
| North Sea<br>1)<br>2)  | 45115 12983<br>1268 420 | 145137 16297<br>16604 2422 | 89519 14034<br>43794 1706 | 12151 4372<br>79 -  | - -<br>248 -      |
| West Coast<br>1)<br>2) | 7009 2942<br>73 -       | 39100 6914<br>2399 -       | 37733 6184<br>5768 -      | 10134 2299<br>55 -  | 3605 -<br>182 -   |
| Faroe 1)<br>2)         | 5660 -<br>1439 -        | 13945 2818<br>15691 -      | 4108 1585<br>369 -        | 3791 2412<br>615 -  | - -<br>- -        |
| Iceland<br>1)<br>2)    | - -<br>- -              | - -<br>- -                 | - -<br>- -                | - -<br>- -          | - -<br>- -        |
| White Sea<br>1)<br>2)  | 2741 -<br>- -           | 1150 839<br>- -            | - -<br>- -                | - -<br>- -          | - -<br>- -        |

| Area       | T.esmarkii<br>Meas Aged | Sandeel<br>Meas Aged | Plaice<br>Meas Aged | L. Sole<br>Meas Aged | Megrim<br>Meas Aged |
|------------|-------------------------|----------------------|---------------------|----------------------|---------------------|
| North Sea  |                         |                      |                     |                      |                     |
| 1)         | 2544 437                | 10725 882            | 44401 -             | 53985 -              | 11836 -             |
| 2)         | 5149 304                | 642 195              | 683 -               | 649 -                | 86 -                |
| West Coast |                         |                      |                     |                      |                     |
| 1)         | 204 61                  | - -                  | 15188 -             | 7564 -               | 334 -               |
| 2)         | 1450 117                | 3359 451             | 148 -               | 154 -                | 114 -               |
| Faroe      |                         |                      |                     |                      |                     |
| 1)         | - -                     | - -                  | 7362 -              | 15776 -              | - -                 |
| 2)         | 7069 375                | - -                  | 225 -               | 1448 -               | 9 -                 |

Suède

(O. Hagström)

Sampling Data COD

| Area      | Season | Type of fish | No. of Samples  |        | No. of Fish |      |
|-----------|--------|--------------|-----------------|--------|-------------|------|
|           |        |              | Research Vessel | Market | Measured    | Aged |
| Kattegat  | II     | Imm., ad.    | 11              |        | 1929        | 389  |
|           | III-IV | Ad.          | 18              |        | 2728        | 653  |
|           | III    | "            |                 |        | 1893        |      |
|           | V      | "            |                 |        | 1187        |      |
|           | VII    | "            |                 |        | 1020        | 250  |
|           | VIII-X | "            | 15              |        | 2575        | 654  |
|           | IX     | "            |                 |        | 813         |      |
|           | XI     | "            |                 |        | 1058        | 250  |
|           |        |              |                 |        |             |      |
| Skagerrak | II     | Ad.          |                 |        | 803         |      |
|           | II     | Imm., ad.    | 11              |        | 163         | 122  |
|           | III-IV | Ad.          | 13              |        | 1197        | 383  |
|           | IV     | "            |                 |        | 263         |      |
|           | IV     | Imm., ad.    | 16              |        | 2133        | 387  |
|           | VI     | Ad.          |                 |        | 1007        |      |
|           | VIII-X | "            | 13              |        | 503         | 324  |
|           | X      | "            |                 |        | 282         |      |
|           | XI     | "            |                 |        | 457         |      |

- 54 -  
Research Vessel Surveys 1977

| Area                | Season | Objectives                      |
|---------------------|--------|---------------------------------|
| Kattegat, Skagerrak | II     | Investigation on young gadoides |
| "                   | III-IV | Investigation on gadoides       |
| "                   | IV     | "                               |
| "                   | VIII-X | "                               |

Sampling Data WHITING

| Area      | Season | Type of fish | No. of Samples  |        | No. of Fish |      |
|-----------|--------|--------------|-----------------|--------|-------------|------|
|           |        |              | Research Vessel | Market | Measured    | Aged |
| Kattegat  | II     | Imm., ad.    | 10              |        | 1309        | 138  |
|           | III-IV | Ad.          | 8               |        | 682         | 253  |
|           | III    | "            |                 |        | 734         |      |
|           | V      | "            |                 |        | 403         |      |
|           | VIII-X | "            | 6               |        | 709         | 159  |
|           | IX     | "            |                 |        | 402         |      |
|           | XI     | "            |                 |        | 337         |      |
| Skagerrak | II     | Imm., ad.    | 11              |        | 1105        | 199  |
|           | III-IV | Ad.          | 8               |        | 650         | 183  |
|           | IV     | Imm., ad.    | 13              |        | 792         | 160  |
|           | VIII-X | Ad.          | 2               |        | 256         | 63   |

Sampling Data HADDOCK

| Area      | Season | Type of fish | No. of Samples  |        | No. of Fish |      |
|-----------|--------|--------------|-----------------|--------|-------------|------|
|           |        |              | Research Vessel | Market | Measured    | Aged |
| Kattegat  | II     | Imm., ad.    | 7               |        | 118         | 57   |
|           | III-IV | Ad.          | 3               |        | 171         | 81   |
|           | III    | "            |                 |        | 29          |      |
|           | V      | "            |                 |        | 43          |      |
|           | VIII-X | "            |                 |        |             |      |
|           | XI     | "            |                 |        | 239         |      |
|           |        |              |                 |        |             |      |
| Skagerrak | II     | Ad.          |                 |        | 822         |      |
|           | II     | Imm., ad.    | 11              |        | 449         | 223  |
|           | III-IV | Ad.          | 8               |        | 371         | 131  |
|           | IV     | "            |                 |        | 347         |      |
|           | IV     | Imm., ad.    | 10              |        | 194         | 72   |
|           | VI     | Ad.          |                 |        | 106         |      |
|           | VIII-X | "            | 4               |        | 312         | 96   |
|           | XI     | "            |                 |        | 293         |      |

U R S S  
(S.G. Fedorov)

I. Data collected in the Barents, Norwegian, North and Greenland seas.

In 1977, as in previous years, data were collected to characterize the abundance, age-length composition and distribution of redfish, cod, haddock, saithe, Greenland halibut and other demersal fishes observed in the ICES zone. Figures in tables 1-8 show the volume of data collected by areas. Samples were collected from boards the research and scouting vessels ; no racial investigations were performed.

Investigations towards refining the assessment of the state of main commercial fishes were continued both by means of the young fish determination and estimates of absolute abundance. The survival conditions of young fishes at different stages of development were studied ; ichthyoplankton was gathered and analysed ; fisheries forecasts for different terms were compiled ; the forecasting technique was improved.

Sampling data for cod

Table 1

| Area                             | Season | No. of samples | No. of fish |      |
|----------------------------------|--------|----------------|-------------|------|
|                                  |        |                | Measured    | Aged |
| the Barents Sea                  | I      | 12             | 97000       | 3189 |
|                                  | II     | 18             | 78307       | 4187 |
|                                  | III    | 16             | 62854       | 4154 |
|                                  | IV     | 9              | 46506       | 3251 |
| the northwestern Barents Sea     | I      | 6              | 11695       | 1548 |
|                                  | II     | 4              | 47384       | 1596 |
|                                  | III    | 6              | 15578       | 1894 |
|                                  | IV     | 3              | 6858        | 838  |
| the northwestern coast of Norway | I      | 6              | 2875        | 747  |
|                                  | II     | 9              | 2039        | 1226 |
|                                  | III    | -              | -           | -    |
|                                  | IV     | 1              | 802         | 304  |
| East Greenland                   | I      | -              | 547         | -    |
|                                  | II     | -              | -           | -    |
|                                  | III    | -              | -           | -    |
|                                  | IV     | -              | -           | -    |

Sampling data for haddock

Table 2

| Area                             | Season | No. of samples | No. of fish |      |
|----------------------------------|--------|----------------|-------------|------|
|                                  |        |                | Measured    | Aged |
| the Barents Sea                  | I      | 7              | 47548       | 1599 |
|                                  | II     | 10             | 21109       | 2025 |
|                                  | III    | 12             | 36627       | 2036 |
|                                  | IV     | 7              | 33619       | 2209 |
| the northwestern Barents Sea     | I      | -              | 155         | -    |
|                                  | II     | -              | 434         | -    |
|                                  | III    | 3              | 227         | 24   |
|                                  | IV     | -              | 416         | -    |
| the northwestern coast of Norway | I      | 14             | 1676        | 1589 |
|                                  | II     | 9              | 839         | 831  |
|                                  | III    | -              | -           | -    |
|                                  | IV     | -              | 215         | -    |
| East Greenland                   | I      | -              | 2           | -    |
|                                  | II     | -              | -           | -    |
|                                  | III    | -              | -           | -    |
|                                  | IV     | -              | -           | -    |

Sampling data for redfish

Table 3

| Area                             | Season | No. of samples | No. of fish |      |
|----------------------------------|--------|----------------|-------------|------|
|                                  |        |                | Measured    | Aged |
| the Barents Sea                  | I      | -              | 27938       | -    |
|                                  | II     | 2              | 5631        | -    |
|                                  | III    | 3              | 5202        | 300  |
|                                  | IV     | -              | 4976        | -    |
| the northwestern Barents Sea     | I      | 3              | 12280       | 571  |
|                                  | II     | 6              | 18288       | 904  |
|                                  | III    | 15             | 44388       | -    |
|                                  | IV     | 3              | 15130       | -    |
| the northwestern coast of Norway | I      | 2              | 6744        | 300  |
|                                  | II     | 3              | 10533       | -    |
|                                  | III    | -              | -           | -    |
|                                  | IV     | 2              | 2286        | -    |
| East Greenland                   | I      | 7              | 24636       | -    |
|                                  | II     | -              | -           | -    |
|                                  | III    | -              | -           | -    |
|                                  | IV     | -              | -           | -    |



Sampling data for Greenland halibut

Table 4

| Area                             | Season | No. of samples | No. of fish |      |
|----------------------------------|--------|----------------|-------------|------|
|                                  |        |                | Measured    | Aged |
| the Barents Sea                  | I      | -              | 1064        | -    |
|                                  | II     | -              | 221         | -    |
|                                  | III    | 1              | 253         | 16   |
|                                  | IV     | -              | 322         | -    |
| the northwestern Barents Sea     | I      | 1              | 2442        | 300  |
|                                  | II     | 2              | 1603        | 601  |
|                                  | III    | 1              | 1375        | 242  |
|                                  | IV     | 1              | 3567        | 286  |
| the northwestern coast of Norway | I      | -              | -           | -    |
|                                  | II     | -              | 11          | -    |
|                                  | III    | -              | -           | -    |
|                                  | IV     | -              | -           | -    |
| East Greenland                   | I      | -              | 50          | -    |
|                                  | II     | -              | -           | -    |
|                                  | III    | -              | -           | -    |
|                                  | IV     | -              | -           | -    |

Sampling data for saithe

Table 5

| Area                             | Season | No. of samples | No. of fish |      |
|----------------------------------|--------|----------------|-------------|------|
|                                  |        |                | measured    | aged |
| the Barents Sea                  | I      | -              | 47          | -    |
|                                  | II     | -              | 15          | 1    |
|                                  | III    | -              | 30          | -    |
|                                  | IV     | -              | 30          | -    |
| the northwestern Barents Sea     | I      | -              | 4           | 1    |
|                                  | II     | -              | 19          | -    |
|                                  | III    | -              | 12          | -    |
|                                  | IV     | -              | -           | -    |
| the northwestern coast of Norway | I      | 3              | 2279        | 407  |
|                                  | II     | 7              | 575         | 423  |
|                                  | III    | -              | -           | -    |
|                                  | IV     | 1              | 301         | 87   |
| East Greenland                   | I      | -              | -           | -    |
|                                  | II     | -              | -           | -    |
|                                  | III    | -              | -           | -    |
|                                  | IV     | -              | -           | -    |

Sampling data for long rough dab

Table 6

| Area                             | Season | No. of samples | No. of fish |      |
|----------------------------------|--------|----------------|-------------|------|
|                                  |        |                | measured    | aged |
| the Barents Sea                  | I      | -              | 7878        | -    |
|                                  | II     | 1              | 13089       | -    |
|                                  | III    | 4              | 20206       | -    |
|                                  | IV     | 1              | 12853       | -    |
| the northwestern Barents Sea     | I      | -              | -           | -    |
|                                  | II     | 1              | -           | -    |
|                                  | III    | 3              | -           | -    |
|                                  | IV     | 3              | -           | -    |
| the northwestern coast of Norway | I      | -              | -           | -    |
|                                  | II     | -              | 42          | -    |
|                                  | III    | -              | -           | -    |
|                                  | IV     | -              | -           | -    |
| East Greenland                   | I      | -              | -           | -    |
|                                  | II     | -              | -           | -    |
|                                  | III    | -              | -           | -    |
|                                  | IV     | -              | -           | -    |

Sampling data for plaice

Table 7

| Area                             | Season | No. of samples | No. of fish |      |
|----------------------------------|--------|----------------|-------------|------|
|                                  |        |                | measured    | aged |
| the Barents Sea                  | I      | 6              | 365         | 283  |
|                                  | II     | 4              | 1480        | 603  |
|                                  | III    | 7              | 6377        | 1314 |
|                                  | IV     | -              | 3072        | -    |
| the northwestern Barents Sea     | I      | -              | -           | -    |
|                                  | II     | -              | 2571        | -    |
|                                  | III    | -              | 6686        | -    |
|                                  | IV     | -              | 11404       | -    |
| the northwestern coast of Norway | I      | -              | -           | -    |
|                                  | II     | -              | -           | -    |
|                                  | III    | -              | -           | -    |
|                                  | IV     | -              | -           | -    |
| East Greenland                   | I      | -              | -           | -    |
|                                  | II     | -              | -           | -    |
|                                  | III    | -              | -           | -    |
|                                  | IV     | -              | -           | -    |

Sampling data for catfish

Table 8

| Area                             | Season | No. of samples | No. of fish |      |
|----------------------------------|--------|----------------|-------------|------|
|                                  |        |                | measured    | aged |
| the Barents Sea                  | I      | 3              | 3292        | 97   |
|                                  | II     | 1              | 1181        | 8    |
|                                  | III    | 4              | 1848        | 178  |
|                                  | IV     | 5              | 2113        | 64   |
| the northwestern Barents Sea     | I      | -              | 456         | -    |
|                                  | II     | -              | 153         | -    |
|                                  | III    | 3              | 2413        | 36   |
|                                  | IV     | -              | 1440        | -    |
| the northwestern coast of Norway | I      | -              | 33          | -    |
|                                  | II     | -              | 30          | -    |
|                                  | III    | -              | -           | -    |
|                                  | IV     | -              | 31          | -    |
| East Greenland                   | I      | -              | 10          | -    |
|                                  | II     | -              | -           | -    |
|                                  | III    | -              | -           | -    |
|                                  | IV     | -              | -           | -    |

In 1977, the studies were continued in the North Sea on the abundance dynamics and on the state of the gadoid stocks.

The material on the gadoids was collected during the young herring trawling survey in January-February under the ICES Programme.

The composition of commercial catches was studied. The volume of biological material is given in the Table below.

| Species | N° of fish measured | age determination |
|---------|---------------------|-------------------|
| Haddock | 49 295              | 1534              |
| Whiting | 28 900              | 750               |
| Saithe  | 17 800              | 650               |

## II. Central east Atlantic.

In 1977 seven cruises were made to various regions of the Central east Atlantic.

Quantitative trawling surveys were conducted in order to determine the state of the fishery resources in the Central-east Atlantic. In addition, the routine oceanographic observations were made and the data for the biological analysis of the main fish species collected.

A total of 1 250 haulings were made and 1 200 stations occupied.

The material collected on the main fish species was as follows :

| Species                      | N° of fish<br>measured | Biological<br>analysis | Age determination |
|------------------------------|------------------------|------------------------|-------------------|
| <i>Pagellus couplei</i>      | 2 000                  | 800                    |                   |
| <i>Dentex macrophthalmus</i> | 1 700                  | 500                    |                   |
| <i>Dentex congensis</i>      | 4 000                  | 900                    | 1 250             |
| <i>Dentex angolensis</i>     | 1 200                  | 1 100                  |                   |
| <i>Dentex polli</i>          | 4 500                  | 150                    |                   |
| <i>Pagellus acarne</i>       | 900                    | 400                    |                   |
| <i>Pomadasyidae</i>          | 11 000                 | 454                    | 300               |

The minimum abundance and biomass of 36 fish species was determined. The sparids, *Dentex macrophthalmus*, *D. angolensis*, *Pagellus couplei*, as well as *Pomadasyidae* and *Sciaenidae* were predominant demersal fish species.

#### U S A

(M. P. Sissenwine)

A more complete report on USA demersal fish research is contained in the USA Research Report to the Annual Meeting of ICNAF, June 1978.

During 1977, the status of stocks of more than twenty species or species groups exploited along the Atlantic coast of the USA north of cape Hatteras was assessed. The demersal (at least partially demersal) fish stocks that were assessed are cod of the (1) gulf of Maine and (2) Georges Bank - southern New England area ; haddock of Georges Bank ; redfish of the gulf of Maine - George Bank area ; silver hake of (1) the gulf of Maine, (2) Georges Bank and (3) southern New England - mid-Atlantic area ; red hake of (1) Georges Bank and (2) southern New England - mid-Atlantic area ; pollock of Georges Bank - gulf of Maine Nova Scotia area ; hellowtail flounder of (1) Georges Bank, (2) the cape Cod area (3) southern New England and (4) the mid-Atlantic area ; flounder except yellowtail for the USA Atlantic coast north of cape Hatteras ; scup, weakfish, and other finfish (excluding species already considered, menhaden and large pelagics) for the USA Atlantic coast north of cape Hatteras. Stock assessments were based on length samples of commercial landings, research vessel trawl surveys, and age determinations of both commercial and research vessel catches. Commercial sampling bottom trawl research survey and aging activity for 1977 is summarized in tables 1, 2 and 3 respectively.

The USA has continued research on the interactions of fish species. During 1977, a preliminary energy flow model of Georges Bank was formulated. Laboratory processing of about 17 000 stomachs of 17 fish species collected between 1973 and 1976 was completed. Most of these stomachs were of demersal species. Approximately 25 % of the samples are from young of the year fish. The length of the fish was recorded for each stomach. Specimen length was not recorded for stomach data collected between 1969-1972. This additional information should allow substantial improvement in our understanding of species interactions.

South of Cape Hatteras, recreational and commercial fisheries are prosecuted on the snapper-grouper species complex. Catch statistics are now being collected and research is being conducted on the life history and population dynamics of several species (black sea bass, red porgy vermilion snapper and red snapper, for example). Approximately 8 000 fish have been tagged. Resource survey cruises were conducted in 1977 and additional cruises are planned for 1978.

Marine research laboratories of individual states and universities also study demersal fish. These research programs tend to be oriented to coastal species. For example, the Division of Marine Fisheries of Massachusetts is conducting research on the movement, growth and mortality of winter flounder off the coast of Massachusetts.

Table 1      USA Commercial Landing Sampling Summary 1977

| <u>Species</u> | <u>Samples<sup>a</sup></u> |
|----------------|----------------------------|
| Cod            | 166                        |
| Haddock        | 210                        |
| Pollock        | 48                         |
| Redfish        | 103                        |
| Whiting        | 60                         |
| Sea herring    | 373                        |
| Grey sole      | 9                          |
| American dab   | 16                         |
| Sand dab       | 8                          |
| Mackerel       | 15                         |
| Sea scallops   | 94                         |
| Blackback      | 89                         |
| Squid sp       | 42                         |
| Industrial     | 115                        |
| Butterfish     | 7                          |
| Fluke          | 58                         |
| Red hake       | 2                          |
| Scup           | 10                         |
| Tilefish       | 2                          |
| Menhaden       | 4                          |
| Surf clams     | 131                        |
| Ocean quahogs  | 6                          |
| Yellowtail     | 90                         |
| Lobster        | 8                          |
| Red crab       | 4                          |
| Jonah crab     | 1                          |
| Total          | 1671                       |

a) The number of fish in each sample varies by species and market category.

Table 2. Fish Age Determinations During 1977.

| <u>Species</u> | <u>Number</u> |
|----------------|---------------|
| Redfish        | 2032          |
| Yellowtail     | 9587          |
| Mackerel       | 1089          |
| Cod            | 1824          |
| Haddock        | 4183          |
| Scallops       | 1600          |
| Pollock        | 649           |
| Goosefish      | 30            |
| Scup           | 200           |
| Fluke          | 2148          |
| Silver Hake    | 3982          |
| Blackback      | 916           |
| Sea herring    | 7728          |
| Alewives       | 1000          |
| Red hake       | 8901          |
| total 45,869   |               |

Table 3. Bottom Trawl Survey Cruises for 1977.

| Vessel                                | Date            | No. of stations | Area                             | Type of trawl                       |
|---------------------------------------|-----------------|-----------------|----------------------------------|-------------------------------------|
| DELAWARE II (USA)                     | 4 Jan - 10 Jan  | 24              | Georges Bank                     | #36 Yankee                          |
| WIECZNO (Poland)                      | 18 Feb - 26 Feb | 30              | Georges Bank                     | 90' Herring                         |
| WIECZNO (Poland)                      | 9 Mar - 15 Mar  | 28              | Gulf of Maine                    | #36 Yankee                          |
| ANTON DOHRN (FRG)                     | 11 Mar - 12 Mar | 12              | Upper Channel                    | 180' Herring                        |
| ALBATROSS IV and<br>DELAWARE II (USA) | 19 Mar - 28 May | 303             | Gulf of Maine-<br>Cape Hatteras  | #41 Yankee                          |
| GORLITZ (GDR)                         | 3 Mar- 8 Apr    | 110             | S. New England-<br>Gulf of Maine | HG 600                              |
| ALBATROSS IV and<br>DELAWARE II (USA) | 27 Jul - 31 Aug | 158             | Gulf of Maine-<br>Cape Hatteras  | #36 Yankee                          |
| SUZUKU MARU (Japan)                   | 20 Jul - 8 Aug  | 112             | Mid-Atlantic                     | Japanese bottom<br>off-bottom trawl |
| DELAWARE II (USA)                     | 26 Sep - 15 Dec | 425             | Gulf of Maine-<br>Cape Hatteras  | #36 Yankee                          |
| ARGUS (USSR)                          | 13 Nov - 25 Nov | 42              | Georges Bank                     | Hake 815                            |