

INTERNATIONAL COMMISSION FOR



THE NORTHWEST ATLANTIC FISHERIES

Document No. 12ANNUAL MEETING - JUNE 1954PORTUGUESE RESEARCH REPORT

General Statement of Research Work 1953

By José Mousinho de Figueiredo

Soon after the Third Annual Meeting of the ICNAF at New Haven, Conn. U.S.A., 1953, the author sailed on board the dory cod fishing vessel "Capitão João Vilarinho" from St. John's, Newfoundland to the fishing grounds off Greenland and started the work in co-operation with Dr. Phil. Paul M. Hansen on Dana Bank on 9 June 1953. Afterwards the author spent two weeks on board the Danish research vessel "Adolf Jensen" for training purposes, in the Greenland fjords and came back to the "Capitão João Vilarinho" where he stayed collecting material until the end of July. He also spent one week on board the hospital ship "Gil Eanes" where no biological routine work was possible, due mainly to lack of regular fishing activities.

The author feels deeply grateful for the two last weeks at sea as guest of the Royal Danish research ship "Dana", where he enjoyed the unforgettable experience to become acquainted with every kind of research work in which the scientific staff of "Dana" was engaged during the trip back to Europe. The author feels very happy when recalling the good-will he found amongst the Danish scientists, and he would like to avail himself of this opportunity to express his acknowledgement to all the Danish authorities, especially to Dr. Phil. Paul M. Hansen for all assistance and co-operation.

1 - Conversion Factor Studies (cfr. Documents 3 and 6)

Diagrams 1, 2 (see Document 6, figures 1 and 2).

During 1953, every vessel of the Portuguese cod fishing fleet was given two forms to be filled in with the weight figures of the more important parts in which the whole round fresh cod is divided through the processing work on board. Each form should be filled with the following data: (referring to a sample of 100 kg. fresh round fish).

Dates of fishing and unloading in Portugal  
 No. of fishes per 100 kg.  
 Most frequent length of the fishes  
 Weight of the heads  
 Weight of the livers  
 Weight of the roe  
 Weight of the rest of entrails  
 Weight of the anterior third of the backbone  
 Weight of the lot of split cod ready for salting  
 Quantity of salt used

Sixty-five completed forms were received at the office, but only 47 were studied because 16 of them were received too late, in 1954, and two had to be rejected from lack of accuracy. These 45 forms referred to 5,034 kg. round fresh cod, as from the sea. The numbers of forms referring to each of the three subareas studied are as follows:

Subarea 1, Davis Strait: 17 forms  
Subarea 2, Labrador Coast: 11 forms  
Subarea 3, Newfoundland Banks: 19 forms

The range of the Conversion Factor figures was found differing from area to area:

Davis Strait: 2.05 to 3.12      Labrador: 2.70 to 3.01      Newfoundland: 2.70 to 3.57

However, the modal frequencies for the Conversion Factor figures in all the three areas fall in the 2.75/2.99 group. The author recognizes that this study needs to be furthered on a wider scale for the different fishing grounds.

2 - Yield and Waste Studies on Cod (cfr. Document 4)

Diagrams 2, 3, 4, 5. (see Document 6, figure 2; Document 4, the three diagrams).

On board the dory vessel "Capitão João Vilarinho" the author weighed, measured and sexed 80 cod and carried out for each fish 12 different weighings of the different parts in which the fish is divided under the usual processing work aboard. These studies were carried out on the Fylla Bank and on the Store Hellefiske Bank, in June and July 1953. The final results, as may be seen in the diagrams, are broken down by sexes and fishing grounds, and they confirm the rougher study carried out on board the 47 fishing vessels under the author's previous schedule. In each one of these vessels a lot of 100 kg. fresh whole fish was dealt with. As a final result the author thinks that the total average waste of the fresh cod amounts to 27% against 70% of the recoverable. The respective ratio of recovery being 1.70, i.e. the ratio between the weight of the whole round fish and the weight of the bodies ready for salting. The diagrams further demonstrate the extent of agreement of results from two methods of vaying accuracy, viz. that of the weighing of the parts from each single fish and that of weighings of parts from samples of 100 kg. The author hopes that this work will be continued in the whole Portuguese cod fleet in 1954.

3 - Length Composition of Cod from Westgreenland Waters (cfr. Document 5)

Diagram 6 (see the Document 5 diagram).

On board the dory vessel "Capitão João Vilarinho", the author sampled and sexed 4,206 cod caught with dory trawl line in the waters off Greenland, in June and July 1953. On Fiskenes Bank, in early June, 267 fishes were measured and sexed in only one fishing day. The size modes fall in the 75/79 cm. group which later proved to be age-group XI. On the Fylla Bank (June and July) the sampling comprised 1,990 cod and the respective modal group was the 70/74 cm., closely followed by the 75/79 cm. group. On the Store Hellefiske Bank (July) the whole sample was of 1,949 fishes and the modal frequencies conspicuously fall on the two smaller-sized groups, 60/64 cm. and 55/59 cm., which later were found to belong to age-group VI. No sample was collected on the Lille Hellefiske Bank as the "Capitão João Vilarinho" stayed there only for just one bad fishing day.

The sex ratio was as follows:

Fiskenæs Bank:	males 53.5%
Fylla Bank:	males 52.8%
Store Hellefiske Bank:	males 46.5%

These studies, as the above mentioned, were started by Portugal in 1953 and will be continued on a wider scale in the Convention Area in 1954.

4 - Composition of Year Classes in Catches of Cod (cfr. Document 9)

Diagrams 7, 8, 9, 10 (see Document 9, diagrams 1,2,3, and Table 1)

The otoliths used in this study were collected by the author at the same time as he carried out the length measurements on the four principal fishing banks off Greenland. Only 1,067 otoliths of this collection were studied, distributed regionally as follows:

Dana Bank - 61
Fiskenæs Bank - 252
Fylla Bank - 452
Lille Hellefiske Bank - 0
Store Hellefiske Bank - 302

From north to south the final results are as follows: On the Store Hellefiske Bank age-group VI was dominant. Its mean length ranged from 58 to 61 cm., however the most frequent figures falling in the 60-64 cm. group. On the Fylla Bank the results are not so obvious as those found for the Store Hellefiske Bank. In three samples corresponding to three different days the otolith study gave a modal on age-group VI ( $\bar{x}$  = 59 cm. and 61 cm.) but in the other three samples the modal classes seem to be either the age-groups VIII or X. However, the total average from Fylla Bank shows a peak for age-group VI. Next to this age-group come age-groups VIII and X.

On the Dana and on the Fiskenæs Banks the final results were identical, notwithstanding the smallness of the sample collected on the Dana Bank. The dominant age-group was the XI followed by the VIII. The mean average length of the age-group (XI) was 78 cm. (Dana) and 79 (Fiskenæs).

The author wishes to stress that all these results are presented with reserve, as the work has the character of a preliminary survey and, accordingly, more data are needed. He hopes that the otolith collecting work will be continued in Subareas 1, 2 and 3, by trained Portuguese samplers in 1954.

5 - Recaptures of Tags

Soon after the 1953 cod fishing season was over, the recording service of recaptures of tagged cod was duly organized in Portugal. 66 cod tags were found by Portuguese fishermen in 1953 and the tags were sent to the original laboratories as follows:

Denmark - 47	Newfoundland - 4	Norway - 15
--------------	------------------	-------------

6 - Tagging

On board the hospital ship "Gil Eanes" the author tagged a few cod with ebonite disks and silver wire, just for testing the local conditions. The taggings took place on the Store Hellefiske Bank (67°38'N, 55°00'W) on 24 and 29 July 1953. Difficulties in carrying out such work were great, firstly since this ship does not fish regularly and intensively, secondly as cod, when available, could not be kept alive, and finally because the railing of this ship is so high that the fish are damaged when put back to sea.

7 - Poster

According to the recommendations of the Third Annual Meeting of ICNAF, a poster was made and distributed to all the Portuguese cod fishing vessels asking the fishermen to pay attention when working on the fishes. This poster also points out the correct procedure in measuring the fish and thus prevents the most common mistakes. It includes some basic information about the Portuguese tags and requests the fishermen to hand over tagged fishes to the skippers.

- THE END -