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Grønland I.

A. Status of the Fisheries

I. COD

1. The fisheries. The output of the cod fishery was 30,000 tons which is 5000 tons more than in 1965 but 7000 tons below the output in the best year 1962.

The reason for the increase may to some extent be ascribed to an increase in the number of the Greenland fishing boats and extension of the fishing factories. As usual the fishery was mainly carried out in inshore waters. Four fishing vessels, two on 100 tons and two on 200 tons have fished with long lines in the Davis Strait.

The two year classes 1960 (VI gr.) and 1961 (V gr.) predominated strongly in all catches, the latter especially in catches from Div. 1E and 1F.

Most of the catches consisted of small and medium sized cod between 54-58 cm (weight 1.5-1.8 kg) and 65.5-68 cm (weight 2.5-3 kg).

2. Forecast for the cod fisheries. The two rich year classes 1960 and 1961 will possibly predominate the catches also in 1967. There is, however, reason to believe that the former will be less abundant than the 1961 year class owing to it had been more exposed to heavy fishing than the younger year class 1961. In Div. 1E and 1F small 4 years old cod will be common in the catches.

II. SALMON

The output of the Greenlanders' gill net fishery for salmon in coastal waters was 1250 tons. In the Davis Strait the Faroese fishing vessel BÅKUR got about 70 tons salmon in drift nets.

The weather conditions in the fishing season, which is from September to the middle of December were very bad and hampered the fishery severely especially in November and December. The fishery stopped in fact about the middle of December.

III. Other commercial fish species and crustaceans

The catches of Greenland halibut decreased from about 3000 tons in 1965 to 2500 tons in 1966. Also the catch of wolffish decreased with about 1700 tons.

Of capelin which mainly is used for fish meal, but in dry condition also for consumption and dog food, was fished in about the same quantity as in 1965 namely 1357 tons.

The production of lumpsucker roe for caviar was 579 tons, which is nearly the double of what was produced in the previous year.

The deep sea prawn fishery continued to increase. The catch in 1966 was 5378 tons which is more than 300 tons more than in 1965.

B. Special Research Studies

I. Environmental Studies

Like in previous years ADOLF JENSEN and TORNAQ have made annual observations especially in Div. 1D. DANA carried out hydrographic work from the end of June to the beginning of August in the Irminger Sea and in the Davis Strait. The hydrographic material is treated by Mr. Frede Hermann.

1. Hydrography. Temperature observations in the entrance to the Godthåb Fjord showed a special strong inflow of warm water near the bottom in November and January. The winter 1965-66 was unusually mild and no temperatures below zero were observed in the surface. In the first months of the year the temperatures were above the normal. Later the temperatures were normal.

In the Davis Strait the temperatures were rather high in the deep water west of Fylla Bank. In July very high temperatures were measured in depths below 300 m west of the fishing banks. For instance temperatures on more than 4.5°C were found north of Store Hellefiske Bank. In Disko Bay temperatures about 3.5°C were measured on the prawn grounds. It is 1.5° above the normal temperature.

There seemed to be an inflow of cold polar water in the southern part of the area in August.

2. Other environmental studies. Plankton were collected during the whole year near Godthåb (1D). Measurements of the primary production by means of Carbon 14 were made in 1D.

From DANA plankton was taken especially in 1B, 1C, and 1D.

II. Biological studies of fish by species

1. Cod

a. Larvae. DANA fished for cod larvae with 2 m stramin net in July in Div. 1B, 1C and 1D (between 63°40'N. and 66°50'N., and from the coast to 57°00'W.). The catches were rather poor. It looks like the year class

Fig. 1.

1966 will be a rather poor year class.

b. Occurrence of small cod (age-groups I, II, and III). Cod belonging to the age-groups I and II seemed to be very rare, while cod belonging to age-group III, year class 1963 were found in rather large numbers especially in Div. 1E and 1F. In 1965 this year class seemed to be rather poor. The apparently rich occurrence of this year class in 1E and 1F seems to show that it has recently been transported by the current from East Greenland to southern West Greenland.

It is worth to mention that the studies on occurrence of cod larvae in 1963 (NORWESTLANT survey) showed very poor occurrence of cod larvae off West Greenland while rather large numbers were found off East Greenland south of Angmagssalik. Some cod larvae were also found here in April and cod eggs were found in July. Possibly the phenomenon must be explained by a long spawning period off East Greenland and maybe together with a mixing of cod eggs and larvae transported by the current from Southwest Iceland spawning grounds.

c. Age and size of cod in commercial stock. Length measurements and otolith collections were made from catches taken with different commercial gears from the Faroese trawler SKÅLABERG, DANA, ADOLF JENSEN and TORNAQ. In addition samples were collected from the Greenlanders' catches on different places along the West Greenland coast. One sample was taken in Angmagssalik Fjord in East Greenland.

Figs. 2, 3, and 4 show the age compositions in catches, with trawl Fig. 2, long line hand line and prawn trawl Fig. 3, and Greenland fishermen's catches hand line and long line Fig. 4.

In all catches except one the two rich year classes 1960 and 1961 (age groups VI and V) predominated. In 13 of the 29 samples these two year classes together amounted more than 80%. In 11 offshore samples from trawl catches the 1961 year class predominate in 9. In two of the southern catches more than 80% belong to that year class. The differences in numbers of cod belonging to these two year classes are rather small in the catches taken with long line (Fig. 3).

In the inshore catches (Fig. 4) the year class 1961 is very strong represented in Div. 1E and 1F. It was mentioned in the Danish Research Report, 1965 that there is reason to believe that the year class 1960 is of West Greenland origin while the year class 1961 originate from East Greenland waters and has been transported as fry to the West Greenland coast by the current.

In the sample from commercial catches in Angmagssalik Fjord in East Greenland the year class 1961 predominates with 59%, 1960 24.9%, 1962 10.7%, 1959 2%, 1958 2.9%, and 1957 0.5%.

The two rich year classes 1956 and 1957 which were very important to the fisheries in the period from 1961-64 were without importance. The 1956 year class was practically disappeared from the catches while the 1957 year class was about 10% in 5 samples and 20% in 1 sample. In all other samples it was nearly absent. In the last years the rich year classes disappear from the catches in a younger age than before. 10 years old cod or older which were rather common in the catches until about ten years ago are now very rare. The intensive trawl fishery fishes the cod out in an earlier age than before. A rich year class has its maximum in the catches when it is about 5 years old. When 7 and 8 years old they decrease very much, and when 9 years old they occur in so small numbers that they are without importance to the fishery.

The lengths of the cod are in the majority of the samples between 50 and 70 cm with maximum about 60 cm and weights between 1.5-3 kg.

d. Tagging experiments. Tagging experiments have been carried out with cod of different sizes in all divisions in the area except in 1A in both inshore and offshore waters. A number of 2905 cod was tagged.

431 recaptures of cod tagged in the period 1959-66 have been reported in 1966.

382 have been recaptured in West Greenland waters, 7 off East Greenland and 39 in Iceland waters. 3 recaptures are delivered without exact informations about the place of recapture, they have been recaptured either off East Greenland or in Iceland waters.

2. Atlantic Salmon

Electro fishing experiments were carried out in rivers in Div. 1F. In a river in which Norwegian salmon eggs were planted out in 1958 and 1959, 3 parr measuring 16-17 cm were caught. Scale reading showed that these small salmon were 4 years old and possibly second generation from eggs planted in 1958.

Fishing experiments with drift nets were carried out in June in the Irminger Sea off Southeast Greenland. 4 salmon were caught. It is the first salmon taken far from the coast in this area. They were smaller than the salmon caught in the Greenland fishery with gill nets in the autumn. Possibly they are salmon which have left their home rivers to go to the feeding area off West Greenland.

From medio September to medio November research work was carried out by Scottish, English, Canadian, and Danish salmon experts in Div. 1D.

728 salmon caught in gill nets were tagged in inshore waters in Div. 1D.

130 salmon tagged in foreign rivers were recaptured in inshore waters

in Greenland. The recaptures are from tagging experiemnts made in follow-
in countries: Canada 111, England 6, Scotland 11, and U.S.A. 2.

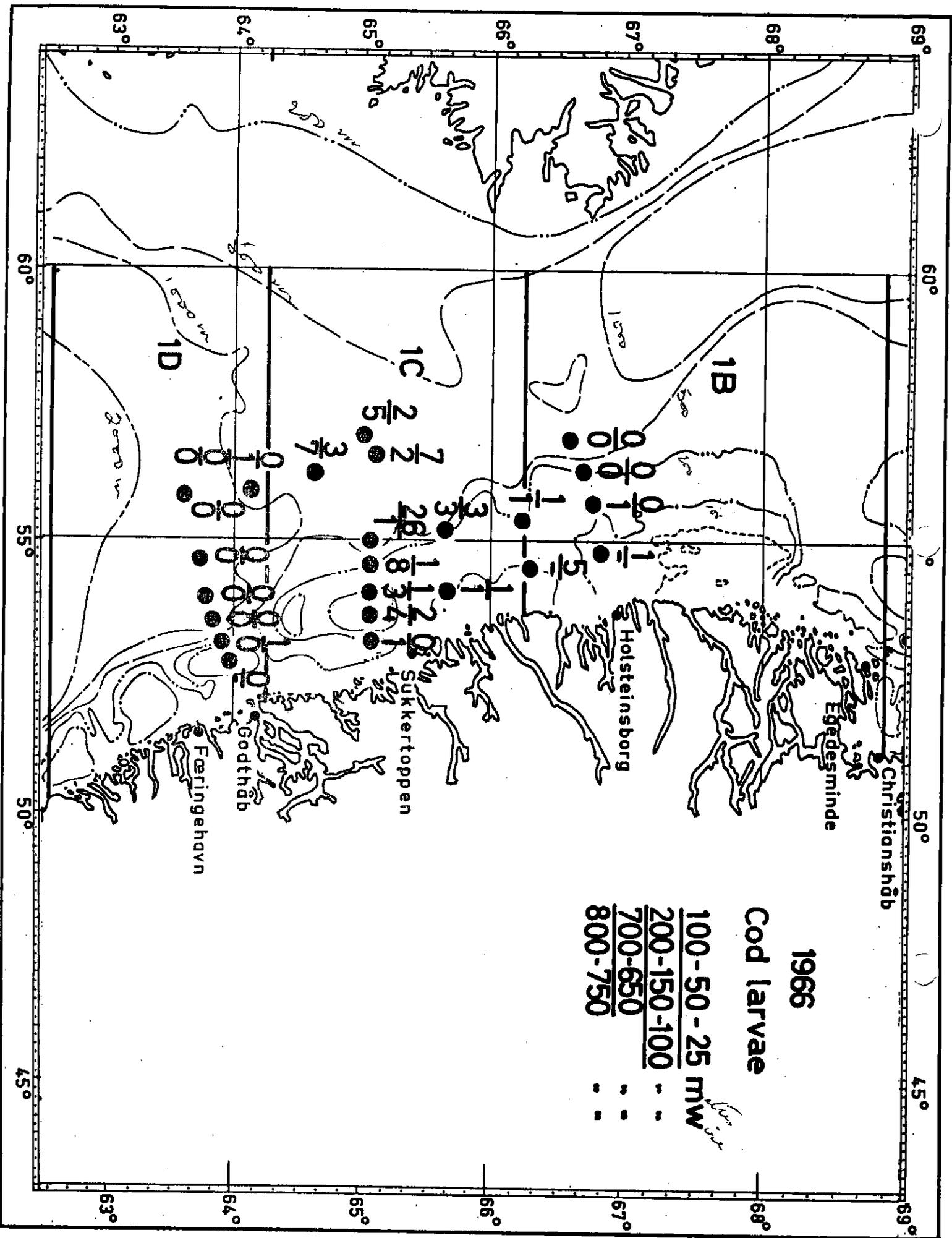
3. Other fish species. 177 redfish caught in pound nets in the Godt-
håb Fjord were tagged.

21 redfish tagged in previous years were caught in 1966. Two of these
recaptures were taken about 6 years after tagging.

Special biological work was made on capelin (*Mallotus villosus*). Samples
in frozen condition were sent to the laboratory from many fishing places in
Greenland.

4. Crustaceans. Fishing experiments with crab trawl started in 1965
were continued in 1966. On some places in Disko Bay rather good occurrences
of crabs (*Chionoecetes opilio*) were found on other places very few crabs
were found.

Some trawling experiments for prawns showed larger occurrences than
normal in Disko Bay perhaps due to the high bottom temperature in 1966.



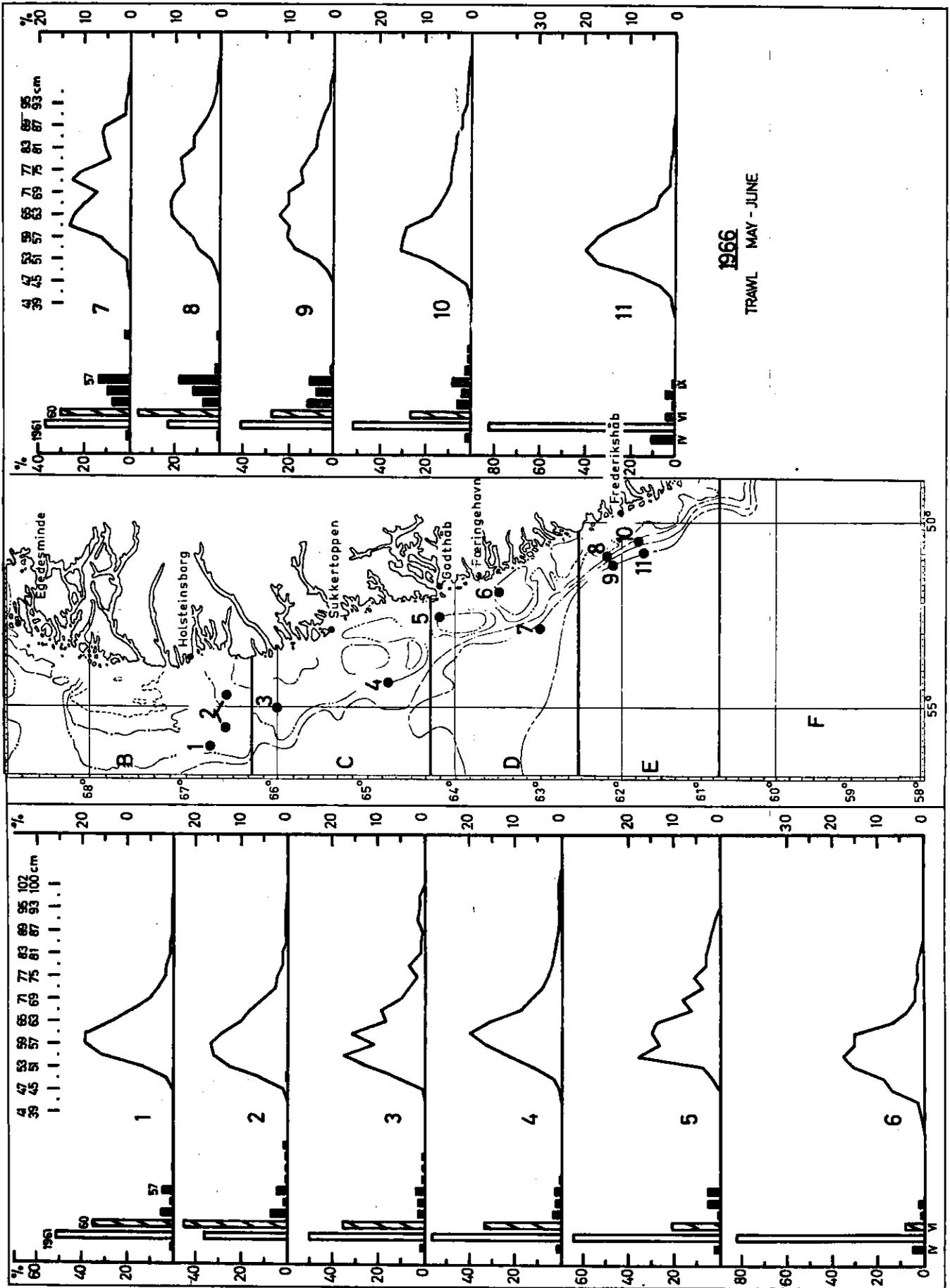
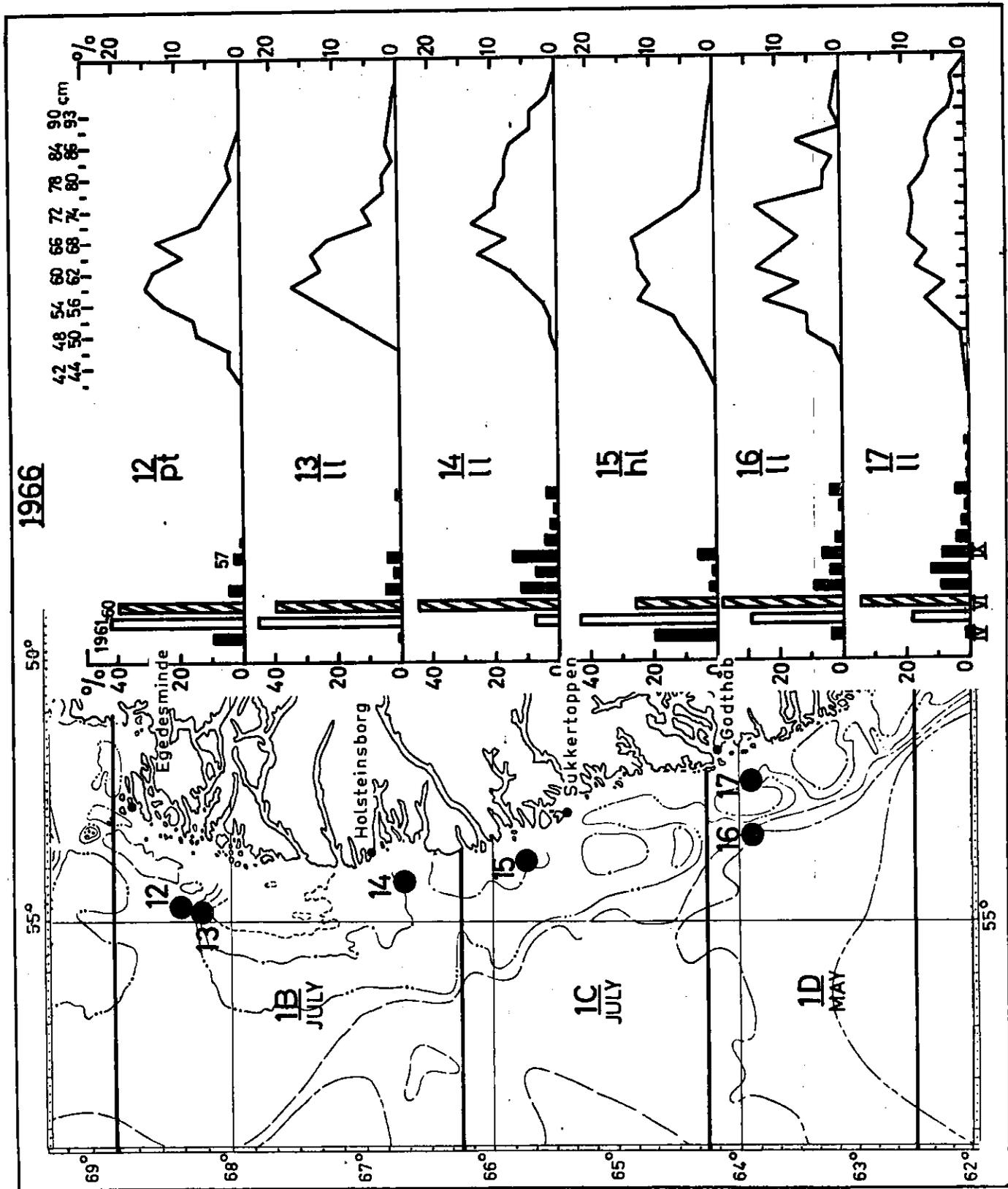


Fig. 2



1966

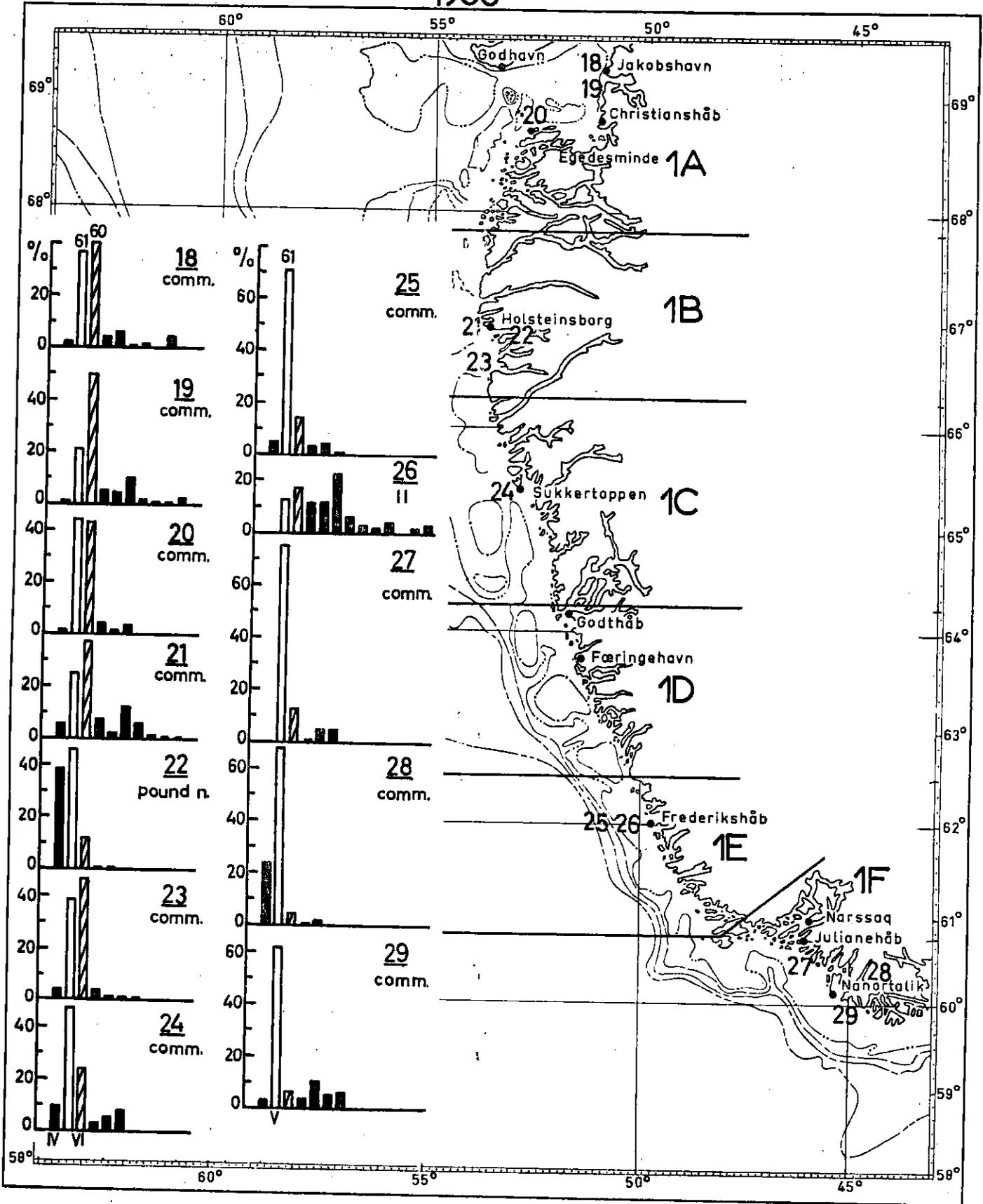


Fig. 4