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ANNUAL MEETING - JUNE, 1964.

Report on Participation of Federal Republic  
of Germany in ICNAF Environmental  
Survey, 1963.

(NORWESTLANT 1-3)

The Federal Republic of Germany's R/V "Anton Dohrn" participated in the second part of the ICNAF Environmental Survey, NORWESTLANT 2. The ship worked outside the ICNAF area in the waters SE of Greenland from 20 May to 30 June, 1963, studying the environment and the planktonic stages of cod and redfish along the hydrographic sections No. XI, XII and XIII, the larval redfish sections No. 1 and 2, and a narrow station grid along the SE coast of Greenland.

Altogether 119 stations (including 6 trawling stations outside the proper area of investigation) were completed.

The work carried out was as follows:

- a) Zooplankton-Fish fry: As far as weather conditions allowed the Helgoland larvae net was used for vertical hauls (59 stations, 61 lowerings), in all other cases the Nansen-net was in action (40 stations). Besides these the Nansen closing net was lowered 8 times. Oblique hauls with the two meter stramin net were made at 80 stations; on the rest of the stations no catches could be made because of the motion of the sea. The Icelandic High Speed Samplers were only used in three cases.
- b) Fishing: Two catches were made with the otter trawl on Fylkir Bank and on Cape Møsting ground off the SE coast of Greenland. In the central part of the investigational area 4 hauls of 1 hour's duration were made with a floating trawl. The maximum fishing depth must have exceeded 800 m. The IKMT was in action only once; the fishing depth was about 450 m.
- c) Phytoplankton: On the three hydrographic sections, plankton samples were taken at all standard depths of the hydrographic series down to 600 m (a total of 360 samples). The amount of ammoniac and organic matter was determined in 456 and 464 samples resp. from all standard depths of the hydrographic series.
- d) Oceanography: 1) 31 hydrographic series each with 12 Nansen-bottles were lowered to 1200 m depth and three other series down to the bottom, providing together 429 measurements of temperature. The thermograph was lowered at 74 plankton and trawling stations to 270 m depth. 2) The bathysonde was lowered at 32 stations providing 62 registrations of temperature and conductivity; the depth was: 16 times to 1400 m, 43 times to 1200 m, twice to 1000 m and once to 480 m. Surface turbidity measurements were continuously recorded on section XIII and incompletely on sections XI and XII. 3) The amount of inorganic phosphate was determined in 447 samples from 33 stations. 400 water samples were preserved for determining the total phosphate on shore. A new apparatus for continuous recording of the amount of inorganic phosphate in the surface layers was in action through the whole cruise. 4) 456 determinations each of oxygen, silicate,  $p^H$ , and total alkalinity were carried out. 456 water samples were

filled into bottles for determination of the salinity. 5) 443 photometric determinations of the turbidity were carried out instead of "in situ" registrations of the turbiditymeter which did not work. 6) 314 samples of water were worked for determination of nitrate in addition to 141 samples which will be worked up on shore. 7) the oxygene sonde was lowered at 24 stations to a maximum depth of 500 m.



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Hydrography

As already reported all hydrographic stations could be carried out by F. F. S. "Anton Dohrn" except the ones lying under the pack-ice. A total of 34 stations was dealt with. Except for 3 stations water samples were taken at all stations down to a depth of 1200 m. The data obtained for temperature and salinity have been checked and have been sent to the Canadian Oceanographic Data Center for interpolation and further treatment. In the meantime the vertical sections nos. 11, 12 and 13 with temperature, salinity and  $\zeta_t$  have been drawn in accordance with the directions given by the circular letters. The horizontal maps concerning the area treated by "Anton Dohrn" have also been drawn. Up to now we did not find the time to draw the maps for the horizontal distribution of the dynamic topography.

When considering the data it becomes obvious that the data interpolated by the Canadian Oceanographic Data Center often lead to peculiar conclusions, especially with regard to the water masses at the surface. This is also valid for the chemical data.

Up to now no further treatment of the material took place. Generally it can be said that a situation almost like in winter was met.

Klaus Grasshoff