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A Short Presentation of Hydrographic Data Sampled During the
Shrimp Surveys in 1990 and 1992 in Denmark Strait.

by

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INTRODUCTION

In 1989, 1990 and 1992 Greenland Fisheries Research Institute conducted stratified random trawl surveys in Denmark Strait (Kannevorff & Lehmann 1990, Lehmann & Kannevorff 1991, Carlsson & Kannevorff 1993). In 1990 and 1992 CTD profiles were taken at nearly all stations. This paper is a brief presentation of hydrographic data. The information may be useful in discussions on the ecology of the Denmark Strait shrimp (*Pandalus borealis*) population.

MATERIAL AND METHODS

The two surveys are stratified random trawl surveys, which is not optimal for comparison of the two years hydrographic data, because the stations are selected without any weighing of hydrographic interest. The CTD profiles were taken at every trawl station either before or after trawling. The parameters measured were conductivity (salinity), temperature and pressure (depth). In 1990 the survey was in the period August 20 to September 9 and in 1992 in the period October 8 to October 26. Fig. 1 and 2 show all the stations with hydrographic observations in the two years.

RESULTS AND DISCUSSION

Stations where CTD profiles were taken are shown in Fig. 1 (1990) and Fig. 2 (1992). Constructed isolines for bottom temperature and bottom salinity are given in Fig. 3-6.

The oceanography in the research area is very complex (Buch, 1990). In order to describe a transect across the central part of the survey area stations from the two years as close as possible to a straight line were selected (Fig. 1, 2 and 7). Based on CTD-profiles from the selected stations temperature and salinity transects were constructed (Fig. 8-11).

In both 1990 and 1992 stable bottom temperatures in the range of 1-1.5° and a high salinity of about 34.8‰ are found in the near-bottom layers where shrimp occurs.

To the southeast of the research area the border between the polar current and the Irminger current is evident by the sudden shift in both temperatures and salinity (Fig. 8-11).

REFERENCES

- Buch, Erik. 1990. A monograph on the physical oceanography of the Greenland waters. Greenland Fisheries Research Institute. 405 p.
- Carlsson, D.M. & P. Kannevorff, 1993. Stratified-Random Trawl Survey for Shrimp (*Pandalus borealis*) in Denmark Strait in 1992. NAFO SCR Doc. 93/xx.
- Kannevorff, P. & K.M. Lehmann, 1990. Report on a Stratified-Random Trawl Survey for Shrimp (*Pandalus borealis*) in ICES Subarea XIVb. NAFO SCR Doc. 90/58. Serial No. N1779.
- Lehmann, K.M. & P. Kannevorff, 1991. Report on a Stratified-Random Trawl Survey for Shrimp (*Pandalus borealis*) in ICES Division XIVb in 1990. NAFO SCR Doc. 91/52. Serial No. N1935.

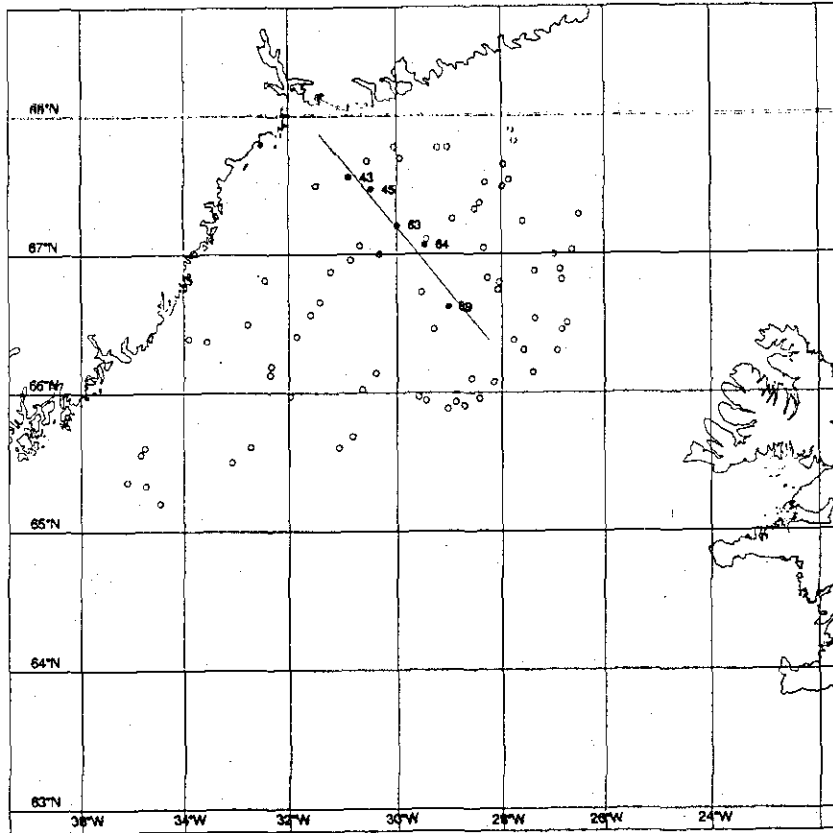


Fig. 1. The research area with hydrographic stations in 1990. The line shows the position of the transect in Figs. 8 and 9 with the selected stations.

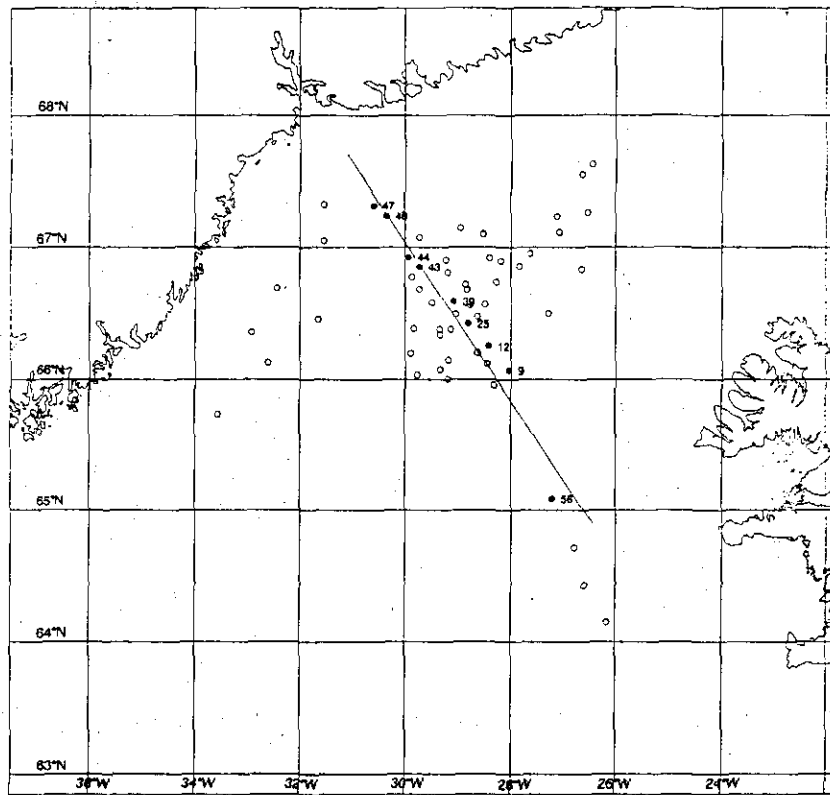


Fig. 2. The research area with hydrographic stations in 1992. The line shows the position of the transect in Figs. 10 and 11 with the selected stations.

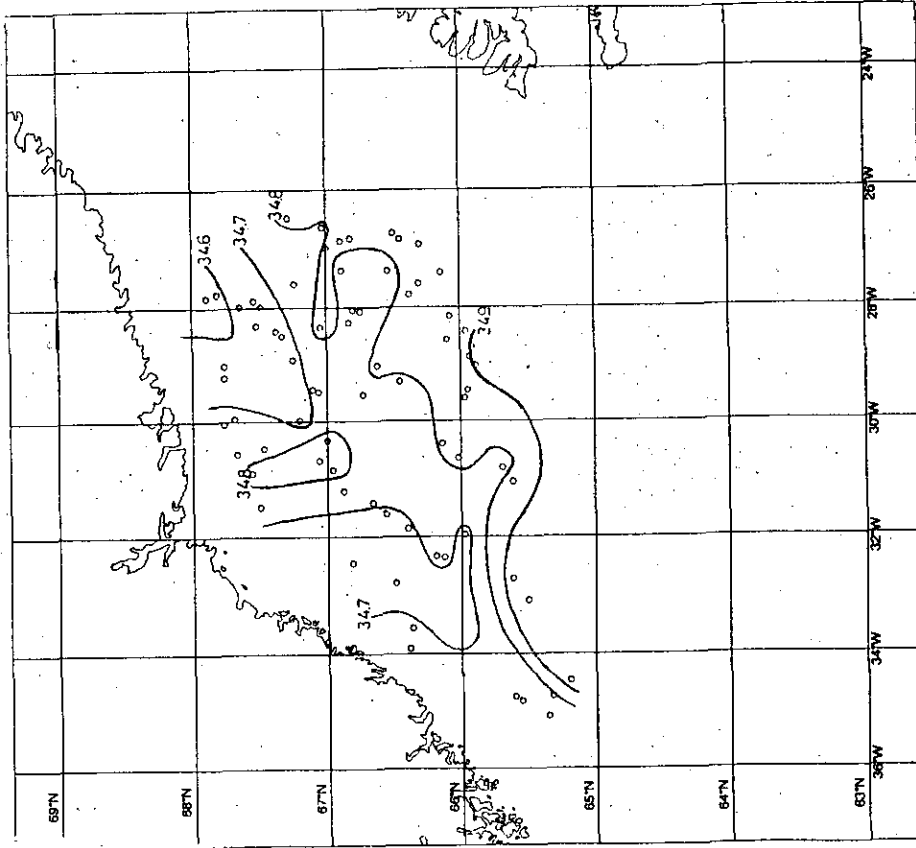


Fig. 4. Bottom salinity (in ‰) for 1990.

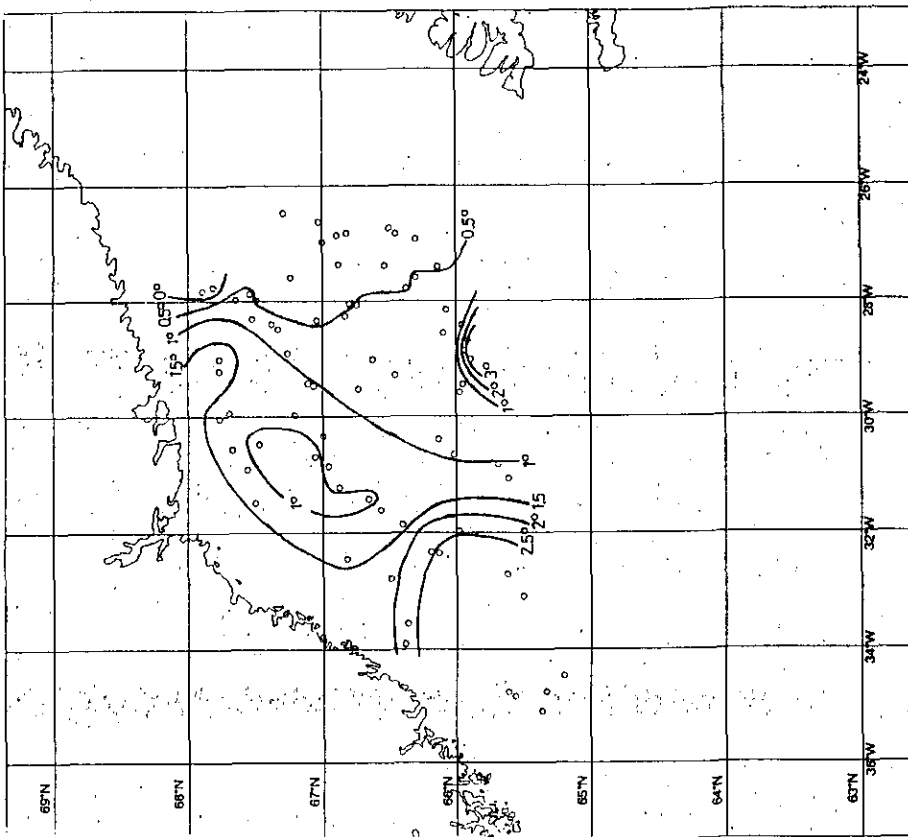


Fig. 3. Bottom temperature (in °C) for 1990.

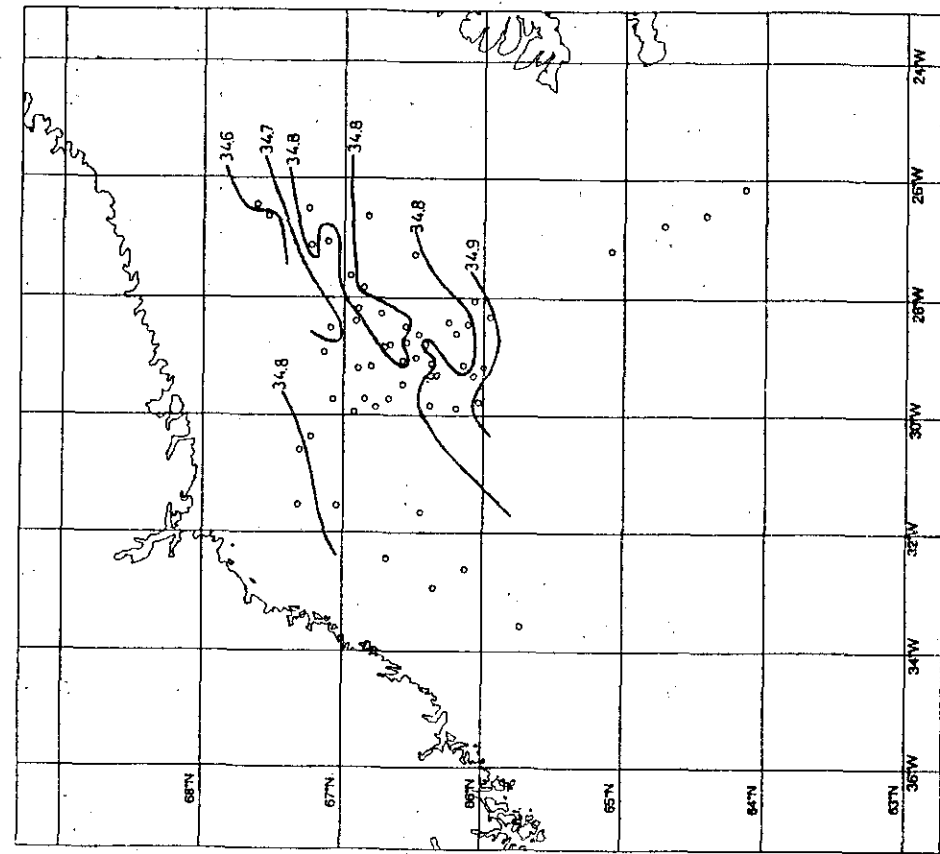


Fig. 6. Bottom salinity (in ‰) for 1992.

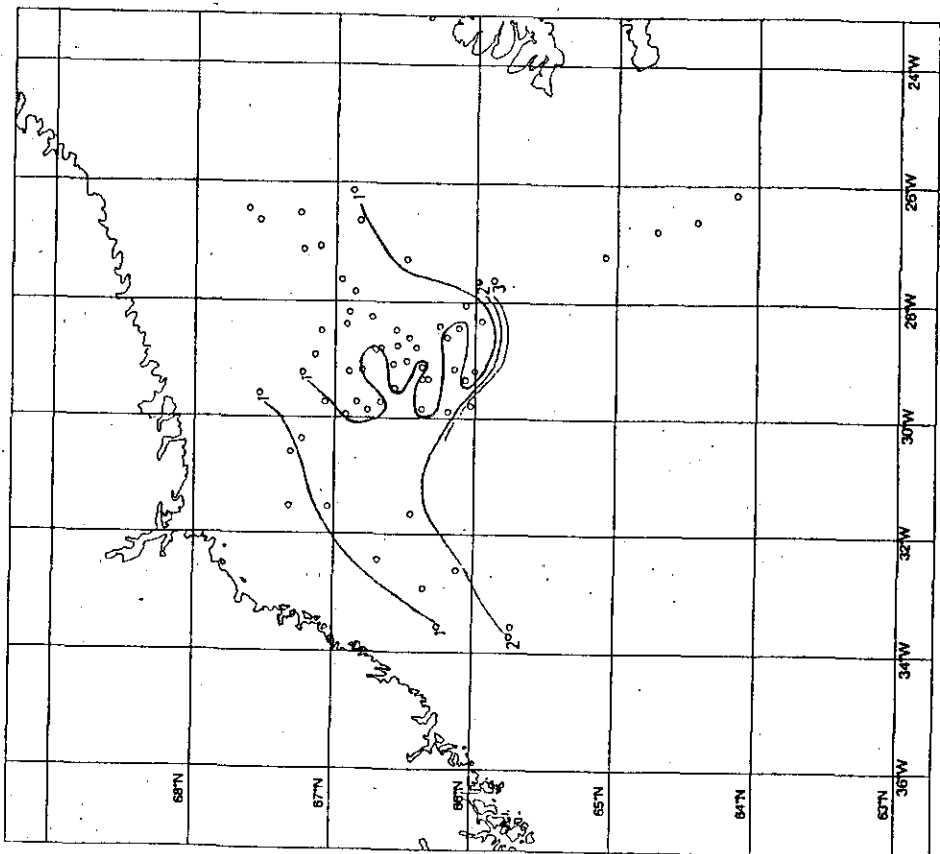


Fig. 5. Bottom temperature (in °C) for 1992.

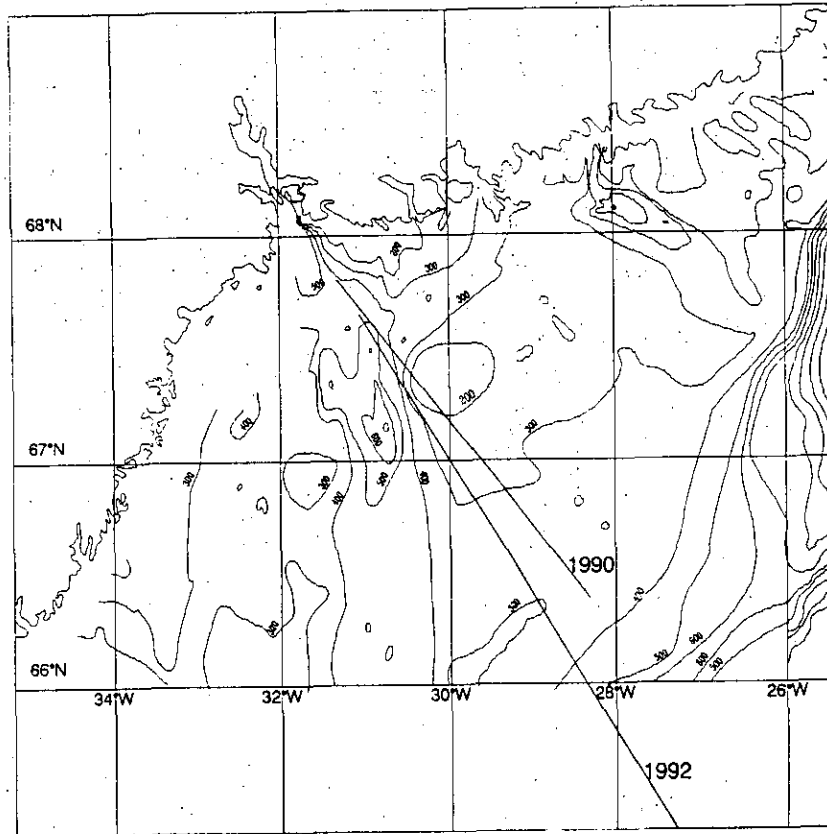


Fig. 7. The research area with depth contours and the two transects for 1990 and 1992.

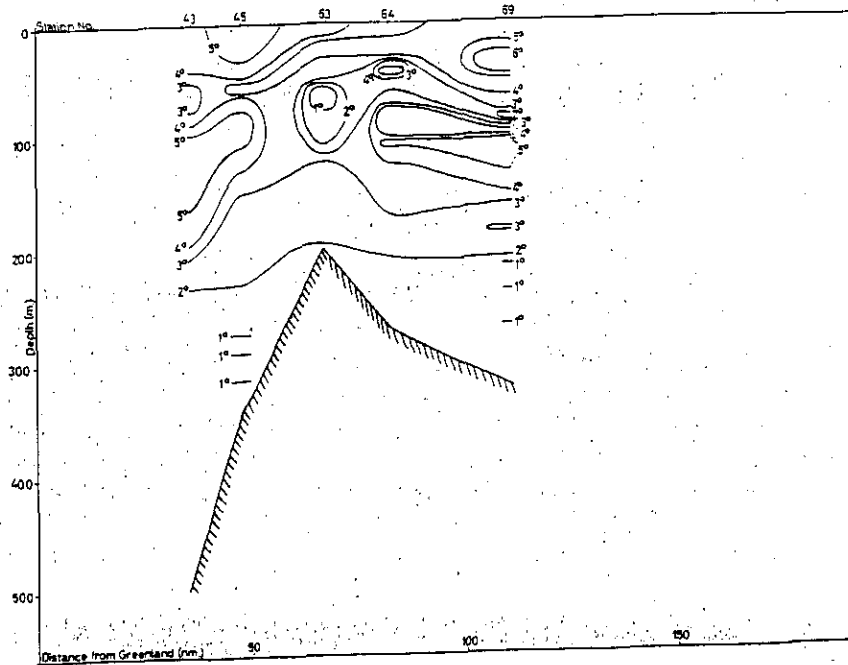


Fig. 8. The transect with temperatures (in °C) for 1990 shown in Figs. 1 and 7.

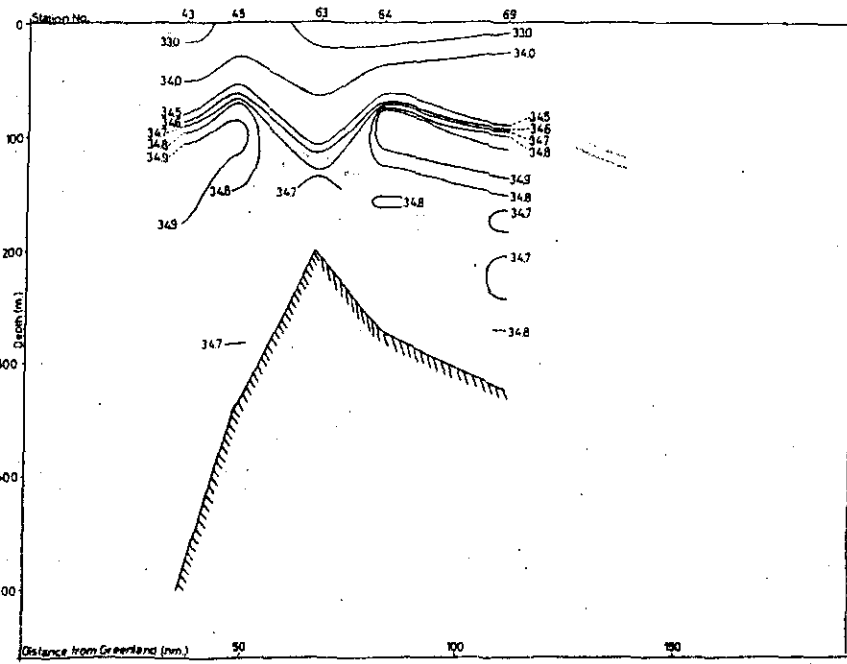


Fig. 9. The transect with salinity (in ‰) for 1990 shown on fig. 1 and 3.

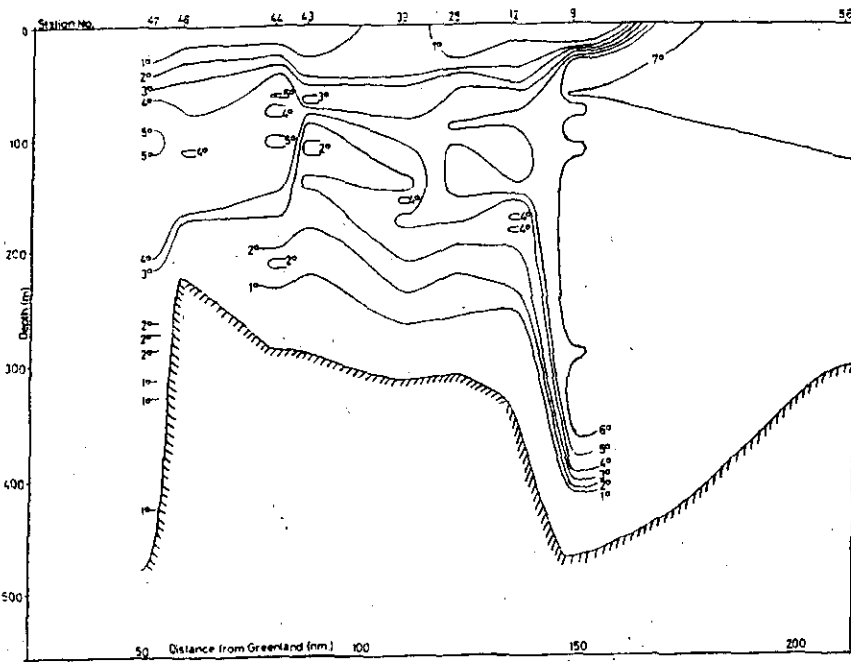


Fig. 10. The transect with temperatures (in °C) for 1992 shown on Figs. 2 and 3.

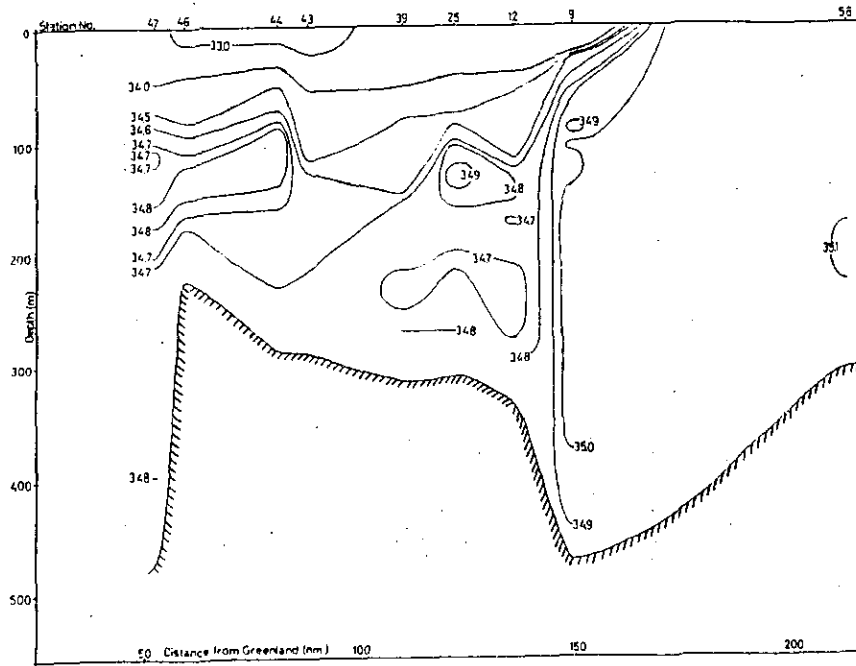


Fig. 11. The transect with salinity (in ‰) for 1992 shown on Figs. 2 and 7.