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Hydrographic conditions on Hamilton Inlet Bank (Div. 2J) in early November 1976

by

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Introduction

During the groundfish survey by *RV WALTHER HERWIG* in ICNAF-Division 2J hydrographic measurements were performed along the ICNAF Standard Oceanographic Section Seal Island - Cape Farewell. The positions of the stations were chosen according to ICNAF Circular Letter 76/29. Between 2 November and 5 November 1976 Standard Oceanographic Station No. 2 throughout 9 were completed. The results are given in Fig. 1 and table 1.

Vertical distribution of temperature and salinity

The hydrographic situation along the Standard Section in early November 1976 is given in Fig. 1. The isothermes very clearly delineate the sharp boundary between the cold arctic component and the warm West Greenland component of the Labrador Current. Whereas this boundary (2°C - isotherme) was situated in the middle of the Hamilton Bank in fall 1974 (STEIN, 1975) the position in early November 1976 was the same as observed during the 1975 cruise of *R/V ANTON DOHRN* (STEIN, 1976). According to the previous year the arctic component of the Labrador Current dominated the whole bank area.

Mean values of temperature along the Standard Section

The calculation of mean temperatures along the Seal Island Section was continued with the 1976 measurements included. The present mean value \bar{t} is based on the observations carried out since fall 1969 (excl. 1970) by German research vessels.

Table 1: Mean temperature (\bar{t} = average 1969-76, excl. 1970) and mean temperature differences in degrees centigrade as compared to 1976 ($\bar{t} - t$) in distinct water layers on the Seal Island Section in early November 1976.

station layer	S2	S3	S4	S5	S6	S7	S8	S9
\bar{t}	0.20	0.49	0.26	0.17	0.63	0.79	2.36	2.73
0-50m $\bar{t} - t$	- 0.78	- 0.61	-0.38	-0.14	-0.34	-0.69	-0.04	-0.37
\bar{t}	-	0.44	-	-	1.35	1.55	2.98	3.36
50-200m $\bar{t} - t$	-	0.07	-	-	0.17	-0.53	0.02	-0.01
\bar{t}	-	0.50	-	-	1.21	1.39	2.86	3.23
0-200m $\bar{t} - t$	-	-0.05	-	-	0.08	-0.55	0.05	-0.08

Compared with the mean temperatures (see Table 1) the hydrographic condition on Hamilton Inlet Bank was up to 0.78°C warmer in the surface layer (0-50m) than normal. In the deeper layer (50-200m) rather high temperature were found at Station S7 where the observations yielded temperatures being 0.55°C warmer than the mean value.

Concluding one can say that the measurements performed in early November 1976 across Hamilton Inlet Bank reveal a warming of the Labrador Current which is larger in the nearshore part than in the offshore part of the Standard Section.

References

STEIN, M., 1975: Hydrographic conditions on Hamilton Inlet Bank (Div. 2J) in Fall 1974 ICNAF Res.Doc. 75/29

STEIN, M., 1976: Hydrographic conditions on Hamilton Inlet Bank (Div. 2J) in the fall of 1975 ICNAF Res.Doc. 76/VI/88

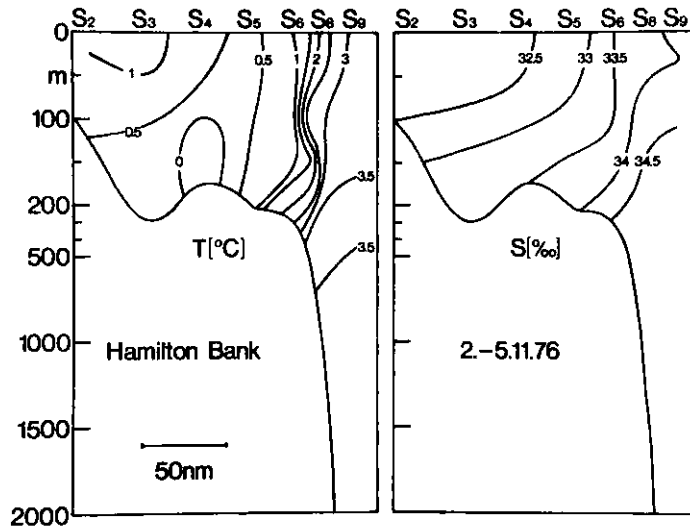


Fig. 1 Vertical distribution of temperature and salinity along Seal Island Section during early November 1976

