

CRUISE REPORT FROM R/V ARGOS

Survey period: 990830 - 990915

Survey area: The Skagerrak, the Kattegat, and the Öresund.

Principal: SMHI and Swedish National Board of Fisheries

SUMMARY

The expedition was performed in co-operation with the National Board of Fisheries and covered the Skagerrak, the Kattegatt and the Öresund. Oxygen concentrations in the Kattegatt bottom water were mapped.

Low oxygen concentrations were found in the bottom water at Lundåkrabukten 1.95 ml/l and Skälderviken 1.51 ml/l. In the south east parts of Kattegatt the oxygen concentrations varied between 2.3 to 3.0 ml/l.

PRELIMINARY RESULTS

The expedition, was carried out in co-operation with the National Board of Fisheries, it began in Göteborg on the 30th of August and ended in the same port on the the 15th of September. Hydrography and nutrient sampling were carried out on five of the SMHIs frequent stations. At the station Anholt E sampling were performed twice. Hydrography and nutrient sampling were also carried out on four trawl stations. Furthermore, oxygen concentration and salinity, were measured in the bottom water at another 29 trawl stations. During the whole period the weather was dominated by weak winds.

The Skagerrak

Both the thermocline and halocline were located at a depth close to 10 meters. The surface water temperature varied between 16.5 and 18°C. The oxygen saturation was 99% in the surface layer. The oxygen concentrations in the bottom water were over 5 ml/l except at the station Sörgrund where it was 4.8 ml/l

The Kattegatt and the Sound

The surface water temperature varied between 17.3 and 18.6°C. The salinity at the surface was 17.0 to 17.5 in the whole Kattegatt. In the mouth of the Sound the surface salinity decreased, to about 7.7. In the western part the thermo- and halocline where found at a depth of 6 to 8 meters, and in the rest of the Kattegatt the thickness of the well mixed surface layer varied between 9 to 13 meters. The nutrient concentrations for ortophosphate, nitrite, nitrate, and ammonia were closed to or below the detection limit ($\text{PO}_4^{2-} < 0.02 \mu\text{mol/l}$, $\text{NO}_2^- < 0.02 \mu\text{mol/l}$, $\text{NO}_3^- < 0,05 \mu\text{mol/l}$, and $\text{NH}_4^+ < 0.05 \mu\text{mol/l}$), while the silicate values varied between 0.3 to 5.3 $\mu\text{mol/l}$.

In the surface water the oxygen saturation varied between 101 to 116%. The oxygen concentration in the bottom water at the station Lundåkrabukten, in the Sound, was only 1.95 ml/l. At the other stations in the Sound the oxygen values were 2.47 and 2.91 ml/l, respectively. Also at the station Skälderviken the oxygen concentration was low, 1.51 ml/l. The oxygen concentrations at the rest of the stations in the Kattegatt varied from 2.3 in the southeastern to 3.9 ml/l in the northeastern part.

PARTICIPANTS

Name	From
Lars Edler, w35	SMHI Oceanographical lab.
Mats Ohlson, w36	- " -
Jan Szaron, w36	- " -
Lars Andersson, w37	- " -
Jorge Valderrama, w37	- " -

APPENDICES

- Track chart
- Table over stations, parameters and sampling depths
- Map showing bottom oxygen concentrations
- Monthly average plots for selected stations
- Profiles for selected stations