

CRUISE REPORT FROM R/V ARGOS

Survey period: 20010827-20010901

Survey area: The Skagerrak, the Kattegat,
the Sound, and the Baltic Proper

Principal: SMHI

SUMMARY

The expedition was performed within SMHI's regular marine monitoring programme and covered the Skagerrak, the Kattegat, the Sound, and the Baltic Proper.

Nutrient conditions were normal for the season in all areas.

Oxygen concentrations below 2 ml/l were found in the whole Baltic Proper at depths greater than 70 to 80 metres. Hydrogen sulphide was present in the Eastern and Western Gotland Basin at depths greater than 90 metres, in the Bornholm Basin from 80 metres and in the Hanö Bight from 70 metres.

PRELIMINARY RESULTS

The cruise, which was a part of the SMHI ordinary monitoring programme, began in Göteborg on 27 August and ended in the same port on the 1 September. During the beginning of the expedition, fresh to strong winds from north to west dominated while the winds during the later part were weak to moderate from east and south.

The Skagerrak

Surface water temperatures varied between 16.5 and 17.5 °C. All nutrients showed, for the season, normal concentrations. At depth between 8 and 22 meters fluorescence maxima were present. The dominant phytoplankton species in the maxima was *Karenia mikimotoi* (synonym *Gyrodinium aureolum*). The abundance varied between 136 000 and 2 170 000 cells per litre. The largest abundance was observed at 8 meters depth at station P2.

The Kattegat and the Sound

Surface water temperatures varied between 18 and 19 °C, which is somewhat higher than normal for the season. The thermocline and halocline were both located at a depth of 10 metres. Nutrient concentrations were normal for the season, nitrite around detection limit (0.02), nitrate below detection limit (0.10), phosphate 0.12 and silicate 0.5-5.5 µmol/l, with the highest value in the Sound.

The lowest oxygen concentration in the deep water was measured at Anholt E in the southern part of Kattegat, 3.39 ml/l, corresponding to a saturation of 50 %.

At the second visit at Anholt E at the end of the expedition, a very strong fluorescence maximum was found at a depth of 36 metres.

The Baltic Sea

Surface water temperatures varied between 17 and 18 °C in the main part of the area. However, in the Western Gotland Basin, the temperature was only 15.5 °C. The thermocline, which was very sharp was located at a depth of 20 metres in the whole area. The halocline was found at 30-50 metres in the southern parts, and at 60-80 metres in the central areas.

The fluorescence was relatively high in the well-mixed surface layer.

Nitrite and nitrate concentrations were normal for the season, close to or below the limit of detection, 0.02 and 0.1 µmol/l respectively. The concentration of phosphate was also at a normal level between 0.05 and 0.15 µmol/l. Silicate concentrations varied between 4 and 7 µmol/l, which is lower than the long term mean for the season.

Oxygen concentrations below 2 ml/l were present at depths greater than 70-80 metres in the whole area. Hydrogen sulphide was present in the Eastern and Western Gotland Basins at depths greater than 90 metres, in the Hanö Bight from 70 metres and from 80 metres in the Bornholm Basin.

PARTICIPANTS

Name	From
Lars Andersson, chief scientist	SMHI Oceanographical lab.
Sari Sipilä	- " -
Jan Szaron	- " -
Jorge Valderrama	- " -
Bodil Thorstensson	- " -
Kristina Beijer	trainee

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
-