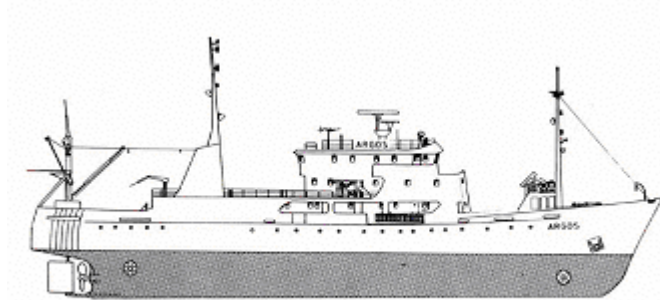


## CRUISE REPORT FROM R/V ARGOS



**Survey period:** 2005-10-24 - 2005-10-29

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

**Principal:** SMHI

### SUMMARY

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

*Data presented in this report have been subject to preliminary quality control procedures only.*

*Surface water temperatures were normal in the whole area.*

*Silicate concentrations were raised in the Skagerrak and Kattegat. In the Sound, high phosphate and silicate concentrations were recorded in the out-flowing water from the Baltic.*

*In Arkona and Bornholm basins both phosphate- and silicate concentrations in surface water were still high.*

*Oxygen concentrations below 2 ml/l were observed in bottom water in the Arkona Basin and at depths exceeding 70 to 90 metres in other parts of the Baltic Proper.*

*Hydrogen sulphide was found at 80 metres in the Bornholm Basin, from 100 metres in the eastern Gotland Basin and from 90-100 metres in the western Gotland Basin.*

*The next expedition is scheduled for November 14 to 19, 2005.*

## **PRELIMINARY RESULTS**

The cruise, part of SMHI's ordinary monitoring programme, began in Gothenburg on October 24 and ended in the same port on October 29.

The weather during the expedition was mainly windy.

### **The Skagerrak**

Surface water temperatures were normal. They varied between 11 and 12 °C. A thin surface layer with low salinity covered almost all of the investigated area. Only at Å17, furthest west, was surface salinity normal at almost 31 psu.

Silicate concentrations were above normal in the whole area. They varied between 3.8 and 6.0 µmol/l. Phosphate and nitrate concentrations were normal. Nitrate was just above the limit of detection, 0.1 µmol/l in the surface water while phosphate concentration was c:a 0.2 µmol/l.

### **The Kattegat and the Sound**

Surface water temperatures were normal for the season, c:a 12 °C. Surface salinities were normal too, 19-21 psu in the Kattegat and 15 psu in the central part of the Sound. The halocline was found at 10 to 15 metres.

Surface nitrate concentrations were normal, in the Kattegat, close to the detection limit of 0.1 µmol/l and in the Sound 2 µmol/l. Silicate concentrations in the surface layer were increased throughout the area. They were raised from 5 µmol/l in northern Kattegat to c:a 15 µmol/l in the Sound. In the Kattegat surface phosphate concentrations were normal, c:a 0.2 µmol/l. In the Sound, high phosphate concentrations (0.6 µmol/l) were recorded in the out-flowing water from the Baltic. In the Sound only, oxygen concentrations close to 2 ml/l were recorded. At the bottom of W Landskrona, 2.3 ml/l was measured corresponding to a saturation of 38 %.

### **Baltic Proper**

Surface water temperatures, which varied between 10 and 13 °C, were normal for the season. The thermocline was at 30 to 40 metres. The halocline began at 35 metres in the Arkona Basin, at 45 metres in the Bornholm Basin and at 75 metres in the remainder of the Baltic Proper.

In the Arkona and Bornholm Basins surface phosphate and silicate concentrations were still high, 0.5 - 0.6 and 12 - 14 µmol/l respectively. In the rest of the area the surface nutrient concentrations were normal i.e. phosphate 0.2 - 0.3 and silicate 8 - 11 µmol/l. Station BY10 differed with a low surface silicate concentration of 5 µmol/l. Nitrate concentrations in the surface water were between 0.1 and 0.5 µmol/l at all stations.

Oxygen conditions in the bottom water were bad throughout the area. Oxygen concentrations below 2 ml/l were found at the bottom in the Arkona Basin, and at depths exceeding 60 - 70 metres in the southern Baltic Proper and 80 - 90 metres in the eastern and western Gotland Basins. Hydrogen sulphide was found at 80 metres in the Bornholm Basin, from 100 metres in the eastern Gotland Basin and from 90-100 metres in the western Gotland Basin.

## PARTICIPANTS

Name		From
Bengt Yhlen	Chief scientist	SMHI Oceanographic lab.
Martin Hansson		-''-
Sari Sipilä		-''-
Arne Svensson		-''-
Bodil Thorstensson		-''-

## APPENDICES



Click on the button to open appendices.  
Note that this will only work when  
connected to Internet!

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