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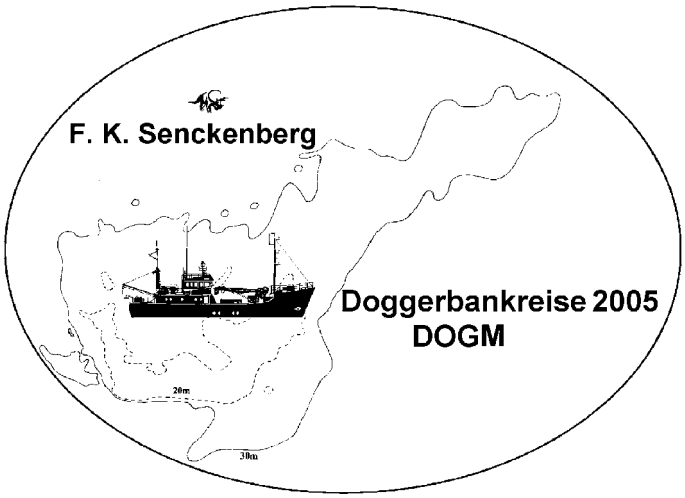
Report on the 2005 Dogger Bank cruise with R. V. Senckenberg

2. – 10. 8. 2005



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Contents:

Frankfurt a. M., August 2005

1. Aims and setting

The interannual variability of the epibenthic fauna of the Dogger Bank is a long term project of the Senckenberg-Institute since 1990. This project aims at gathering basic data which may form background information for understanding presumed environmental changes. Therefore the study refers to 37 stations (see map in Annex) that are, whenever possible, sampled on a yearly basis in the same season with the same gear. The fauna is recorded quantitatively from each sample in order to allow studies on relative abundance.

The present cruise forms the 13th of the series and gets the suffix DOG-M. All former cruises were labelled after the alphabet with one letter starting with DOG-A in 1991. The first in 1990 was called DOG without any suffix.

2. Narrative

Station 14 was reached on August 3, 2005 at 11.25 MESZ (UTC+2). At this and the following stations conductivity, salinity and water temperature were measured along the whole water column to a maximum depth of 29 m with a probe (ME SM-24). Subsequently one sample with a 2m-beam-trawl was taken. Until the end of the day five stations were sampled (14, 13a, 4, 3, 5). Work had to be stopped on he next day because of strong winds. At the following day (August 5, 2005) eight stations (6, 7, 8, 9, 10, 11, 12, 17) could be sampled, in supplement to the CTD and trawl a mini-corer for sampling Meiofauna was used on station 8. Work was continued on the next day (August 6, 2005) from 07.00 on and 9 stations were sampled (18, 20, 16, 22, 15, 23, 26, 21, 28). Because of increasing wind work was paused for the next day (August 7, 2005). As the weather was not to change for the following 24 hours and maybe further, it was decided on August 7 evening that work was to be halted and the vessel headed back to the German Bight for further sampling. in the outer German Bight a sample with the Minicorer was taken after a CTD-measurement. The Helgoland trench was reached on August 8, 2005 at 16.20. After a CTD-measurement the Beam Trawl was deployed once. The aim of this work was to collect epibenthos-material in order to complement to life-cycle studies of decapod crustaceans of the German Bight. After this, the vessel headed back towards Helgoland, which was reached on August 8, 2005 at 20.20. On the next day strong winds made work impossible so that the vessel stayed moored at Helgoland port waiting for better weather conditions. As this was also in vain, it was decided to leave on the next day. The vessel headed back to her home port Wilhelmshaven on August 10, 2004 at 08.00 local time. On the way back sampling for foreshore fauna was undertaken off the Island of Wangerooge with one trawl sample. The vessel reached Wilhelmshaven on the same day at 13.40.

3. Methods:

For measuring environmental parameters a CTD probe (RCM) was used. The Probe was lowered to a maximum depth of 29 m. Then it was hauled to the sea surface. During lowering and heaving conductivity, salinity and temperature were recorded throughout the water column.

Epibenthos was collected with a 2m beam trawl with a tickler chain and a chain in the bottom rope. The minimum mesh size in the cod-end was 1 cm, so that animals above that size were collected quantitatively. The trawl was towed for 1 nautical mile at a speed of 2,5 knots. The sample was secured quantitatively (as far as possible) and washed through a set of sieves with 1 cm maximum and 1 mm minimum mesh size, respectively. The 1 cm-fraction was identified and counted on board the vessel, organisms not readily identifiable were preserved and taken back to the home laboratory. The smaller fractions were also preserved and taken back for qualitative analysis.

Work in the German Bight was performed with a ring-dredge equipped with a net of 1 cm mesh-size. The sand-sample was washed to separate endobenthos from the sediment. Besides this, the beam trawl was used in the Helgoland Trench.

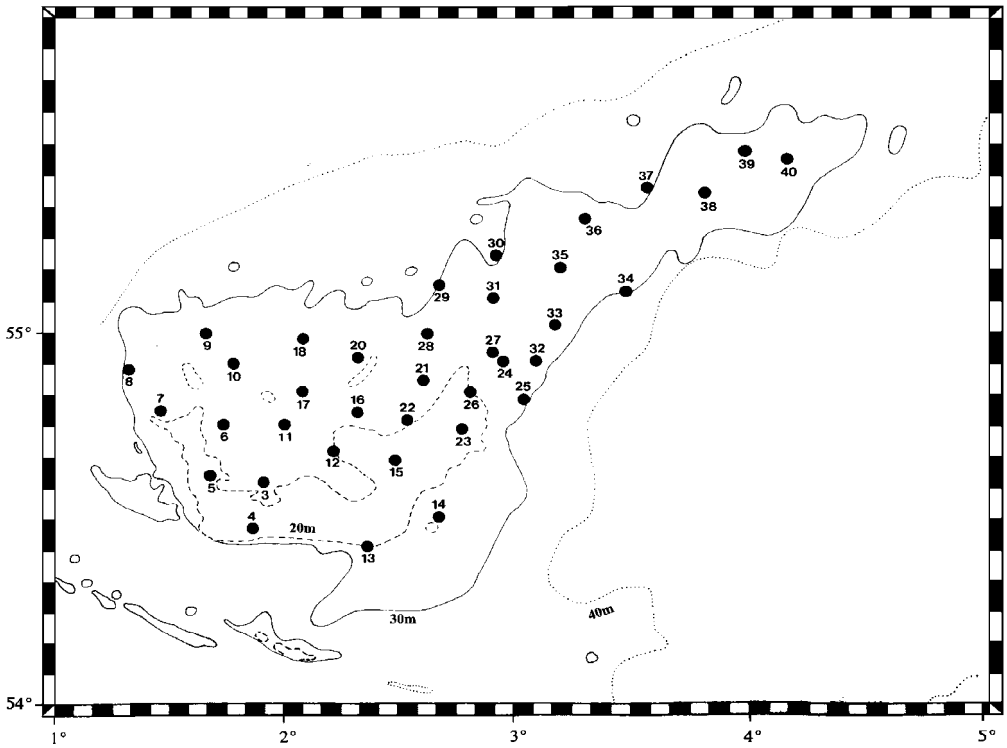
4. Station list

Abbreviations: BMT = Beam Trawl, HTR = Helgoland trench, LB = Loreley-Bank, MIC = Minicorer, RD = Ring-Dredge. – All depths in metres.

Station	Gear	Position start	Position end	Depth from	Depth to	Time (CEST)	Date
03	BMT	54°35,977'N 01°54,963'E	54°35,896'N 01°53,029'E	23,6	25,3	19.33-19.55	3. 8. 2005
03	CTD	54°35,870'N 01°55,355'E		24	0	19.25	3. 8. 2005
04	BMT	54°28,634'N 01°52,614'E	54°28,587'N 01°50,808'E	20,6	20,8	17.33-18.00	3. 8. 2005
04	CTD	54°28,617'N 01°52,741'E		20,1	0	17.28	3. 8. 2005
05	BMT	54°37,060'N 01°41,720'E	54°37,208'N 01°39,789'E	22,3	24,9	21.29-21.55	3. 8. 2005
05	CTD	54°37,070'N 01°42,157'E		23,6	0	21.19	3. 8. 2005
06	BMT	54°45,196'N 01°44,110'E	54°5,552'N 01°42,157'E	26,5	27,8	07.13-07.42	5. 8. 2005
06	CTD	54°45,131'N 01°44,464'E		31,8	0	07.05	5. 8. 2005
07A	BMT	54°47,922'N 01°26,000'E	54°48,628'N 01°24,807'E	25,4	28	09.30-09.55	5. 8. 2005
07A	CTD	54°47,739'N 01°26,645'E		28,5	0	09.22	5. 8. 2005
08	BMT	54°53,848'N 01°19,606'E	54°54,512'N 01°21,394'E	28,1	29,3	11.12-11.40	5. 8. 2005
08	CTD	54°53,442'N 01°19,125'E		30,6	0	11.03	5. 8. 2005
08	MIC	54°54,646'N 01°21,651'E		28,3	0	12.00	5. 8. 2005
09	BMT	54°59,386'N 01°38,485'E	54°59,832'N 01°39,950'E	27,9	30,4	13.52-14.17	5. 8. 2005
09	CTD	54°59,306'N 01°38,058'E		31,1	0	13.46	5. 8. 2005
10	BMT	54°54,953'N 01°47,096'E	54°55,786'N 01°45,931'E	25,6	26	15.23-15.49	5. 8. 2005
10	CTD	54°54,908'N 01°47,227'E		26,1	0	15.17	5. 8. 2005
11	BMT	54°45,368'N	54°46,001'N	33	35,9	17.37-18.05	5. 8. 2005

Station	Gear	Position start	Position end	Depth from	Depth to	Time (CEST)	Date
		02°00,352'E	01°59,001'E				
11	CTD	54°45,290'N 02°00,662'E		32,7	0	17.30	5. 8. 2005
12	BMT	54°41,621'N 02°12,785'E	54°42,671'N 02°12,295'E	24,2	24,2	19.38-20.05	5. 8. 2005
12	CTD	54°41,493'N 02°12,878'E		24,8	0	19.30	5. 8. 2005
13A	BMT	54°27,155'N 02°27,257'E	54°16,219'N 02°14,449'E	17,6	17,6	14.56-15.22	3. 8. 2005
13A	CTD	54°27,026'N 02°16,503'E		17,4	0	14.51	3. 8. 2005
14	BMT	54°31,008'E 02°40,609'E	54°30,847'N 02°40,535'E	23,3	22,7	11.37-12.02	3. 8. 2005
14	CTD	54°31,092'N 02°41,456'E		24,3	0	11.27	3. 8. 2005
14_1	CTD	54°31,093'N 02°38,683'E		22	0	12.14	3. 8. 2005
15	BMT	54°39,943'N 02°28,933'E	54°39,725'N 02°29,741'E	20,3	20,6	14.14-14.39	6. 8. 2005
15	CTD	54°40,015'N 02°28,609'E		20,3	0	14.08	6. 8. 2005
16	BMT	54°47,883'N 02°20,184'E	54°47,226'N 02°21,682'E	23	23,5	10.55-11.20	6. 8. 2005
16	CTD	54°47,930'N 02°19,488'E		23,3	0	10.45	6. 8. 2005
17	BMT	54°50,558'N 02°05,585'E	54°51,617'N 02°05,237'E	22,6	23,2	21.52-22.16	5. 8. 2005
17	CTD	54°50,241'N 02°05,686'E		22,9	0	21.43	5. 8. 2005
18	BMT	54°58,684'N 02°05,540'E	54°57,714'N 02°06,597'E	28,5	29,2	07.23-07.49	6. 8. 2005
18	CTD	54°59,087'N 02°05,145'E		29,8	0	07.14	6. 8. 2005
20	BMT	54°56,958'N 02°19,627'E	54°55,187'N 02°20,588'E	28,2	28,9	09.05-09.25	6. 8. 2005
20	CTD	54°56,251'N 02°19,280'E		29	0	08.57	6. 8. 2005
21	BMT	54°52,418'N 02°36,848'E	54°53,689'N 02°37,324'E	26,6	24,2	20.13-20.42	6. 8. 2005
21	CTD	54°52,238'N 02°36,685'E		24,8	0	20.02	6. 8. 2005
22	BMT	54°46,180'N 02°32,211'E	54°46,039'N 02°33,966'E	22,7	23,2	12.30-12.59	6. 8. 2005
22	CTD	54°46,230'N		23,4	0	12.22	6. 8. 2005

Station	Gear	Position start	Position end	Depth from	Depth to	Time (CEST)	Date
		02°31,666'E					
23	BMT	54°44,533'N 02°45,757'E	54°45,102'N 02°45,942'E	19,9	20,3	16.26-1651	6. 8. 2005
23	CTD	54°44,251'N 02°45,733'E		19,5	0	16.19	6. 8. 2005
26	BMT	54°50,770'N 02°48,303'E	54°51,685'N 02°47,822'E	21,3	22	18.15-1840	6. 8. 2005
26	CTD	54°50,546'N 02°48,419'E		21,5	0	18.06	6. 8. 2005
28	BMT	55°00,000'N 02°37,616'E	55°00,855'N 02°37,651'E	28,9	29,1	2.02-22.22	6. 8. 2005
28	CTD	54°59,750'N 02°37,547'E		28,4	0	21.55	6. 8. 2005
DB050808	CTD	54°23,501'N 06°22,134'E		40,6	0	10.20	8. 8. 2005
DB050808	MIC	54°23,501'N 06°22,134'E		40,6	0	10.20	8. 8. 2005
HTR0508008_1	BMT	54°08,558'N 07°53,560'E	54°08,592'N 07°51,785'E	55,9	57	16.36-17.02	8. 8. 2005
HTR0508008_1	CTD	54°08,560'N 07°54,044'E		55,6	0	16.26	8. 8. 2005
LR050810	BMT	53°49,342’N 07°53,056’E	53°48,859’N 07°54,643’E	12,5	12,9	10.29-10.51	10. 8. 2005



Station map of Doggerbank cruises

5. Temperature and salinity data

The full CTD measurements are available as an MS-Excel-file. Here the shallowest and deepest measurements are listed, respectively. The maximum depths in which T/S-data were recorded do not necessarily correspond to the bottom depth.

Stat. No.	Max depth [m]	Temp [°C] Surface	Temp [°C] Max. depth	Salinity [ppt] Surface	Salinity [ppt] Max depth
3	24,7	15,66	15,31	34,848	34,864
4	20,3	15,83	15,54	34,787	34,805
5	23,4	15,75	15,71	34,763	34,709
6	27,9	15,20	15,07	34,615	34,418
7a	28,5	15,05	15,05	34,699	34,706
8	29,1	14,54	12,79	34,737	34,772
9	27,5	14,42	14,28	34,791	34,819
10	26,3	14,76	14,63	34,778	34,813
11	27,9	15,12	14,96	34,831	34,835
12	26,1	15,36	15,20	34,849	34,853
13a	17,5	15,72	15,59	34,863	34,938
14	22,6	15,79	15,73	34,958	35,055
15	20,6	15,36	15,26	34,938	34,926
16	23,8	14,73	14,73	34,871	34,897
17	23,2	14,82	14,79	34,832	34,862
18	25,0	14,70	14,39	34,777	34,795
20	20,0	14,73	14,33	34,781	34,851
21	25,4	15,05	14,97	34,842	34,861
22	22,7	14,91	14,87	34,907	34,941
23	20,2	15,42	15,33	34,884	34,915
26	21,9	15,24	15,18	34,903	34,912
28	23,1	14,65	14,03	34,838	34,866
DB050808	23,4	16,35	16,33	34,051	34,080
HTR050809_1	24,2	17,47	17,31	32,030	32,296