

Cruise Report

Compiled by: Dr. Armin Form

F.K. LITTORINA

Cruise No.: L07a-21

Dates of Cruise: 02.-06.08.2021

Areas of Research: Aquarium West Shore

Port Calls: Grenå DK (03.08. - 05.08.2021, 2 nights)

Institute: GEOMAR Helmholtz Centre for Ocean Research Kiel

Chief Scientist: Dr. Armin U. Form

Number of Scientists: 3

Projects: Acquisition of living marine organism for the institute's own aquarium in the northern Kattegat.

Cruise Report

This cruise report consists of 4 pages including cover:

1. Scientific crew
2. Research programme
3. Narrative of cruise with technical details
4. Scientific report and first results
5. Moorings, scientific equipment and instruments
6. Additional remarks
7. Appendix.
 - A. Dredge position list

1. Scientific crew

Name	Function	Institute	Leg
Dr. Armin U. Form	Chief scientist	GEOMAR	Complete
Heidi Gonschior	Scientist	GEOMAR	Complete
Lukas von Krause	Scientist	GEOMAR	Complete
Total	3		

Chief scientist:

Dr. Armin U. Form

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2. Research programme

The aim of this cruise of the research vessel “Littorina” from 2nd August to 6th August 2021 was the sampling of living marine organisms for the institute’s own aquarium.

Marine invertebrates and vertebrates were collected with dredges at different stations and depths in the northern Kattegat to complete scientific collections in the Aquarium GEOMAR.

Additional depth water sampling was maintained for on-board cultivation of the organisms.

3. Narrative of cruise with technical details

02.08.2021	08:40	Departure of RV “Littorina” from Kiel harbor
03.08.2021	08:00	Arrival at location for depth water sampling from 30m. Salinity: 29.1, temperature: 12.1 °C
	09:00	Start scientific work with dredge
	16:10	Finished station work after 26 dredge towsings
		Heading towards port of Grenå DK
	17:35	Mooring at port of Grenå DK
04.08.2021	07:00	Departing port of Grenå DK
	10:30	Start scientific work with dredge
	14:00	Finished station work after 11 dredge towsings
	14:10	Depth water sampling; salinity: 29.0, temperature: 15.6 °C
	14:30	Heading towards port of Grenå DK
	18:05	Mooring at port of Grenå DK
05.08.2021	07:00	Departing port of Grenå DK
	08:30	Start scientific work with dredge
	15:15	Finished station work after 18 dredge towsings
		Heading back towards Kiel harbor
06.08.2021	07:00	Arrival of RV “Littorina” at Kiel harbor

4. Scientific report and first results

During our fieldwork the samples collected contained a wide range of marine organisms with a focus on a high salinity environment within the Baltic Sea in an area called the Kattegat. Because this area is located close to the North Sea it is characterized by a high salinity and also by high abundance of North Sea species, which is important and very interesting for sampling cruises. An effect of the low salinity environment like existing in most parts of the Baltic Sea is that the organisms, which are mainly emigrated from the North Sea, have to cope with salinity stress. To deal with that energy demanding stress the organisms have to relocate their focus from growth processes to e.g. ion exchange processes resulting in smaller sizes compared to their species members in the salty North Sea environment. One proper way to

show the public the differences in species abundance and the size to stress relationship is the public presentation of living organisms. This public relation work is done in the Aquarium GEOMAR.

To gain as many different species as possible we also dredged in various depths between 12 to 35m where the factor “light intensity” plays also an important role in benthic community composition.

5. Scientific equipment: moorings and instruments

- Dredge
- Depthwater pump
- Salinity probe

6. Acknowledgements

Thanks to the captain and the whole crew of RV “Littorina” for the great support during the trip. Additionally, we thank the authorities of Denmark who give us the work permit for our field work within their territorial waters.

7. Appendices

- A. Dredge position list

03.08.2021

Kattegat

	Posi	Ausgesetzt	Eingeholt	Erfolg
1	56° 23,98'N 077° 19,56'E	0900	0910	gut
2	56° 24,10'N 077° 20,30'E	0910	0925	
3	56° 24,26'N 077° 21,05'E	0930	0935	
4	56° 24,42'N 077° 21,34'E	0940	0945	gut
5	56° 24,30'N 077° 20,74'E	0950	0955	gut
6	56° 24,19'N 077° 19,86'E	1010	1015	schlecht
7	56° 24,157'N 077° 20,52'E	1020	1025	schlecht
8	56° 24,30'N 077° 21,07'E	1030	1040	schlecht
9	56° 24,40'N 077° 20,98'E	1050	1100	schlecht gut
10	56° 24,29'N 077° 21,45'E	1103	1110	schlecht
11	56° 24,55'N 077° 23,64'E	1202	1211	schlecht
12	56° 24,36'N 077° 23,27'E	1214	1222	schlecht
13	56° 24,16'N 077° 23,75'E	1227	1236	schlecht
14	56° 24,41'N 077° 23,56'E	1238	1246	schlecht
15	56° 24,25'N 077° 24,08'E	1251	1300	schlecht
16	56° 24,05'N 077° 24,68'E	1302	1311	schlecht
17	56° 24,13'N 077° 25,14'E	1314	1322	schlecht
18	56° 24,81'N 077° 25,05'E	1334	1342	schlecht
19	56° 24,25'N 077° 21,14'E	1400	1409	gut
20	56° 24,35'N 077° 20,65'E	1413	1422	schlecht
21	56° 24,19'N 077° 20,82'E	1426	1436	schlecht
22	56° 24,38'N 077° 21,01'E	1442	1454	gut
23	56° 24,40'N 077° 21,30'E	1501	1511	gut
24	56° 24,25'N 077° 20,81'E	1514	1523	gut
25	56° 24,12'N 077° 20,18'E	1526	1536	gut
26	56° 24,09'N 077° 19,77'E	1541	1552	gut
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Kattegat

FK Littorina

04.08.21

	Posi	Ausgesetzt	Eingeholt	Erfolg
1	56° 30,25'N 011° 50,54'E	1030	1040	gut
2	56° 29,84'N 011° 51,18'E	1044	1053	
3	56° 29,42'N 011° 51,42'E	1055	1107	sehr gut
4	56° 29,03'N 011° 51,56'E	1112	1123	gut
5	56° 29,17'N 011° 51,97'E	1207	1219	gut
6	56° 29,47'N 011° 51,53'E	1230	1240	
7	56° 29,65'N 011° 50,97'E	1245	1259	
8	56° 29,98'N 011° 51,65'E	1304	1314	schlecht
9	56° 30,01'N 011° 50,96'E	1317	1328	schlecht
10	56° 30,14'N 011° 50,29'E	1331	1343	gut
11	56° 30,58'N 011° 50,64'E	1347	1358	
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Kattegat

FK Litterina

05.08.21

	Posi	Ausgesetzt	Eingeholt	Erfolg
1	56°13,10'N 010°57,40'E	08:35	08:44	
2	56°13,14'N 010°56,50'E	08:47	08:56	gut
3	56°13,15'N 010°55,76'E	08:59	09:07	gut
4	56°13,17'N 010°55,17'E	09:11	09:20	gut
5	56°13,13'N 010°59,82'E	09:23	09:32	OK
6	56°13,03'N 010°56,85'E	09:35	09:48	schlecht
7	56°12,93'N 010°57,17'E	09:55	10:04	schlecht
8	56°13,10'N 010°55,93'E	10:10	10:20	schlecht
9	56°07,24'N 010°53,85'E	11:42	11:52	schlecht
10	56°07,02'N 010°54,46'E	11:54	12:05	
11	56°06,87'N 010°55,00'E	12:07	12:17	
12	56°06,11'N 010°54,84'E	12:38	12:51	schlecht
13	56°06,06'N 010°54,83'E	13:00	13:11	gut
14	56°08,87'N 011°09,65'E	14:20	14:25	
15	56°08,95'N 011°09,64'E	14:33	14:40	
16	56°08,79'N 011°09,29'E	14:44	14:52	
17	56°08,66'N 011°09,07'E	14:55	15:03	
18	56°08,79'N 011°09,04'E	15:05	15:13	
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