NOTIFICATION OF PROPOSED RESEARCH CRUISE

GENERAL

Part A

01. Name of research ship: ***M E T E O R*** Cruise No. M85/3

02. Dates of cruise from Reykjavik August 27th 2011 to Cuxhaven September 28th 2011

03. Operating Authority ***Institut für Meereskunde / University of Hamburg***
Bundesstr. 53, D-20146 Hamburg, Germany
Tel.: +49-40-42838-3974 - Fax: +49-40-42838-46 44

04. Owner (if different from para 3) ***Federal Ministry of Education and Research***

05. Particulars of ship:	Name	***METEOR***
	Nationality	***German***
	Overall length	***97,5 metres***
	Maximum draught	***5,6 metres***
	Nett tonnage	***1284.0 NRT***
	Propulsion	***Diesel Electric***
	Call sign	***D B B H***
06. Crew	Name of master	T. Wunderlich
	No. of crew	***max. 34***
07. Scientific personnel:	Name and address of scientist in charge	Saskia Brix, PhD Senckenberg Research Institute Department DZMB (German Centre for Marine Biodiversity Research) c/o Biocentrum Grindel, Martin-Luther-King-Platz 3, 20146 Hamburg, Germany
	Tel./Fax/Telex No.	+49 (0)40428382294/ 3937
	No. of scientists	***max.30***

08. Geographical areas in which ship will operate (with reference in latitude and longitude)

Clockwise around Iceland, starting in Reykjavik (Iceland), ending in Cuxhaven (Germany). Sampling in planned to take place in the Icelandic and Greenland economic zone and the neighbouring deep-sea basins in international waters (Iceland basin, Irminger basin, Arctic Waters) meaning between 60° to 69° N and 10° to 32° W.

09. Brief description of purpose of cruise

This expedition aims to combine classical taxonomic methods with modern aspects of biodiversity research, in particular phylogeography (population genetics and DNA barcoding) and ecological modelling in the climatic sensitive region around Iceland. The sampling area is characterised by several local pecularities like submarine ridges (geographical barriers) and influence of different water masses of different origin. This allows the analysis of factors influencing the distribution and migration of species as well as investigation of the background of biogeographic zonation.

10. Dates and names of intended ports of call

Reykjavik, Iceland for three days in a period from 22nd August – 30th August 2011 (intended so far 25th – 27th August 2011)

11. Any special logistic requirements at ports of call

Normal cargo handling, exchange of crew, bunkering.

DETAIL

Part B

01. Name of research ship Meteor Cruise No. M85/3

02. Dates of cruise from Reykjavik, August 27th 2011 to Cuxhaven, September 28th 2011

03. Purpose of research and general operational methods

This expedition aims to combine classical taxonomic methods with modern aspects of biodiversity research, in particular phylogeography (population genetics and DNA barcoding) and ecological modelling in the climatic sensitive region around Iceland. In total, we are planning to sample 36 station. Most stations are located in the Icelandic economic zone, each station with deployment of the following gear: CTD, Boxcorer (GKG), Multicorer (MUC), Epibenthic sledge (EBS) and Agassiz Trawl (AGT). The gear will be deployed in standardized order (see Table1). Three stations are located in the Greenland economic zone (stations 11,12 and 13, see Table2).

Table 1: Calculation of time needed (hours) for station work according to the depth and deployment of gear. Number in brackets behind the gear indicates the number of replicates (deployments) at each station.

No. of stations	Depth	CTD (1)	GKG (2)	MUC (2)	EBS (1/2)	AGT (1)	Sum hours	Total hours
12 (6 only 1 EBS)	300	0,3	1	1	2,4	1,2	3,6	**63,6**
1	400	0,3	1,2	1,2	2,8	1,4	4,2	**6,9**
2	500	0,4	1,6	1,6	3,2	1,6	4,8	**16,8**
4 (2 only 1 EBS)	800	0,7	2,2	2,2	4,6	2,3	6,9	**43,4**
1	1000	0,8	2,6	2,6	5,4	2,7	8,1	**14,1**
5 (1 EBS each)	1200	1	3	3	3,2	3,2	6,4	**67**
1	1300	1,1	3,2	3,2	6,8	3,4	10,2	**17,7**
5 (1 EBS each)	1800	1,5	4,2	4,2	4,5	4,5	9	**94,5**
2	2200	1,8	5,2	5,2	10,8	5,4	16,2	**56,8**
1	2500	2,1	6	6	12,2	6,1	18,3	**32,4**
2	3000	2,5	7	7	14,4	7,2	21,6	**76,2**

04. Attach chart showing (on an appropriate scale) the geographical area of the intended work, positions of intended stations, tracks of survey lines, positions of moored / seabed equipment.

Table 2: Stationlist indicating revisited BIOICE stations; stations located in the Greenland economic zone in grey.

Station	BIOICE_Nr.	LAT dec	LONG dec	Depth in m
1	2308	63,25033	-22,78950	263
2	2237	63,45167	-24,67917	296
3	2241	63,35117	-25,36300	305
4	2221	63,91683	-25,27317	240
5	new station	63,66774	-27,45399	~ 1200
6	new station	63,11396	-29,63683	~ 1800
7	new station	62,94830	-31,31701	~ 3000
8	2720	64,43000	-26,40333	304

9	2884	65,16333	-27,06167	229
10	new station	64,91246	-28,66658	~ 1300
11	new station	66,71097	-28,80857	~ 400
12	new station	67,38037	-28,23390	~ 300
13	new station	67,41903	-25,44486	~ 1200
14	2575	67,16067	-24,32183	800
15	2581	67,72000	-22,57433	719
16	2136	66,72600	-18,95333	417
17	2762	67,92467	-17,70433	1130
18	new station	68,01252	-15,08313	~ 1200
19	new station	68,02916	-12,40418	~ 1800
20	2030	67,00483	-13,43083	831
21	2019	66,55283	-12,19267	1253
22	2040	66,35883	-13,47800	310
23	2011	65,58350	-11,27950	768
24	new station	65,19644	-12,59836	~ 300
25	2358	64,16667	-11,36667	318
26	3025	63,89917	-12,74267	558
27	new station	63,96588	-14,30220	~ 300
28	3075	62,00317	-15,99950	2192
29	2856	62,34167	-16,98833	2074
30	2849	62,83033	-18,00700	976
31	3504	62,02433	-19,81917	1733
32	new station	60,79483	-20,31300	~ 2500
33	new station	60,13222	-21,59088	~ 3000
34	3167	60,91467	-22,78767	1897
35	3164	61,71000	-22,95833	1741
36	2418	63,16550	-21,20133	256

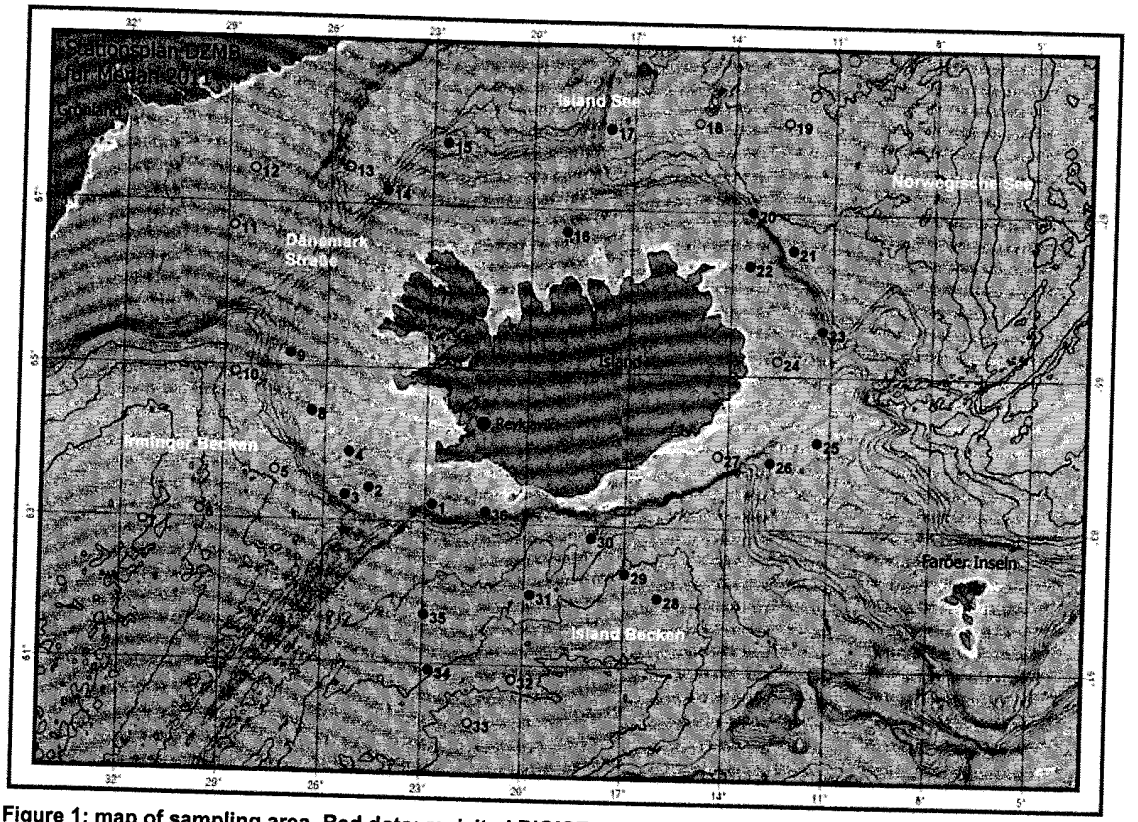

Figure 1: map of sampling area. Red dots: revisited BIOICE stations, yellow dots: stations sampled for the first time. Stations 11,12 and 13 are located in the Greenland economic zone.

05. Types of samples required, e.g. Geological / Water / Plankton / Fish / Radio-activity / Isotope

water, measuring abiotic factors like salinity, temperature with CTD, benthic samples (focus on invertebrate animals), sediment samples

and methods by which samples will be obtained (including dredging / coring / drilling).

pumping, dredging (Agassiz Trawl, Triangle Dredge, Epibenthic sledge) and coring (Multicorer, Box Corer, Van Veen Grab, Shipek Grab).

06. Details of moored equipment:

Dates				
Laying	Recovery	Description	Latitude	Longitude

No moored equipment!

07. Explosives: ***no explosives***

(a) Type and Trade name
(b) Chemical content
(c) Dept of Trade class and stowage
(d) Size
(e) Depth of detonation
(f) Frequency of detonation
(g) Position in latitude and longitude
(h) Dates of detonation

08. Detail and reference of

(a) Any relevant previous / future cruises

The upcoming expedition called IceAGE (Icelandic marine Animals: Genetics and Ecology) is a follow-up project of BIOICE (Benthic Invertebrates of Icelandic Waters). During BIOICE (1991 – 2004), sampling took place during 19 expeditions in the Icelandic economic zone with three research vessels: *Bjarni Sæmundsson, Håkon Mosby* and *Magnus Heinason.* We aim to resample previous BIOICE stations (red dots in the map, see 4).

(b) Any previous published research data relating to the porposed cruise. (Attach separate sheet if necessary.)

Recent examples of publications:

Bird, G. 2010. Tanaidacea (Crustacea, Peracarida of the North Atlantic: the Agathotanaidae of the AFEN, BIOFAR and BIOICE projects, with description of a new species of *Paragathotanais*, Lang. Zootaxa 2730: 1–22.

Brix, S. and J. Svavarsson 2010. Distribution and diversity of desmosomatid and nannoniscid isopods (Crustacea) on the Greenland-Iceland-Faeroe Ridge. – Polar Biology 33: 515–530.

Stransky, B. and J. Svavarsson 2010. Diversity and species composition of peracarids (Crustacea: Malacostraca) on the South Greenland shelf: spatial and temporal variation. – Polar Biology 33: 125–139.

Stransky, B. and J. Svavarsson 2006. *Astacilla boreaphilis* sp. nov. (Crustacea: Isopoda: Valvifera) from shallow and deep North Atlantic waters. Zootaxa 1259: 1–23.

Guðmundsson, G., K. Engelstad, G. Steiner and J. Svavarsson 2003. Diets of four deep-water scaphopod species (Mollusca) in the North Atlantic and the Nordic Seas. – Marine Biology 142: 1103-1112.

Ólafsdóttir, S.H. and J. Svavarsson 2002. Ciliate (Protozoa) epibionts of deep water asellote isopods (Crustacea): pattern and diversity. – Journal of Crustacean Biology 22: 607–618.

Remark: For receiving the complete BIOICE publication list, please contact Guðmundur Helgason (address see below, point 9).

09. Names and addresses of scientists of the coastal state in whose waters the proposed cruise takes place with whom previous contact has been made.

Jörundur Svavarsson Prof.
and Guðmundur Helgason, Ph.D.
Institute of Biology
University of Iceland
Aragata 9
101 Reykjavík
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Dr. Reynir Sveinsson Ph.D.
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10. State:

(a) Whether visitis to the ship in port by scientists of the coastal state concerned will be acceptable.

Yes

(b) Whether it will be acceptable to carry on board an observer from the coastal state for any part of the cruise and dates and ports of embarkation / disembarkation.

Yes

(c) When research data from intended cruise is likely to be made available to the coastal state and if so by what means.

- *Cruise Report* three months after finishing the research cruise

- *Scientific publication* within the following three years

COASTAL STATE: Iceland

SCIENTIFIC EQUIPMENT

11. Complete the following table - SEPARATE COPY FOR EACH COASTAL STATE

(indicate 'YES' or 'NO')

List of all major Marine Scientific Equipment it is proposed to use and indicate waters in which it will be deployed	Fisheries Research within Fishing Limits	Research concerning Continental Shelf out to Coastal State's Margin	Within 3 NM	Between 3 - 12 NM	Between 12 - 50 NM	Between 50 - 200 NM
a) vessel mounted systems: hydroacustic mapping / measuring (incl. ADCP, Parasound and Simrad Swathsounder)	**No**	**Yes**	**No**	**No**	**Yes**	**Yes**
permanent surface water sampling / pumping (incl. Thermosalinograph)	**No**	**No**	**No**	**No**	**Yes**	**Yes**
b) mobile equipment:						
CTD	**No**	**Yes**	**No**	**No**	**Yes**	**Yes**
Agassiz Trawl	**No**	**Yes**	**No**	**No**	**Yes**	**Yes**
Epibenthic Sledge	**No**	**Yes**	**No**	**No**	**Yes**	**Yes**
Multicorer	**No**	**Yes**	**No**	**No**	**Yes**	**Yes**
Boxcorer or grab	**No**	**Yes**	**No**	**No**	**Yes**	**Yes**