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8.

THE "OSHORO MARU" CRUISE 247 EAST OF TSUGARU STRAIT

IN SEPTEMBER 2012

1. Cruise Itinerary

Cruise 247

Departure from Hakodate	Sep.	18,	2012
Bottom trawl (OST1203-OST1205), and start hydrographic research (OS12132)		19	
Finish hydrographic research (OS12134)		20	
Gill-net research (OSSG1201-1-OSSG1201-5)		21	
Return to Hakodate and Departure from Hakodate		23	
Bottom trawl (OST1206-OST1207), and start hydrographic research (OS12135)		24	
Finish hydrographic research (OS12137)		25	
Gill-net research (OSSG1202-1-OSSG1202-6)		26	
Return to Hakodate		28	

Total coverage 608.8 miles

2. Vessel Personnel

Crew: Captain: Associate Professor Shogo Takagi

And 30 persons

Research Staff: Professor (Laboratory of Marine Environmental Science)
Shigeru Montani

Associate Professor (Laboratory of Marine Environmental Science)
Isao Kudo

Professor (Laboratory of Marine Bio-resources Science)
Tetsuya Takatsu

Associate Professor (Laboratory of Marine Ecology)
Yutaka Watanuki

Associate Professor (Laboratory of Marine Bio-resources Ecology)
Takashi Matsuishi

Associate Professor (Laboratory of Marine Biology and Biodiversity)
Hisashi Imamura

Associate Professor(Laboratory of Marine Biodiversity)
Atsushi Yamaguchi

Instructor (Museum, Hokkaido university)
Toshio Kawai

Teaching Assistant: 9 persons

Under Graduate Students: 60 persons

Total 108 persons

3. Items of Training and Research

A short cruise to conduct shipboard training in hydrographic observations, plankton samplings, sighting survey of marine mammals, and biological processing of trawl catch for undergraduate students in the Department of Marine Biological Science.

Hydrographic observations: (Observation of Temperature, Salinity, and Computed Dynamic Depth Anomaly)

Hydrographic work on deck and the data processing were made by the deck officers, Science officer, crews, research staff and cadets of the “Oshoro maru”. Temperature and salinity were measured by CTD (Seabird SBE-9Plus and

SBE-19Plus). Water and Plankton sampling were also carried out at almost hydrographic stations.

Fig. 1, Table 1, 2

Bottom trawl observations:

Five operations of the stern otter bottom trawl were carried out. These operations were supervised by the captain, Deck officers, Science officer, crews, research staffs, and cadets were engaged in the work.

Table 3, 4

Saury gillnets research:

Eleven operations of gillnet Researches were carried out. These operations were supervised by the captain, Deck officers, Science officer, crews, research staffs, and cadets were engaged in the work.

Table 5

Fig 1. Oceanographic Stations

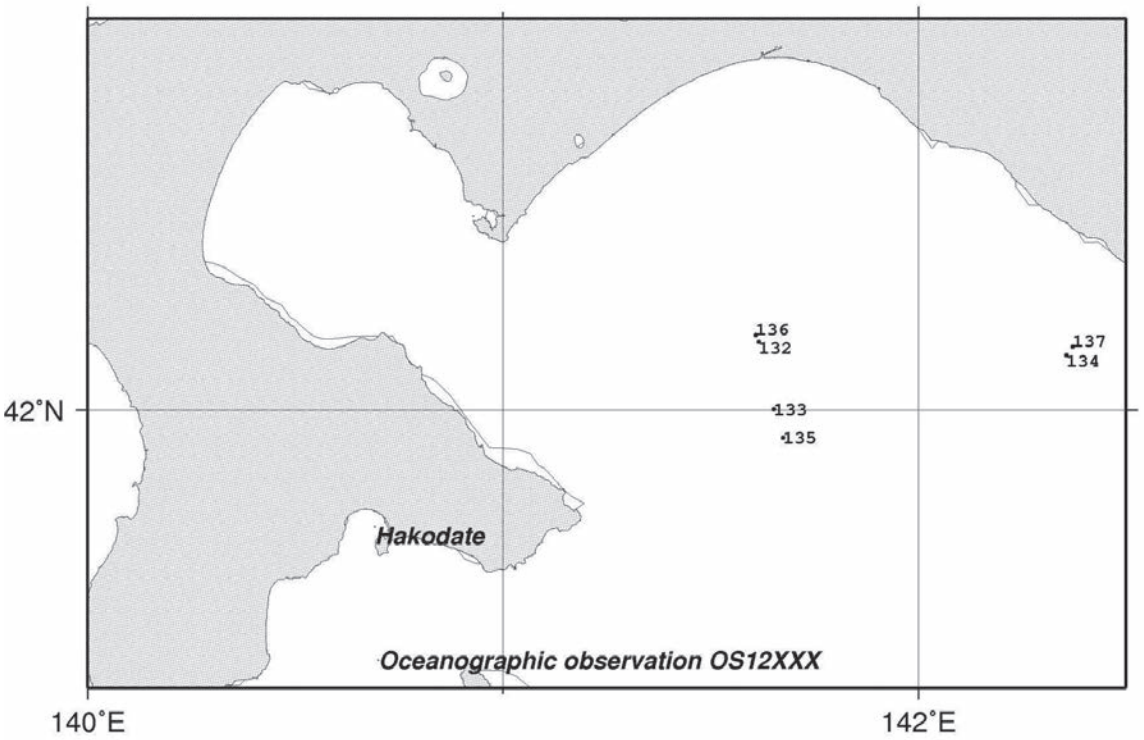

Table 1. List of Oceanographic station

Station	Lat.	Long.	Date (GMT)	Hour (GMT)	T.Z.	Depth	Col.	Tr.	SST	Wr.	Gear
OS12132	42-07.36N	141-36.98E	9/19	7:37	9	701	-	-	-	b	9Plus-0769
OS12133	42-00.12N	141-39.12E	9/19	11:49	9	801	-	-	-	-	9Plus-0769
OS12134	42-05.96N	142-21.41E	9/20	7:34	9	734	-	-	-	-	9Plus-0769
OS12135	41-57.06N	141-40.47E	9/24	7:40	9	827	-	-	21.5	c	9Plus-0769
OS12136	42-08.10N	141-36.55E	9/24	11:26	9	688	-	-	23.6	c	19Plus-4636
OS12137	42-06.86N	142-22.34E	9/24	7:35	9	645	-	-	22.7	r	19Plus-4636

Table 2. Oceanographic data

Station OS12132
Latitude 42-07.37N
Longitude 141-36.98E
Depth(m) 701m

Press.	Temp.	Sal.	SIG-T
5	23.828	33.470	22.534
10	19.707	33.785	23.912
20	15.339	34.110	25.211
30	12.697	33.776	25.504
40	12.292	34.132	25.859
50	11.929	34.248	26.018
75	11.390	34.221	26.098
100	10.262	34.130	26.228
125	8.827	33.981	26.348
150	6.730	33.737	26.460
175	6.816	33.813	26.508
200	5.343	33.650	26.565
250	4.043	33.568	26.642
300	3.611	33.625	26.731
400	3.298	33.770	26.876
500	3.472	33.949	27.003
600	3.515	34.088	27.109

Station OS12133
Latitude 42-00.11N
Longitude 141-39.15E
Depth(m) 801m

Press.	Temp.	Sal.	SIG-T
5	22.772	33.621	22.953
10	23.224	33.576	22.790
20	17.660	34.136	24.693
30	15.083	34.200	25.337
40	12.727	34.151	25.789
50	11.286	34.158	26.068
75	10.409	34.184	26.244
100	8.973	33.989	26.331
125	6.837	33.791	26.488
150	4.348	33.463	26.528
175	3.774	33.448	26.574
200	3.384	33.426	26.594
250	2.424	33.415	26.669
300	2.972	33.563	26.741
400	3.168	33.772	26.890
500	3.562	34.006	27.039
600	3.536	34.110	27.125
700	3.378	34.211	27.220

Station OS12134
Latitude 42-05.97N
Longitude 142-21.43E
Depth(m) 734m

Press.	Temp.	Sal.	SIG-T
5	24.809	33.531	22.289
10	22.283	33.558	23.044
20	18.002	33.775	24.334
30	15.198	34.072	25.213
40	13.605	34.148	25.610
50	12.970	34.185	25.767
75	11.233	34.187	26.100
100	9.303	33.983	26.273
125	8.323	33.924	26.380
150	5.570	33.597	26.497
175	5.014	33.582	26.550
200	3.951	33.485	26.586
250	2.362	33.456	26.706
300	3.147	33.634	26.781
400	3.054	33.793	26.917
500	3.556	34.003	27.037
600	3.488	34.122	27.138
700	3.322	34.221	27.234

Station OS12135
Latitude 41-57.07N
Longitude 141-40.48E
Depth(m) 827m

Press.	Temp.	Sal.	SIG-T
5	21.838	33.699	23.275
10	21.597	33.724	23.360
20	18.466	33.998	24.390
30	15.399	34.119	25.205
40	13.924	34.153	25.548
50	12.765	34.177	25.802
75	11.010	34.156	26.117
100	10.907	34.155	26.134
125	9.369	34.066	26.327
150	8.344	34.002	26.439
175	7.133	33.836	26.483
200	4.969	33.599	26.568
250	4.665	33.676	26.663
300	3.075	33.566	26.733
400	3.154	33.759	26.881
500	3.473	33.951	27.004
600	3.522	34.071	27.094
700	3.417	34.165	27.180
800	3.214	34.247	27.264

Station OS12136
Latitude 42-08.10N
Longitude 141-36.55E
Depth(m) 688m

Press.	Temp.	Sal.	SIG-T
20	19.438	33.870	24.046
30	16.301	34.067	24.961
50	11.794	33.849	25.733
75	11.189	34.164	26.090
100	9.947	34.106	26.263
150	8.670	34.037	26.416
200	6.894	33.834	26.515
300	3.657	33.598	26.705
400	3.269	33.736	26.852
500	3.392	33.909	26.978
600	3.541	34.062	27.086

Station OS12137
Latitude 42-06.86N
Longitude 142-22.34E
Depth(m) 645m

Press.	Temp.	Sal.	SIG-T
20	23.282	33.528	22.737
30	21.47	33.694	23.372
50	16.765	34.006	24.807
75	12.564	34.034	25.731
100	11.497	34.121	26.001
150	9.967	34.107	26.26
200	7.841	33.933	26.459
300	2.746	33.52	26.726
400	3.24	33.766	26.878
500	3.486	33.953	27.004
600	3.521	34.069	27.093

Table 3: Data on Bottom trawl research during the Oshoromaru Cruise#247

No. of research	Date and time of net tow (S.M.T.*1)	Position		T.D.*2	D.S.*3	Speed of tow (K't)	Bottom depth (m)	Wr.*4	Wind	S.T.*5 (℃)
		Lat. (N)	Long. (E)							
OST1203	Sep. 19 0625-1005	41-53.8	141-41.6	+9h	320	4.5	865	c	SSE-5	24.7
OST1204	Sep. 19 1030-1325	42-03.8	141-38.2	+9h	335-000	4.5	780-670	c	SW-4	23.1
OST1205	Sep. 19 1335-1615	42-11.8	141-36.9	+9h	185	3.5	680-717	c	SW-4	23.8
OST1206	Sep. 24 1005-1255	42-12.0	141-35.8	+9h	170	3.5	620	bc	NE-5	22.4
OST1207	Sep. 24 1308-1610	42-02.5	141-36.5	+9h	160	3.2	734	bc	calm	21.9

*1 S.M.T. : Ship's Mean Time.
*2 T.D. : Time Difference between Greenwich Mean Time (G.M.T.) and Ship's Mean Time (S.M.T.).
*3 D.S. : Direction of tow.
*4 Wr. : Weather (bc: 25-75% clouded, c: over 75-99% clouded).
*5 S.T. : Surface temperature

Table 4. Data on catches by bottom trawl research

Japanese name	Scientific Name	OST1203		OST1204		OST1205		OST1206		OST1207	
		Number	Weight (kg)	Number	Weight (kg)	Number	Weight (kg)	Number	Weight (kg)	Number	Weight (kg)
Gangiei-rui	*Bathyraja sp.*	3	6.50	9	1.99			2	0.12	2	1.22
Sokoganngiei	*Bathyraja bergi*	-	-	-	-	3	0.16	-	-	-	-
Shigiunagi	*Nemichthys scolopaceus*	1	0.10	-	-	-	-	-	-	-	-
Irakoanago	*Synaphobranchus kaupii*	16	11.30	17	10.57	-	6.50	19	7.64	18	7.50
Kurosokoiwashi	*Diaphus watasei*	-	-	-	-	1	0.30	-	-	-	-
Yokoeso-rui	Gonostomatidae sp.	-	-	-	-	2	0.03	-	-	-	-
Hoteieso	*Photonectes albipennis*	-	-	-	-	-	-	1	0.17	-	-
Hadakahoteieso	*Tactostoma macropus*	1	0.06	-	-	-	-	-	-	-	-
Mamehadaka	*Lampanyctus jordani*	-	-	-	-	8	0.20	29	0.50	13	0.30
Mikadohadaka	*Nannobrachium regale*	6	0.45	-	-	3	0.20	1	0.07	2	0.17
Hadakaiwashi-ryu	*Diaphus watasei*	-	-	5	0.10	-	-	-	-	-	-
Karasudara	*Halargyreus johnsonii*	2	0.40	-	-	-	-	-	-	1	0.16
Kanadadara	*Antimora microlepis*	369	157.00	28	7.77	-	6.70	15	4.00	46	15.00
Itohikidara	*Laemonema longipes*	134	76.66	142	96.50	174	110.00	175	105.00	162	92.00
Munedara	*Coryphaenoides pectoralis*	17	13.50	1	1.09	1	3.90	-	-	5	7.70
Ibarahige	*Coryphaenoides acrolepis*	-	-	1	0.17	-	-	-	-	2	0.24
Karafutosokodara	*Coryphaenoides cinereus*	50	16.00	56	13.00	48	11.00	30	8.50	523	105.50
Onikinme	*Anoplogaster cornuta*	1	0.30	-	-	-	-	-	-	-	-
Ibodai-rui	Centrolophidae sp.	-	-	1	0.40	-	-	-	-	-	-
Nezumiginpo	*Lumpenella longirostris*	3	0.16	1	0.10	3	0.28	11	0.45	8	0.41
Genge-rui	*Zoarcidae sp.*	-	-	-	-	-	-	280	75.50	561	240.50
Shirogenge	*Bothrocana molle*	141	143.00	143	41.50	160	58.80	-	-	-	-
Kantenngenge	*Bothorocara tanakae*	-	-	14	4.67	8	4.00	-	-	-	-
Nyuudoukajika	*Psychrolutes phrictus*	1	0.70	-	-	-	-	-	-	-	-
Kobushikazika	*Malacocottus zonurus*	-	-	2	0.13	-	-	-	-	-	-
Kichiji	*Sebastolobus macrochir*	189	31.50	146	29.50	104	22.50	103	22.50	88	14.70
Ganko	*Dasycottus setiger*	3	0.46	8	0.47	2	0.07	3	0.37	3	0.28
Hoteiuo	*Aptocyclus ventricosus*	-	-	-	-	-	-	1	0.05	-	-
Hirainkiuo	*Paraliparis grandis*	-	-	-	-	1	0.17	2	0.96	-	-
Aburagarei	*Atheresthes evermanni*	-	-	1	6.60	-	-	-	-	-	-
Samegarei	*Clidoderma asperrimum*	-	-	3	4.70	-	-	-	-	-	-
Tako-rui	*Octopuses*	29	10.81	22	5.12	25	5.00	31	5.40	13	6.50
Mendako spp.	*Opisthoteuthis spp.*	-	-	4	1.21	-	-	-	-	-	-
Ika-rui	*Squids*	32	10.36	7	1.77	6	2.16	14	5.40	22	9.00
Ezobai spp.	*Buccinidae spp.*	-	-	-	12.07	16	1.80	27	1.30	-	-
Benizuwaigani	*Chionoecetes japonicus*	21	10.10	26	12.50	16	7.00	26	14.40	13	6.30

Table 5. Data on floating gill net research during the "Oshoro Maru" Cruise #247

No. of research		OSSG 1201-01	OSSG 1201-02	OSSG 1201-03	OSSG 1201-04	OSSG 1201-05
Date		21-Sep	21-Sep	21-Sep	21-Sep	21-Sep
position of net set	Lat. (N)	42-29.7	42-29.7	42-29.7	42-29.7	42-29.7
	Long. (E)	144-07.0	144-07.0	144-07.0	144-07.0	144-07.0
Time(S.M.T.*1)	net set	2030	2135	2207	2240	2335
	net houl	2040	2142	2216	2250	2345
Mesh size(mm)		42	42	42	42	42
Wr.*2		o	o	o	c	c
S.T.*3 (℃)		17.8	17.8	17.8	17.8	17.8
Wind (force)		calm	NW-2	NW-2	NNW-2	NNW-2
Pacific saury		-	-	-	-	-
Japanese sardine		420	33	69	100	181
Mackerels		18	83	8	10	4

No. of research		OSSG 1202-01	OSSG 1202-02	OSSG 1202-03	OSSG 1202-04	OSSG 1202-05	OSSG 1202-06
Date		26-Sep	26-Sep	26-Sep	26-Sep	26-Sep	26-Sep
position of net set	Lat. (N)	41-42.4	41-42.4	41-42.4	41-42.4	41-42.4	41-42.4
	Long. (E)	143-35.6	143-35.6	143-35.6	143-35.6	143-35.6	143-35.6
Time(S.M.T.*1)	net set	2030	2118	2151	2235	2258	2338
	net houl	2039	2126	2203	2240	2328	2350
Mesh size(mm)		42	42	42	42	42	42
Wr.*2		c	c	c	c	c	o
S.T.*3 (℃)		18.0	17.9	17.9	17.9	17.9	18.0
Wind (force)		ENE-3	East-3	East-3	East-3	East-2	East-2
Pacific saury		4	-	-	2	64	19
Japanese sardine		427	238	17	2	73	26
Mackerels		9	9	21	6	8	41

*1 S.M.T. : Ship's Mean Time.
*2 Wr. : Weather (bc: 25-75% clouded, c: over 75-99% clouded, o: 100% clouded, r: rain, d: drizzling rain, f: fog).
*3 S.T. : Surface temperature