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11.

THE “OSHORO MARU” CRUISE 250 TO EAST OF HONSHU AND THE OGASAWARA ISLANDS

IN DECEMBER 2012

1. Cruise Itinerary

Cruise 250

Departure from Hakodate, and start hydrographic research (OS12156)	Dec.	8,	2012
Mid trawl (OSMT1208)		9	
Arrival at Tokyo		10	
Departure from Tokyo		11	
Arrival at Chichishima		13	
Departure from Chichishima and start vertical long-line research (OSVL1201)		15	
Finish hydrographic research (OS12162) and vertical long-line research (OSVL1204)		17	
Return to Tokyo		19	
Total coverage 1730.8 miles			

2. Vessel Personnel

Crew:	Captain:	Associate Professor	Shogo Takagi
			And 29 persons
	Professor (Department of Marine Science and Resources,Nihon University)		
	Tokyo - Tokyo		Takahito Kojima
	Associate Professor (Teikyo University of Science and Technology)		
	Tokyo - Tokyo		Kyoichi Mori
	Instructor (Department of Marine Science and Resources,Nihon University)		
	Tokyo - Tokyo		Yuya Makiguchi
Guest Scientist:			
	Professor (Fisheries Biology and Ecology, Graduate School of Agricultural Science, Tohoku University)		
	Hakodate - Tokyo		Satoshi Katayama
	Teaching Assistant:		2 persons
	Graduate Students:		1 persons
	Under Graduate Students:		33 persons
Mitsui Engineering & Shipbuilding staff	Hakodate - Tokyo		8 persons
Unit chief, Fisheries of Hokkaido University	Hakodate - Tokyo		Takatashi Yamauchi
Associate Professor (Ushio Maru, Fisheries of Hokkaido University)	Hakodate - Tokyo		Yoshihiko Kamei
Total 50persons			

3. Items of Research

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

Hydrographic work on deck and the data processing were made by Science officer, the deck officers, crews, research staff and cadets of the “*Oshoromaru*”. 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

Mid trawl observations:

One operation of the stern otter mid-water trawl were carried out. These operations were supervised by the captain, and were conducted by deck officer, Science officer, crew, research staff and cadets.

Table 3, 4

Biological research for fishes caught by vertical long-line:

Four operations using a vertical long-line were performed. The gear comprised by three types of main line (400,500,600m) with a weight attached to one end, a buoy attached to the other end, and six branch lines (18m-for tuna and 4m-for squid) attached to the main line. These operations were supervised by the captain, Deck officers, Science officer, crews, cadets, and research staffs were engaged in the work.

Table 5

Fig 1.Oceanographic Stations

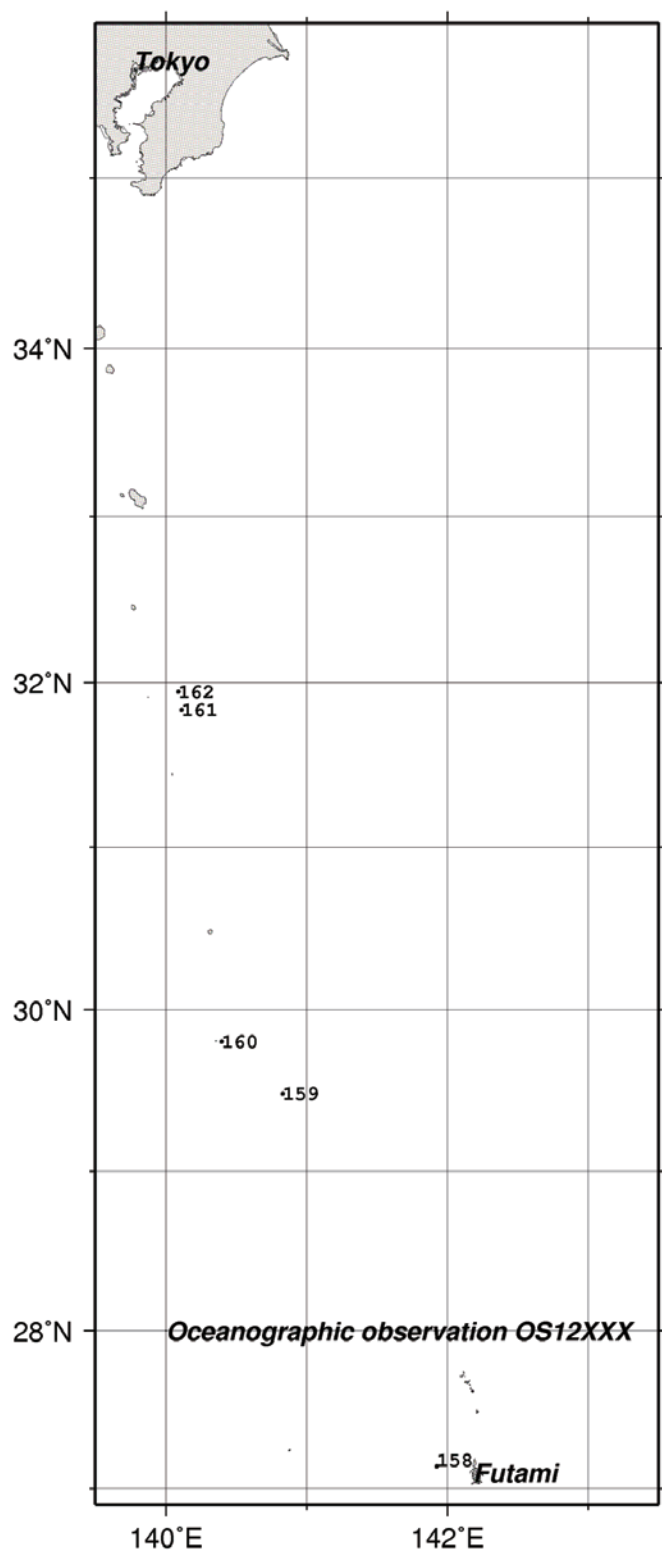


Table 1. List of Oceanographic station

Station	Lat.	Long.	Date (GMT)	Hour (GMT)	T.Z.	Depth	Col.	Tr.	SST	Wr.	Gear
OS12158	27-08.58N	141-55.46E	12月15日	3:18	9	2008	2	29	22.7	bc	9Plus-0769
OS12159	29-28.96N	140-49.86E	12/15	22:09	9	3735	2	19.7	22.1	bc	9Plus-0769
OS12160	29-48.42N	140-23.86E	12/16	5:56	9	1047	2	21	21.8	bc	9Plus-0769
OS12161	31-50.21N	140-06.83E	12/16	22:03	9	1660	2	23.7	21.7	o	9Plus-0769
OS12162	31-56.74N	140-05.42E	12/17	3:53	9	1505	-	-	21.6	bc	9Plus-0769

Table 2. Oceanographic data

Station OS12158				Station OS12159				Station OS12160			
Latitude 27-08.57N				Latitude 29-29.03N				Latitude 29-48.45N			
Longitude 141-55.43E				Longitude 140-49.86E				Longitude 140-23.87E			
Depth(m) 2008m				Depth(m) 3735m				Depth(m) 1047m			
Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T
5	22.078	34.614	23.902	5	21.408	34.658	24.122	5	21.276	34.613	24.125
10	22.082	34.614	23.902	10	21.405	34.658	24.123	10	21.275	34.616	24.126
20	22.068	34.613	23.905	20	21.410	34.658	24.122	20	21.277	34.616	24.126
30	22.055	34.614	23.909	30	21.411	34.658	24.121	30	21.275	34.619	24.129
40	22.054	34.615	23.910	40	21.416	34.658	24.120	40	21.253	34.622	24.137
50	22.058	34.617	23.911	50	21.417	34.658	24.120	50	21.192	34.618	24.151
75	21.967	34.646	23.958	75	21.422	34.658	24.118	75	21.069	34.610	24.179
100	20.805	34.804	24.398	100	21.418	34.664	24.124	100	20.818	34.589	24.230
125	19.346	34.797	24.777	125	21.101	34.747	24.274	125	20.261	34.545	24.346
150	18.408	34.767	24.992	150	20.045	34.812	24.607	150	19.738	34.601	24.526
175	17.896	34.740	25.098	175	19.335	34.801	24.783	175	19.131	34.698	24.757
200	17.814	34.736	25.115	200	18.948	34.789	24.873	200	18.250	34.722	24.997
250	16.945	34.689	25.289	250	18.250	34.753	25.021	250	16.654	34.664	25.338
300	15.659	34.607	25.523	300	17.159	34.695	25.243	300	14.969	34.555	25.635
400	12.592	34.418	26.023	400	14.941	34.558	25.644	400	10.283	34.282	26.343
500	9.971	34.266	26.384	500	11.323	34.334	26.198	500	8.414	34.197	26.581
600	7.431	34.164	26.700	600	8.400	34.214	26.596				
700	5.374	34.166	26.971	700	6.039	34.168	26.890				
800	4.646	34.225	27.101	800	5.340	34.230	27.025				
900	4.035	34.283	27.213	900	4.412	34.287	27.175				
1000	3.709	34.329	27.282	1000	3.826	34.336	27.276				

Station OS12161				Station OS12162			
Latitude 31-50.22N				Latitude 31-56.75N			
Longitude 140-06.84E				Longitude 140-05.47E			
Depth(m) 1660m				Depth(m) 1505m			
Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T
5	21.156	34.640	24.177	5	21.004	34.661	24.235
10	21.155	34.640	24.177	10	21.008	34.661	24.234
20	21.155	34.640	24.178	20	21.009	34.661	24.233
30	21.131	34.639	24.183	30	21.010	34.661	24.233
40	21.128	34.638	24.184	40	21.011	34.662	24.234
50	21.123	34.638	24.185	50	21.003	34.663	24.236
75	21.122	34.638	24.185	75	20.993	34.665	24.241
100	21.115	34.640	24.189	100	20.955	34.670	24.255
125	21.036	34.660	24.225	125	20.723	34.705	24.344
150	20.523	34.755	24.436	150	19.410	34.789	24.754
175	19.358	34.770	24.753	175	18.727	34.764	24.910
200	18.295	34.727	24.990	200	18.207	34.754	25.032
250	17.483	34.695	25.164	250	17.603	34.724	25.158
300	16.675	34.668	25.336	300	16.986	34.689	25.279
400	15.048	34.566	25.627	400	15.319	34.584	25.581
500	12.821	34.434	25.990	500	12.353	34.401	26.056
600	8.975	34.250	26.535	600	8.940	34.250	26.540
700	6.661	34.219	26.850	700	7.104	34.238	26.804
800	5.010	34.268	27.094	800	5.820	34.260	26.991
900	4.167	34.345	27.248	900	4.514	34.333	27.201
1000	3.567	34.392	27.346	1000	3.805	34.381	27.313

Table 3: Data on mid trawl research during the Oshoromaru Cruise#250

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)	net depth (m)	Wr.*4	Wind	S.T.*5 (°C)
		Lat. (N)	Long. (E)							
OST1208	Dec. 9 0705-0905	37-59.9	141-50.3	9h	170	4.5	0-230-100-0	bc	WNW-2	15.3

*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).

*5 S.T. : Surface temperature

Table 4: Data on catches by mid-water trawl research

Species	Scientific Name	OSMT 1208	
		Number	Weight (g)
Japanese pearlshides	<i>Maurolicus japonicus</i>	1	600
Flying squid	<i>Ommastrephes bartramii</i>	125	100

Table 5 Data on vertical long line research

No. of research		OSVL 1201-01	OSVL 1201-02	OSVL 1201-03	OSVL 1201-04	OSVL 1201-05	OSVL 1201-06
Date		15-Dec					
position of line set	Lat. (N)	27-07.3	27-07.5	27-07.8	27-08.0	27-08.3	27-08.5
	Long. (E)	141-57.1	141-56.9	141-56.6	141-56.4	141-56.2	141-55.9
Time	Line set	1135	1140	1144	1150	1154	1159
(S.M.T.)	Line haul	1535	1514	1455	1438	1415	1405
Length of main line(m)		500	500	600	500	600	500
Depth(m)		1460					
Surface temp. (°C)		22.0					
Wether		bc					
Wind		SE-6					
Bigeye tuna	1		1				
Pelagic thresher	1	1					
Flying squid	2			1			1
Rhomboid squid	1		1				
No. of research		OSVL 1202-01	OSVL 1202-02	OSVL 1202-03	OSVL 1202-04	OSVL 1202-05	OSVL 1202-06
Date		16-Dec					
position of line set	Lat. (N)	29-26.4	19-26.8	29-27.0	29-27.4	29-27.6	29-28.0
	Long. (E)	140-47.4	140-47.7	140-48.0	140-48.3	140-48.5	140-48.8
Time	Line set	0625	0630	0635	0640	0645	0650
(S.M.T.)	Line haul	1119	1057	1036	1016	0955	0930
Length of main line(m)		500	500	400	500	600	500
Depth(m)		2780-3400					
Surface temp. (°C)		21.3					
Wether		bc					
Wind		SW-5					
Sickle pomfret	1					1	
Flying squid	7		2		2	1	2
Rhomboid squid	1						1
No. of research		OSVL 1203-01	OSVL 1203-02	OSVL 1203-03	OSVL 1203-04	OSVL 1203-05	OSVL 1203-06
Date		17-Dec					
position of line set	Lat. (N)	31-48.1	31-48.3	31-48.6	48-48.8	31-49.1	31-49.4
	Long. (E)	140-07.4	140-07.4	140-07.3	140-07.3	140-07.2	140-07.2
Time	Line set	0620	0625	0631	0635	0640	0645
(S.M.T.)	Line haul	1054	1038	1018	1003	0945	0930
Length of main line(m)		500	500	400	500	600	500
Depth(m)		1744-1666					
Surface temp. (°C)		21.0					
Wether		c					
Wind		SSE-3					
noting							
No. of research		OSVL 1204-01	OSVL 1204-02	OSVL 1204-03	OSVL 1204-04	OSVL 1204-05	OSVL 1204-06
Date		17-Dec					
position of line set	Lat. (N)	31-57.2	31-57.2	31-57.1	31-57.1	31-57.0	31-57.0
	Long. (E)	140-02.9	140-03.1	140-03.3	140-03.6	140-03.9	140-04.1
Time	Line set	1158	1203	1209	1213	1217	1221
(S.M.T.)	Line haul	1411	1433	1454	1509	1527	1550
Length of main line(m)		500	500	500	400	500	500
Depth(m)		1296					
Surface temp. (°C)		20.7					
Wether		c					
Wind		West-4					
Sickle pomfret	1						1
Flying squid	3	1	1			1	