II. GH 75-5 CRUISE

July 16th-August 22nd, 1975

II-1. GENERAL REMARKS

By Eiichi Honza

Introduction

The investigation was carried out NE of the Ryukyu Island arc system as an extensional survey of the GH 75-1 cruise. The survey trackes by reflection methods were selected to cross approximately normal to the extensional direction of the island arc. Sampling sites by dredge and piston corer were selected for correlation of the sedimentary layers with that of reflection methods, to obtain volcanic material from the seamounts and hills in the Okinawa Trough and turbidites from the Okinawa Trough and Ryukyu Trench.

Investigation of the volcanic morphology was also carried out in Kagoshima Bay during the later period of the cruise where students under the O.T.C.A. training programme joined the survey.

Outline of the cruise

The investigation was carried out by six scientists of the Geological Survey of Japan aboard the "Hakurei-Maru" during the full period of the cruise. Two scientists of the G.S.J. joined the survey at Kagoshima Bay during a later period of the cruise for several days. A scientist of G.S.J., one official of O.T.C.A., and nine students from foreign countries who were under a training course by the O.T.C.A. also joined with the survey for marine geological and geophysical training aboard during the later phase of the cruise in Kagoshima Bay.

A professor of Wakayama University joined with the survey for sedimentological study of turbidites. Eight graduate and undergraduate students assisted the survey during the cruise from the beginning to dwelling at Kagoshima Port. The scientific staff are listed in Table II-1-1.

The vessel sailed from Funabashi Port on the 16th of July, 1975, and began the survey the following day after deperture in the Nankai Trough. The cruise ended on return to Funabashi Port on the 22nd of August.

The cruise was first planned to have an exhibition of the ship at Okinawa EXPO at the EXPO Port of Okinawa Island for several days. However, because of typhoon this plan was reduced to three days duration. The survey was also interrupted several times by typhoons (Table II-1-2 and Appendix II). 6,200.1 nautical miles were covered during the cruise.

The survey covered the remaining northern area of the Ryukyu Island arc system as an extension of the GH 75-1 cruise (Fig. II-1-1).

Table II-1-1 Scientific staff aboard

	Name	Organization	Speciality
	Eiichi HONZA	G.S.J.	Chief scientist, geology
**	Junsuke CHUJO	G.S.J.	Co-chief scientist, geophysics
	Kouji ONODERA	G.S.J.	Vice-chief scientist, geomorphology
**	Yasumasa KINOSHITA	G.S.J.	Scientist, geology
	Mitsuteru MIYAZAKI	G.S.J.	Scientist, geophysics
	Makoto YUASA	G.S.J.	Scientist, mineralogy
	Kensaku TAMAKI	G.S.J.	Scientist, geology
	Fumitoshi MURAKAMI	G.S.J.	Scientist, geophysics
**	Takeo MATSUDA	G.S.J.	Scientist, geophysics
*	Hidekazu TOKUYAMA	G.S.J.	Technical assistant
*	Motoharu KOBA	G.S.J.	Technical assistant
*	Yoshimasa KURODA	G.S.J.	Technical assistant
*	Masaaki OTEKI	G.S.J.	Technical assistant
*	Hiroshi YOSHIE	G.S.J.	Technical assistant
*	Seiichiro UEHARA	G.S.J.	Technical assistant
*	Kyoko YASUDA	G.S.J.	Technical assistant
*	Kayoko YAMANAKA	G.S.J.	Technical assistant
***	Tetsuro HARATA	Wakayama U.	Professor, geology
**	Takeo HIRANO	OTCA	Official, training manager
**	Nine Students	OTCA	

* Funabashi-Kagoshima
** Kagoshima-Funabashi
*** Funabashi-Okinawa

Table II-1-2 Schedule of the cruise

July	16	Lv. Funabashi (13: 00)
		Geological and geophysical survey in the Shikoku basin and in the northern area of the Ryukyu islands.
July	19	Emergent put in Kagoshima (19: 00–21: 00)
		Geological and geophysical survey in the northern area of the Ryukyu islands
July	27	Ar. at Koniya (09: 00)
		Take refuge by typhoon
July	30	Lv. Koniya (15: 30)
		Geological and geophysical survey in the northern area of the Ryukyu islands
Aug.	2	Take refuge in Satsukawa bay by typhoon (18: 00)
Aug.	4	Lv. Satsukawa bay (09: 06)
		Geological and geophysical survey in the northern area of the Ryukyu islands
Aug.	9	Ar. EXPO Port in Okinawa island
		Open house
Aug.	11	Shift to Unten Port for taking refuge by typhoon (14: 00–17: 00)
Aug.	13	Lv. Unten Port (07: 30)
		Geological and geophysical survey in the Daito ridges
Aug.	15	Take refuge in Koniya by typhoon (10: 30)
Aug.	17	Lv. Koniya (08: 00)
Aug.	18	Ar. at Kagoshima (12: 00)
Aug.	19	Lv. Kagoshima (09: 00)
		Geological and geophysical survey in the Kagoshima bay and in the Shikoku basin
Aug.	22	Ar. at Funabashi (09: 30)

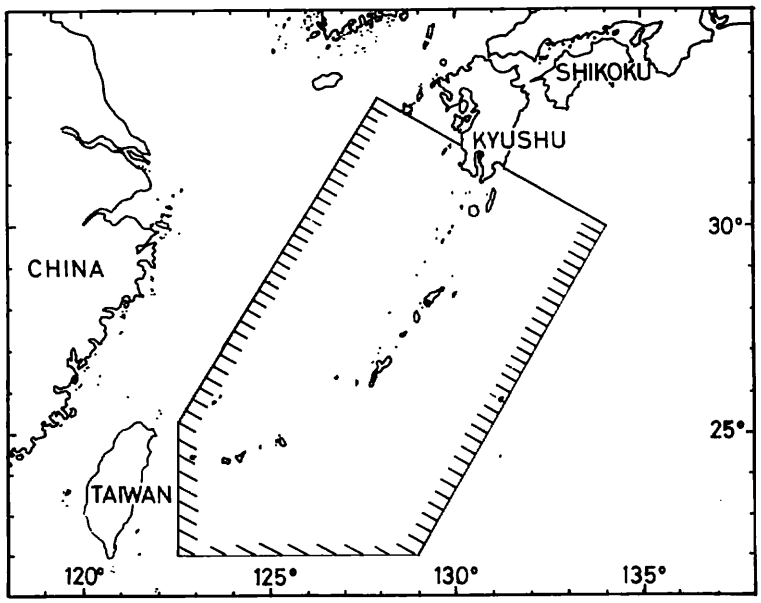

Fig. II–1–1 The surveyed area.

The survey methods and instrumentations are almost the same as that used on the GH 75–1 cruise which are given in Table I–1–3. The results of stationary observations are listed in Table II–1–3.

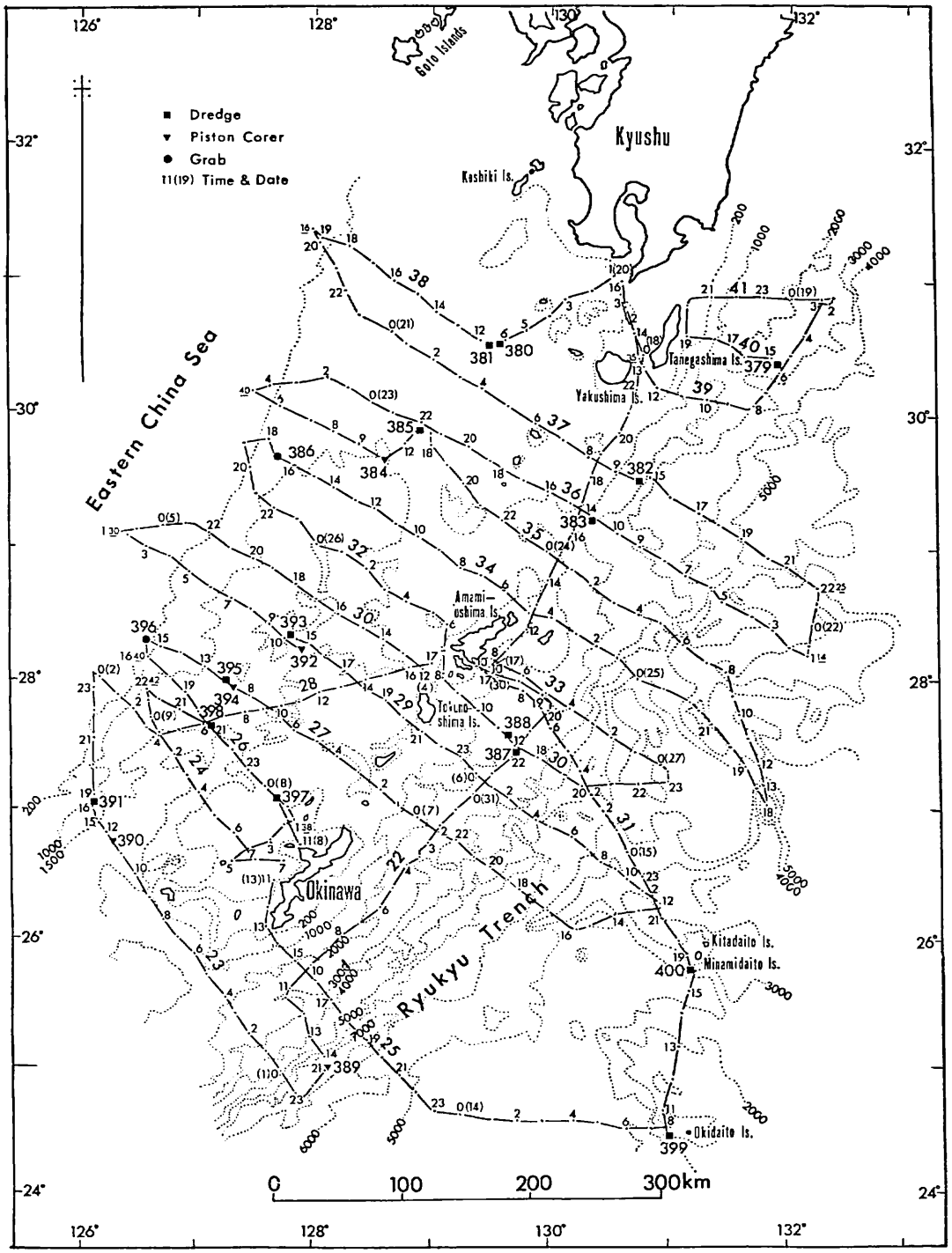

Fig. II-1-2 Sampling sites and tracks of geophysical surveys.

Table II-1-3 Results of stationary observations

St. No.	Sample No.	Date	Time	Position		Depth (m)		Area and topography	Samples	Remarks
				Lat. N	Long. E					
379	D 122	July 18	13: 31 13: 54	30°22′ 30°22.3′	131°53′ 131°53.5′	2550 2560	cylinder type and chain bag type dredges	The east of Tanega-Shima Isl., on the slope of Ryukyu Trench	fine sand bearing brownish gray mud. Scoria and pumice	
380	D 123	20	8: 40 8: 55	30°30.4′ ditto	129°33.3′ ditto	700 690	ditto	The west of Yakushima Isl. on the foot of seamount.	medium sand involving many shell fragments and foraminifera	
381	D 124	20	10: 14 10: 59	30°29.5′ 30°29.4′	129°24.2′ 129°29.2′	427 515	ditto	West flank of seamount above	olivine bearing augite(?)-hypersthene andesite (basement rock?). Shell sandstone, medium-grained brawn sandstone and pebbles. coral, shell, sponge	fuse wire of chain bag type dredge was broken
382	D 125	21	14: 01 14: 05	29°32.0′	130°43.0′	1650	ditto	Continental slope of Ryukyu Trench	light greenish and brawnish gray mud involving medium-grained sand (volcanic?) and foraminifera, rock fragment bearing scoria	
383	D 126	22	12: 09 13: 13	29°12.5′	130°21.5′	1720 1708	ditto	ditto, more southwestern position	fine sand bearing light greenish and brawnish gray mud	
384	P 64	23	10: 33 10: 34	29°38.2′	128°34.8′	1930	piston corer (without inner tube)	Floor of Okinawa Trough	upper part: greenish grey tuffaceous clay lower part: light brawnish and greenish grey pumiceous sand	
385	D 127	23	13: 52 13: 56	29°50.5′ ditto	128°52.8′ ditto	212 200	Cylinder type and chain bag type dredges	The west of Tokara Isls., Shoulder of seamount	hornblende(?) andesite (basement rock) calcareous (shell and coral fragments) sand. pumice, pebble	fuse wire of chain bag type dredge was broken
386	G 167	25	17: 08	29°39.3′	127°41.4′	630	Smith McIntire type glove	Continental slope of East China Sea	greyish green clayey mud, pumice	
387	D 128	26	13: 34 14: 00	27°26.5′ 27°26.7′	129°48.0′ 129°47.0′	2125 2140	Cylinder type and chain bag type dredge	Flank of the small projection of continental slope of Ryukyu Trench	faint brawnish grey mud involving fine sand and pumice. brawnish medium grained sand stone partly coated by blackish matter	
388	D 129	26	15: 54 16: 04	27°32.5′ 27°32.5′	129°38.4′ 129°38.5′	1655 1675	Cylinder type and chain bag type dredge	Flank of the projection of continental side slope of Ryukyu Trench	light brawnish grey mud involving fine or medium grained sand, pumice and foraminifera.	
389	P 65	31	16: 39	25°03.7′	128°08.0′	7110	Piston corer	Bottom of Ryukyu Trench	318 cm. Seven graded beds are recognized. upper greyish olive (clayey) lower grey (silty)	

Table II-1-3 (continued)

St. No.	Sample No.	Date	Time	Position		Depth (m)		Area and topography	Samples	Remarks
				Lat. N	Long. E					
390	P 66	Aug. 1	13: 28	26°45.0′	126°16.5′	1900	ditto	Floor of Okinawa Trough	415 cm very fine sand-clay penetrating the pumice bed	
391	D 130	1	17: 47 18: 10	26°59.1′ 27°01.0′	126°07.0′ 126°06.0′	1160 900	Cylinder type and chain bag type dredges	Cliff between Okinawa Trough and the continental slope of East Caina Sea	olive brawn silt with very fine sand including Globigerinas. Dark olive grey silty mud sandstone, platy mud stone, pumice	
392	P 67	5	11: 18	28°13.3′	127°53.0′	1200	Piston corer	Floor of Okinawa Trough	olive grey clay, pumice 170 cm	
393	D 131	5	13: 36 13: 49	28°19.0′ 28°19.0′	127°48.0′ 127°47.9′	970 970	Cylinder type and chain bag type dredges	Summit flat of seamount, in the axial part of Okinawa Trough	olive brawn clay including pumice and foraminifera. Augular pumice block	
394	P 68	7	9: 30	27°56.0′	127°21.0′	1300	Piston corer	Floor of Okinawa Trough	olive grey clay, 542 cm	
395	D 132	7	11: 22 11: 35	27°57.0′ 27°57.0′	127°13.5′ 127°13.5′	970 980	Cylinder type and chain bag type dredges	Flank of seamount in the axial part of Okinawa Trough	greyish olive clay including dominant foraminifera and a few shell fragment. pumice	
396	G 168	7	15: 49	28°16.8′	126°35.0′	158	Smith McIntire type glove	Continental shelf of East China Sea	sand (shell fragment, coral, foraminifera, pyroclastic grain)	
397	D 133	8	hit 13: 32 14: 11 lift 14: 41	27°04.2′ 27°04.0′ 27°03.2′	127°40.5′ 127°40.2′ 127°40.4′	720 632 570	Cylinder type and chain bag type dredges	Cliff of the slope between Okinawa Trough and Nansei Isls.	greyish olive fine sand involving foraminifera. pumice contaminated by dark blackish brown matter. rock fragments.	
398	D 134	8	18: 48 19: 11	27°35.6′ 27°36.0′	127°06.3′ 127°06.0′	1410 1250	ditto	Flank of seamount of the arc side slope of Okinawa Trough	glassy andesite, pumiceous andesite pitch stone. Dark olive brawn clay involving foraminifera.	
399	D 135	14	9: 05 9: 34	24°28.4′ 24°29.0′	131°00.0′ 130°59.7′	2880 2770	ditto	Southern slope of Oki-Daito Island	light greyish brawn calcareous silt involving semi-consolidated parts. pumice, crusts of manganese nodule	
400	D 136	14	first hit 16: 39 17: 02 second hit 17: 43 18: 00	25°45.2′ 25°45.6′ 25°46.0′ 25°46.3′	131°13.5′ 131°13.5′ 131°13.4′ 131°13.2′	2560 2450 2250 2160	ditto	Southeastern slope of Minami-Daito Island	light greyish brawn calcareous. Fine sand well compact involving foraminifera. Semi-consolidated mad (calcareous) o light brawnish grey involving foraminifera and micro nodules(?) o light greyish brawn involving foraminifera	