

**Ocean Chemistry Data Report:  
Alice Arm, Observatory Inlet;  
Part 2, March 1982**

R.W. Macdonald, M.C. O'Brien, D.M. Macdonald

Institute of Ocean Sciences  
Department of Fisheries and Oceans  
Sidney, B.C. V8L 4B2

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**Canadian Data Report of  
Hydrography and Ocean Sciences  
No. 17 (Part 2)**



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## Canadian Data Report Of Hydrography and Ocean Sciences

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PART 2, MARCH 1982

by

R.W. Macdonald

M.C. O'Brien

D.M. Macdonald

Institute of Ocean Sciences  
Department of Fisheries and Oceans  
Sidney, B.C. V8L 4B2

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## ABSTRACT

Macdonald, R.W., M.C. O'Brien, D.M. Macdonald 1984. Ocean Chemistry Data Report: Alice Arm, Observatory Inlet; Part 2 March 1982. Can. Data Rep. Hydrogr. Ocean Sci. 17 (Part 2), 52pp.

The preliminary data from an Ocean Chemistry Cruise (OC-82-IS-001), to Alice Arm, B.C., are reported here (March 1982). Included are measurements of salinity, temperature, chlorophyll a, silicate, nitrate, phosphate, particulates (dry weight and Coulter Counter) and amounts of material caught in sediment traps.

Key words: Alice Arm, Data, Oceanographic.

## RESUME

Macdonald, R.W., M.C. O'Brien, D.M. Macdonald 1984. Ocean Chemistry Data Report: Alice Arm, Observatory Inlet; Part 2 March 1982. Can. Data Rep. Hydrogr. Ocean Sci. 17 (Part 2), 52pp.

Les données préliminaires obtenues lors d'une expédition (Chimie de l'océan) (OC-82-IS-001) au bras Alice (C.-B.) sont présentées (mars 1982). Celles-ci comprennent des mesures de salinité et de température et des dosages de chlorophylle a, silicate, nitrate, phosphate, matières particulaires (poids sec et numération Coulter) et de matériaux recueillis dans des pièges à sédiments.

Mots clés: Bras Alice, données, océanographie

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## INTRODUCTION

As part of an investigation of the transport and fate of mine tailings disposed in a coastal fjord, Ocean Chemistry conducted two cruises to Alice Arm, Hastings Arm and Observatory Inlet. During these cruises the water column and sediments were sampled, and sediment traps were deployed and recovered in Alice Arm. During another two cruises organized by Coastal Zone Oceanography, we deployed and recovered sediment traps in Alice Arm. Additionally we collected nutrient samples during two other Coastal Zone Oceanography cruises. The background and preliminary data from these cruises are reported in three Parts as follows:

- Part 1. December 1981, CZO Alice Arm Cruise 02 (nutrients)  
January 1982, CZO Alice Arm Cruise 03 (nutrients)  
June 1982, CZO Alice Arm Cruise 05 (nutrients, sediment traps)  
January 1983, CZO Alice Arm Cruise 08 (sediment traps)
- Part 2. March 1982, Ocean Chemistry Cruise OC-82-IS-001  
(nutrients, particulates, trace metals, sediment traps)
- Part 3. September-October 1982, Ocean Chemistry Cruise OC-82-IS-003  
(nutrients, particulates, trace metals, sediment traps)

Reported here in Part 2 are the sampling methods and preliminary data from the March 1982 cruise. We do not report the results of all determinations which have been or will be performed on the material caught in sediment traps or from coring. Rather this data report is intended to be a source document for the interpretation of the more specialized data as they become available. To that end we include detailed information on sampling locations and times, sampling technique and analytical methods for the data reported here. Furthermore we list the results of such water column measurements as salinity, temperature, dissolved oxygen, nutrients (reactive silicate, orthophosphate and nitrate plus nitrite), particulate concentrations and size distribution, and the mass of material collected by the sediment traps.

## SAMPLING STATIONS

We have used the same sampling stations and terminology as used by Coastal Zone Oceanography. To avoid conflict, we placed our sediment traps near, but not exactly at, four of the regular stations in Alice Arm; ST-1 (AA-1), ST-2 (AA-2), ST-3 (AA-3), ST-4 (AA-4). Station locations are shown in Figure 1 with exact coordinates listed in the tables. The arrangement of sediment traps in longitudinal section is shown in Figure 2.

## SAMPLING METHODS

### Sea Water

Samples were collected in 10L Go-Flo bottles. These were cleaned with 1% HNO<sub>3</sub> for 7-18 hours, filled with 0.05% HNO<sub>3</sub> and distilled Milli-Q water for approximately 6 days. This was repeated once or twice. Bottles were lowered on a stainless steel hydrowire. Once the bottles had been tripped and were retrieved, subsampling took place as follows:

1. Oxygen samples were drawn first into 125 mL calibrated oxygen bottles which were pickled immediately (Ocean Chemistry Methods, 1976).
2. The contents of the Go-Flo were mixed by gentle shaking. Using plastic gloves, two small aliquots were drawn into an acid cleaned 5 L carboy to rinse it. With the aid of a large acid cleaned polyethylene funnel, approximately 4 L of water was drained quickly from the bottom of the Go-Flo bottle by rotating the bottom ball-valve to a partially open position. The contents of the 5 L carboy were later subsampled in the ship's lab for particulate determination by filtration, Coulter counter, chlorophyll a and microscopic examination as described below.
3. Salinity samples were drawn into 260 mL glass bottles, and nutrient samples were drawn into 2 glass and 2 plastic screw-cap test tubes (~15 mL) after 3 rinses. Nutrient samples were immediately transferred to a chest freezer where they were frozen in an upright position and later transferred to zip-lok bags which were stored inside a dark green plastic bag.
4. The remaining sample (~5 L) was subsampled for dissolved and/or total trace metal analysis. Sampling and results are reported elsewhere.
5. Temperature was measured with paired reversing thermometers read twice to the nearest 0.01C<sup>o</sup>.

### Subsampling of 5 L Carboy

#### Particulates

The 4 L water sample was gently shaken before any samples were removed. After two small rinses, water was quickly transferred to acid cleaned 1 L polybottles. The polybottles were marked on the exterior with volume graduations, and as much sample as possible was filtered depending on particulate loading (2-4 L). Filtrations were carried out in an enclosure made of plastic sheeting, and with the technician wearing a hair cap, lab coat and plastic gloves. The volume filtered was recorded to the nearest 10 mL. The filters were 0.4  $\mu$ m, 47 mm nuclepore filters, acid cleaned (6N HCl overnight, 1% HNO<sub>3</sub> overnight and rinsed in Milli-Q water) and dried at 40<sup>o</sup> overnight and weighed. After the filtered water had passed through

the filter, it was rinsed with three 10 mL portions of pH8 Milli-Q water followed by three small rinses around the filter perimeter after the castle had been removed. Blanks were prepared by periodically placing a second filter underneath. All filters were stored in acid cleaned petri-slides in a freezer and returned to the lab.

#### Coulter Counter

After two gentle rinses, about 250 mL of water were subsampled into a 300 mL glass salinity bottle with a teflon lined top. The same bottles were used again at the next station, and care was taken not to introduce bubbles into the water during mixing of subsampling.

#### Chlorophyll a (Top 100 m of the water column)

A 300 mL subsample was filtered onto a 2.5 cm GF/C filter, sprayed with a suspension of 1%  $MgCO_3$ , folded into a Whatman #1 quantitative filter, labelled and stored in a freezer inside a brown glass bottle containing silica-gel. The filters were returned to the lab for analysis.

#### Microscopic Examination

A 100-200 mL subsample was filtered onto a millipore filter with grid markings, frozen, and returned to the lab.

#### Sediments

A Smith-MacIntyre grab sampler (0.1 m<sup>2</sup> bite) was used to obtain surface sediment. Samples were removed from the surface layer and placed into Whirl-Pak bags, frozen and returned to the lab for Pb-210 determination.

#### Sediment Traps

The design and characteristics, and method of deployment are fully described in Part 1. Here we note only the aspects which are pertinent to this cruise.

As before, the sediment traps were placed in paired configuration. For this cruise, one of the paired traps was poisoned with formaldehyde by adding approximately 500 mL of 1% buffered formalin in 5% NaCl solution to the sample cup just before deployment. Furthermore, a polyethylene tube (30 cm long, 1 cm diameter, sealed at one end) was filled with a solution containing 37% formalin and 20 g/100 mL NaCl with rhodamine B dye. Density contrast would result in this solution slowly leaking into the sample cup after deployment. About 500 mL of 5% NaCl solution was placed in the other trap. The dye was used to investigate whether or not the traps flushed during deployment.

## Subsampling of Sediment Traps

Subsampling was carried out as described in Part 1 except that all trap contents were initially passed through a 500  $\mu\text{m}$  acid washed screen. The polybottles containing the sieved material were stored in a cooler ( $4^{\circ}\text{C}$ ) and in the dark for five days until they were returned to the laboratory. The greater than 500  $\mu\text{m}$  fraction was backwashed off the screen onto a nuclepore filter, rinsed with Milli-Q water and stored frozen ( $-10^{\circ}\text{C}$ ) for microscopic examination.

## Laboratory Subsampling of Sediment Trap Materials

The less than 500  $\mu\text{m}$  fraction in the polybottle was subjected to a sampling scheme similar to that outlined in Part 1 (Route B). Details will be given here only where the process differed in a significant manner. Total volume in the polybottle was measured. Keeping the particulate matter in suspension by gentle agitation, a subsample was removed for POC, PON ( $\sim 30$  mL), microscopic examination (0.4-3.5 mL), and chlorophyll a ( $\sim 10$  mL). The remaining sample was subdivided into 2-5 portions (250 mL acid cleaned polyethylene graduated cylinders) and vacuum filtered onto acid washed nuclepore filters. These were rinsed (3 x 10 mL portions pH 8 Milli-Q water) and stored frozen. No further sieving steps were carried out on the material.

## ANALYTICAL METHODS

We include here details of methods, and estimates of precision and accuracy pertinent to this data set. Where details have been given in Part 1, they will not be repeated here.

### Oxygen

Oxygen samples were run by the micro-Winkler technique (Carpenter, 1965) in accordance with the procedure outlined in the Ocean Chemistry Division Reference Manual (1976). Due to analytical problems which were discovered well into the cruise, there is some doubt about the accuracy and precision of the analyses. We are certain that the  $\pm 0.02 \text{ mL}^{-1}$  achievable by the method was not obtained here. For this reason, we have kept the records but do not report the results of oxygen determinations run during the cruise.

### Salinity

In this report no units of salinity are used. The numbers given are salinity  $\times 10^3$ . Salinity samples were determined at I.O.S. (Canada) on the Guildline Autosal Salinometer (Model number S/N 40-364) calibrated with LAPSO standard sea water. We compared our data with that obtained during CTD casts by Coastal Zone Oceanography approximately 9 days later.

For the deep water (200 metres or deeper) we found  $\Delta, s, n = 0.0118, 0.0088, 17$  where  $\Delta = \text{Salinity (Ocean Chem.)} - \text{Salinity (CZO)}$ . If it is assumed that the environmental conditions had not significantly changed in the deep water during the 9 day interlude, Ocean Chemistry is reporting salinities 0.01 higher than those determined by Coastal Zone with their CTD (Guildline Analogue CTD model 8700, see Part 1 for resolution and accuracy). Based on replicate conductivity determinations (91 samples) the pooled variance ( $s_p^2 = \frac{1}{2n} \sum \Delta^2$ ) was calculated. From this we calculate the instrumental precision (Guildline Autosol) to be  $\pm 0.0004$  (1s).

#### Particulates, Dry Weight

Filters were dried at  $40^\circ\text{C}$  overnight and weighed on a Perkin Elmer autobalance (AD-2) to the nearest 0.01 mg. Calibration was carried out in accordance with the instruction manual using class 5 NBS weights. The instrument is very linear, and calibration does not appear to contribute significantly to error (Macdonald et al, 1983). The major weighing problem is static on the filters and this we have combatted using a Po  $\alpha$  source static eliminator, and an anti-static gun. For the data reported here we found the blanks to be  $\bar{B} \pm s_B$ ,  $(n) = 0.027 \pm 0.048, (6)$ . This corresponds to a detection limit (d.l. =  $3 s_B$ ) of 0.15 mg and a quantification limit (9.l. =  $10 s_B$ ) of 0.50 mg. For the sample volumes filtered this corresponds to d.l.  $\leq 0.07 \text{ mgL}^{-1}$ , q.l.  $\leq 0.25 \text{ mgL}^{-1}$ . If we assume variance on the sample to equal that of the blank we may estimate the overall standard deviation to be  $\sqrt{2} s_B$  which for this data set is about 0.07 mg, or  $\leq 0.04 \text{ mgL}^{-1}$ . While absolute accuracy of the balance can be established with class 5 (NBS) weights to be within  $\pm 0.01$  mg, accuracy for field samples (considering filtration and sample handling) has not been established here, or in the literature. Filtration through  $0.4 \mu\text{m}$  filters operationally defines particulate/dissolved, and does seem to be a reasonably precise process (see Brewer et al, 1976).

#### Chlorophyll a

Samples were determined with a Turner Design Fluorometer by the fluorometric method described by Strickland and Parsons (1972). Detection limits and precision achievable are reported in that reference and listed in Table 1, but have not been evaluated for the data reported here.

#### Coulter Counter, ppmV

Samples were analyzed immediately on board ship using a Model TAITI Coulter Counter with a 200  $\mu\text{m}$  aperture tube. The instrument was calibrated with 9.69  $\mu\text{m}$  polystyrene beads in accordance with the instrument manual. For each sample, several runs in the "manometer mode" were used to see that counts were accumulating smoothly and that there was agreement between subsequent counts. The instrument was then set at 100 seconds and a larger volume was counted (15.9 mL). The volume was determined by timing the interval required to run 2.0 mL through the aperture. Precision for a

single sample can be estimated since for Poisson statistics,  $s = \pm \sqrt{n}$  where  $n$  is the number of counts. We have also estimated field precision by examining counts for deep water which is unaffected by proximal particulate sources. There the variance may be expressed as  $s^2$  (total) =  $s^2$  (environmental) +  $s^2$  (instrumental). Therefore  $s^2$  (instrumental) <  $s^2$  (total). For samples at depths 150 m or greater, and not near the bottom, we estimate the average volume of particulates,  $\bar{V}$  to be  $\bar{V} \pm s(n) = 0.227 \pm 0.034$  (17). This gives a coefficient of variation for the samples with the smallest numbers counted of  $\leq 15\%$ . Replicates which have from time to time been run are in accord with this estimated maximum.

### Nutrients

Methods of analysis are reported in Part 1. Precision was estimated using blind replicates (see Part 1). The pooled estimate of standard deviation is reported in Table 1, and replicates are shown in the data Tables.

### Sediment Trap Materials, Dry Weight

Methods of dry weight determination are fully described in Part 1. We examined the precision of splitting the trap contents (volumetrically), filtering and weighing. The standard deviation was a function of total amount of material but we found the coefficient of variation to be fairly constant. For 26 determinations, the highest C.V. was 11.8% and 24 were less than 5%. The overall average C.V. was 2.5%, which is slightly higher than that found for the two cruises reported in Part 1. The agreement between replicate traps at the same depth was good with an average C.V. of about 2.6%. This was better than the results reported in Part 1 but part of the explanation may be that these traps were not subjected to a sieving step (64  $\mu\text{m}$ ) and therefore cumulative errors of adding the different size fractions together.

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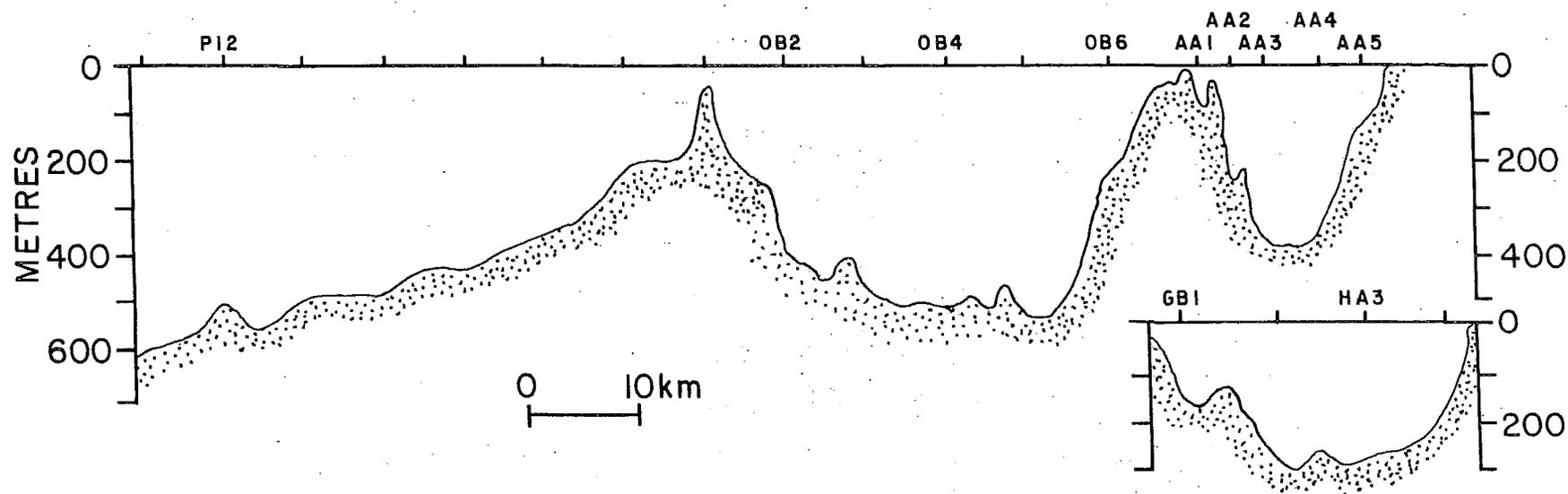
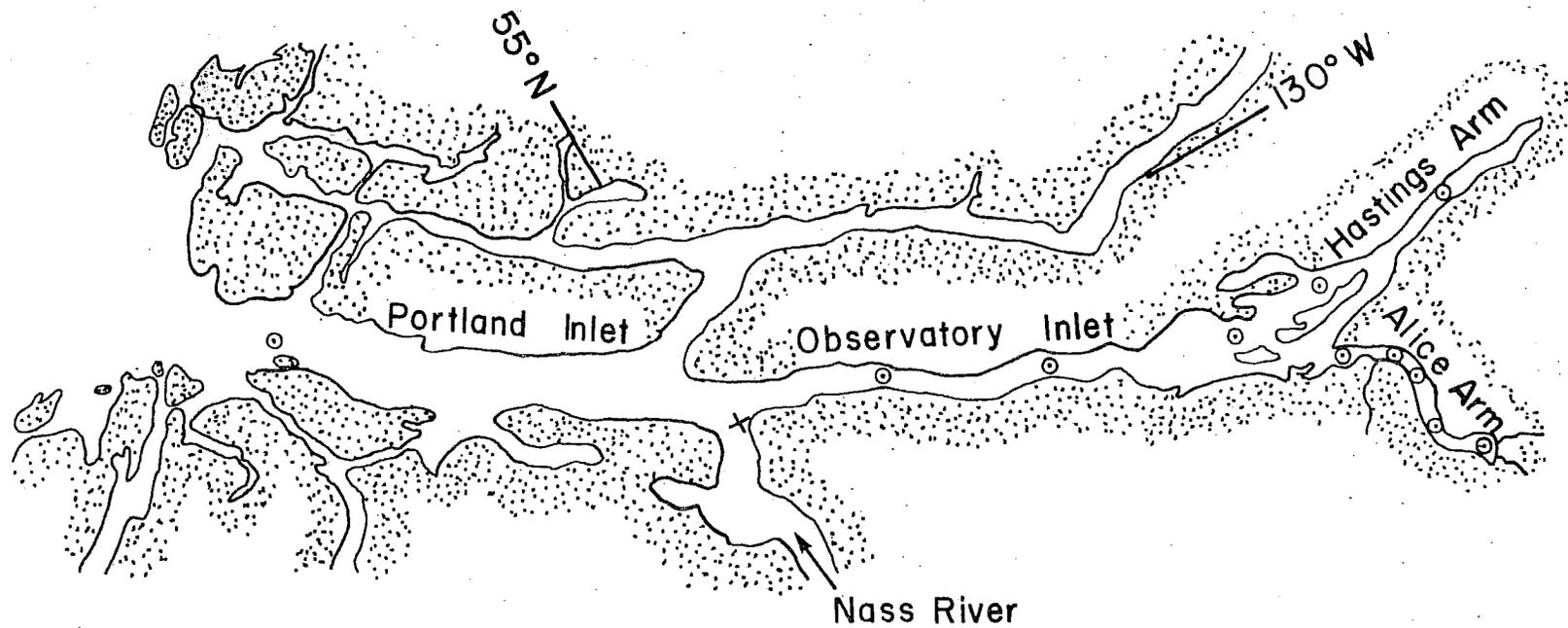


Fig. 1. Station locations

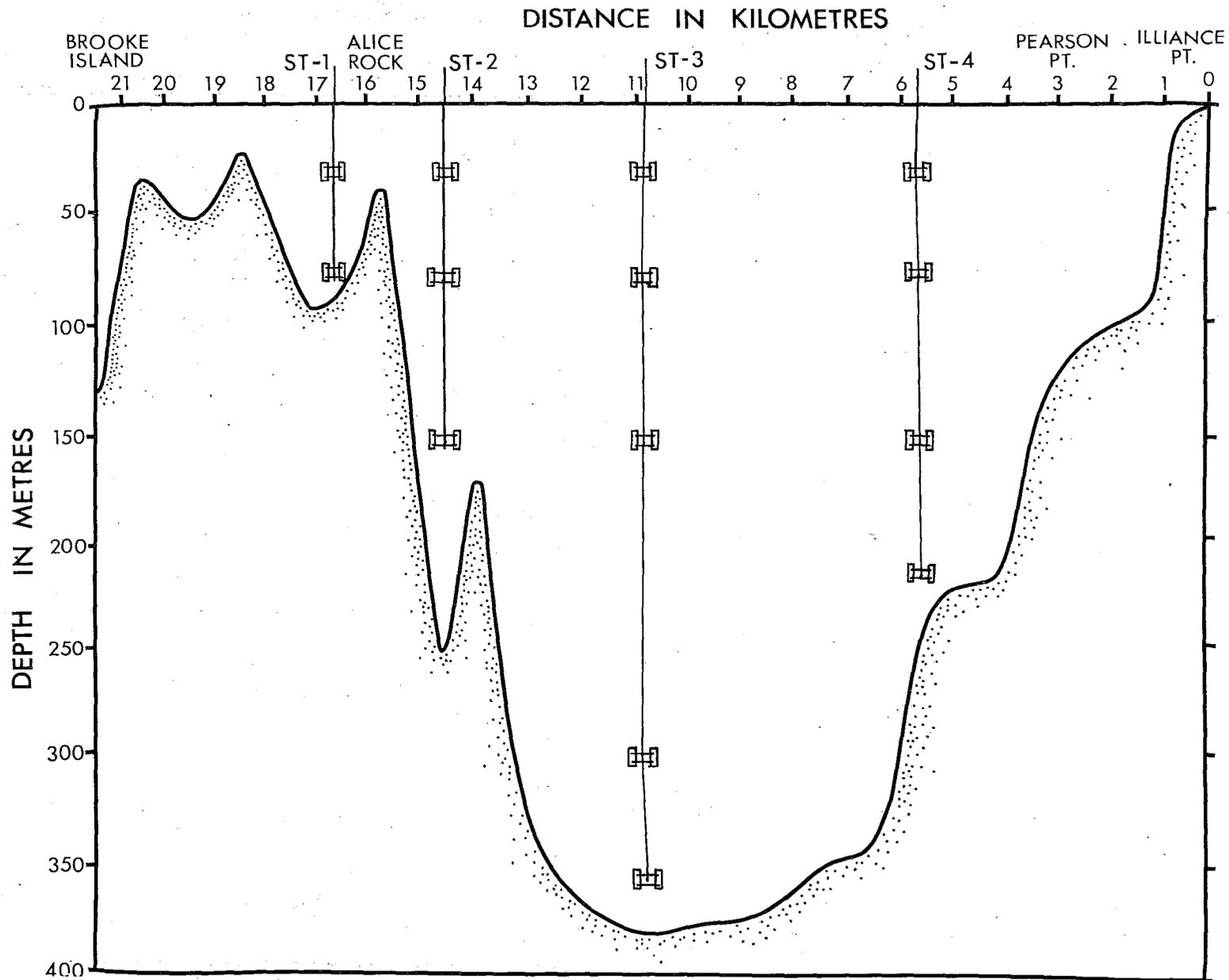


Fig. 2. Sediment trap deployment locations

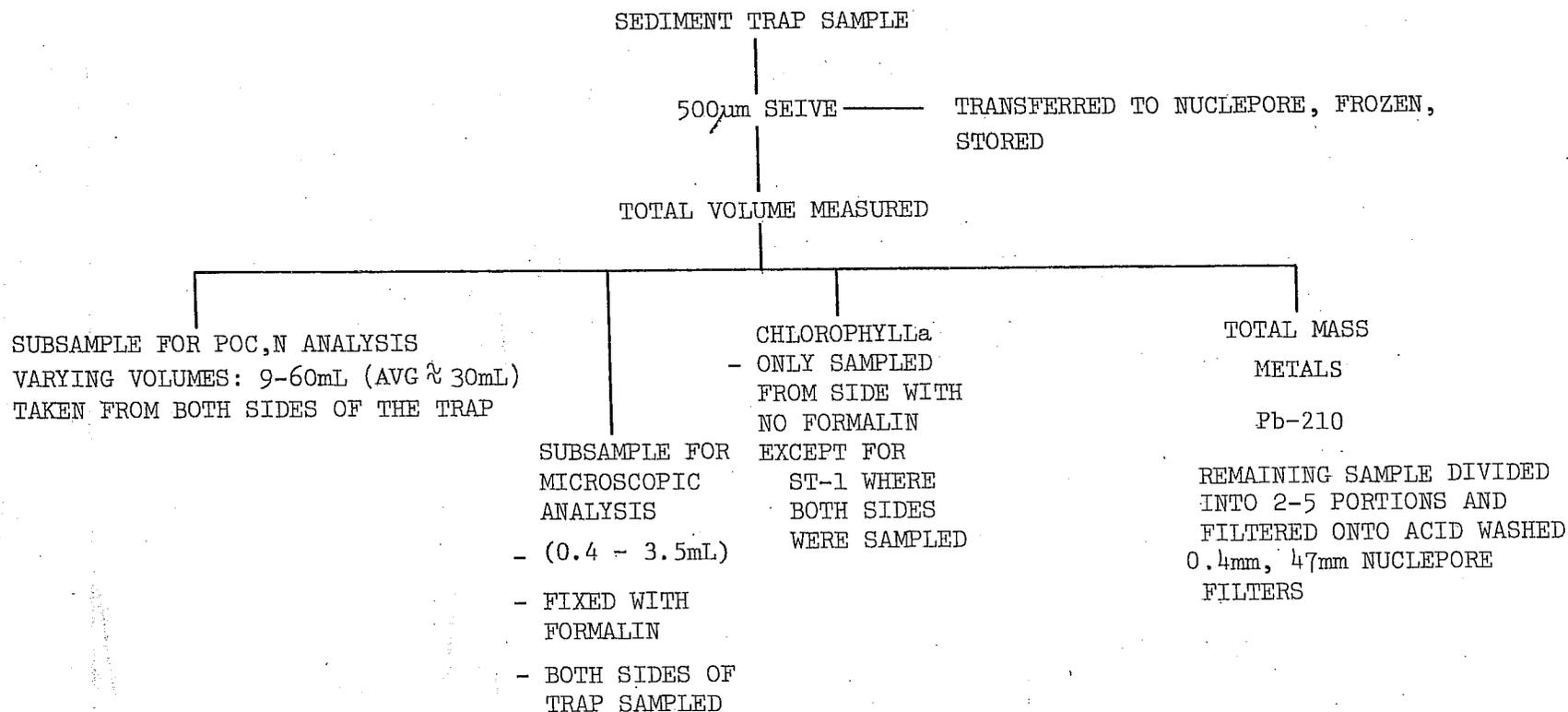


Fig. 3. Sediment trap subsampling scheme

Appendix 1.

Data Tables.

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TABLE 1. ESTIMATES OF PRECISION, ACCURACY AND DETECTION LIMIT

Measurement	Precision (1s)	Accuracy (1s)	Detection limit
Salinity	$\pm 0.0004$ ‰	$\pm 0.01$	
Temperature	$\pm 0.01$ C°	$\pm 0.02$ C°	
Particulates (sea water)	$\pm 0.04$ mgL <sup>-1</sup> C.V. 10%	Not Established Operationally defined	$\leq 0.07$ mgL <sup>-1</sup>
Chlorophyll <u>a</u>	<8% (depends on <sup>1</sup> concentration)	Not Established	0.07 mgL <sup>-1</sup>
Coulter Counter Particulate Volume	$\leq 15\%$ (n=17)	0-4% (Coincidence) Calibrated with 9.69um Standard	Minimum <u>total</u> count of ten <sup>3</sup>
Silicate	$\pm 8\%$ (n=14)	$\pm 8\%$ <sup>2</sup>	$\sim 0.1$ mmol m <sup>-3</sup>
Nitrate	$\pm 1\%$ (n=14)	$\pm 1\%$ <sup>2</sup>	$\sim 0.05$ mmol m <sup>-3</sup>
Phosphate	$\leq \pm 23\%$ (n=14)	23% <sup>2</sup> (bias component evident)	$\sim 0.03$ mmol m <sup>-3</sup>
Sediment trap particulate weight within traps	$\pm 2.5\%$	$< \pm 3\%$	$\leq 0.2$ mg
Between replicate traps	$\pm 2.6\%$	No absolute check possible	

1. Estimate given in Strickland and Parsons (1972) but not evaluated here
2. Reference to Sagami Standards
3. Sheldon and Parsons (1967)

TABLE 2. STATION LOCATIONS FOR WATER SAMPLING

STATION	DATE	TIME (Z+8)	LOCATION		SAMPLES TAKEN
			LATITUDE N	LONGITUDE W	
AA-1	26/03/82	1526	55° 24.75'	129° 40.75'	O,S,T, Nut, Chla, Part, C.C., Micro, Metals, Sed.
AA-2	26/03/82	1317	55° 26.00'	129° 40.05'	O,S,T, Nut, Chla, Part, C.C., Micro, Metals.
AA-3	25/03/82	1503	55° 27.15'	129° 37.05'	O,S,T, Nut, Chla, Part, C.C., Micro, Metals, Sed.
AA-4	25/03/82	1635	55° 26.69'	129° 32.00'	O,S,T, Nut, Chla, Part, C.C., Micro, Metals, Sed.
AA-5	27/03/82	0828	55° 27.90'	129° 29.25'	O,S,T, Nut, Chla, Part, C.C., Micro, Metals, Sed.
HA-3	27/03/82	1055	55° 32.50'	129° 47.10'	O,S,T, Nut, Chla, Part, C.C., Micro, Metals
GB-1	26/03/82	0818	55° 25.40'	129° 29.25'	O,S,T, Nut, Chla, Metals, Sed.
OB-6	27/03/82	1406	55° 21.30'	129° 45.70'	O,S,T, Nut, Chla, Metals, Sed.
OB-4	24/03/82	1546	55° 13.90'	129° 51.10'	O,S,T, Nut, Chla, Part, C.C., Micro, Metals
OB-2	28/03/82	0935	55° 6.70'	129° 57.30'	O,S,T, Nut, Chla, Metals
PI-2	28/03/82	1335	54° 43.80'N	130° 24.30'	O,S,T, Nut, Chla, Metals
ILLIANCE CREEK	26/03/82	~0800	~400m from sea		Part
KITSAULT RIVER	26/03/82	~0800	~400m from sea		Part
LIME CREEK	26/03/82	~1000	~100m from sea		Part

ABBREVIATIONS

C.C.	Coulter Counter	Nut	Nutrients (Silicate, Phosphate, Nitrate)
Chla	Chlorophylla	O	Dissolved oxygen
Metals	Dissolved trace metals	Part	Particulates by filtration
Micro	Particulates for microscopic examination	Sed	Bottom sediments (grab sample)

TABLE 3. ALICE ARM CHEMICAL DATA (MARCH 1982, OC-82-IS-001)

STATION AA-1 26/03/82 1526 (Z+8) Bottlecast DEPTH 86m

DEPTH m	TEMP. °C	SALINITY X10 <sup>3</sup>	SIGMA T *	CHLa mg m <sup>-3</sup>	PHOSPHATE mmol m <sup>-3</sup>	SILICATE mmol m <sup>-3</sup>	NITRATE mmol m <sup>-3</sup>	SUSP. mgL <sup>-1</sup>	PART. mLL <sup>-1</sup>
5	5.66	31.13	24.57	4.68	1.51	35.2	18.3	1.63	1.97
25	5.65	31.12	24.56	4.53	1.75	35.2	18.6	1.67	2.11
50	5.65	31.15	24.58	4.38	1.76	35.6	18.5	1.80	1.99
75	5.69	31.21	24.63	4.68	2.00	40.1	20.6	1.57	2.22

STATION AA-2 26/03/82 1317 (Z+8) Bottlecast DEPTH 258m

DEPTH m	TEMP. °C	SALINITY X10 <sup>3</sup>	SIGMA T	CHLa mg m <sup>-3</sup>	PHOSPHATE mmol m <sup>-3</sup>	SILICATE mmol m <sup>-3</sup>	NITRATE mmol m <sup>-3</sup>	SUSP. mgL <sup>-1</sup>	PART. mLL <sup>-1</sup>
5	5.39	30.73	24.28	7.10	2.14	32.3	16.2	2.02	3.46
25	5.50	31.07	24.54	3.02	2.00	38.4	19.9	1.34	1.79
50	5.47	31.11	24.57	1.96	1.79	41.3	21.2	1.20	1.19
75	5.42	31.12	24.59	1.78	1.97	39.2	20.1	1.25	1.22
100	5.42	31.16	24.62	1.20	2.06	39.8	20.1	0.96	0.75
150	5.34	31.22	24.67		2.15	46.8	23.8	0.62	0.23
200	5.35	31.23	24.68		2.14	46.4	23.7	0.69	0.26
250	5.34	31.24	24.69		2.08	43.9	22.8	0.82	0.30

\* Sigma t has been calculated according to Knudsen's formula (see Fofonoff, N.P., 1962, in The Sea V.1, M.N. Hill ed., eqn 24, p 9) and is unitless.

$$\sigma_{t, \text{Knudsen}} = \left( \frac{\rho(s, t, o)}{\rho_{\text{max}}} - 1 \right) \times 1000 \text{ where } \rho_{\text{max}} = 0.999975 \text{ g cm}^{-3}$$

TABLE 3 (CONTINUED)

STATION AA-3    25/03/82    1503 (Z+8) Bottlecast    DEPTH 386m

DEPTH m	TEMP. °C	SALINITY x10 <sup>3</sup>	SIGMA T	CHLa mg m <sup>-3</sup>	PHOSPHATE mmol m <sup>-3</sup>	SILICATE mmol m <sup>-3</sup>	NITRATE mmol m <sup>-3</sup>	SUSP. mgL <sup>-1</sup>	PART. mLL <sup>-1</sup>
5	5.55	30.68	24.22	4.68	1.74	34.7	16.9	1.68	2.80
25	5.52	31.03	24.50	2.14	1.50	39.0	19.9	1.06	1.53
50	5.46	31.13	24.59	1.01	1.68	38.8	19.8	0.39	0.90
75	5.43	31.16	24.62	0.49	1.81	42.9	21.6	0.61	0.58
100	5.32	31.21	24.60		1.88	48.5	24.3	0.57	0.25
150	5.37	31.24	24.69		2.02	51.9	26.0	0.80	0.20
200	5.36	31.25	24.69		1.94	50.8	25.4	0.62	0.20
250	5.39	31.26	24.70		2.65, 1.85	42.3, 49.1	21.8, 22.3	0.48	0.18
300	5.37	31.26	24.70		2.58	47.1	23.8	0.71	0.26
350	5.39	31.28	24.71		1.89	47.1	22.9	2.44	0.53

TABLE 3 (CONTINUED)

STATION AA-4 25/03/82 1635 (Z+8) Bottlecast DEPTH 278m

DEPTH m	TEMP. °C	SALINITY X10 <sup>3</sup>	SIGMA T	CHLa mg m <sup>-3</sup>	PHOSPHATE mmol m <sup>-3</sup>	SILICATE mmol m <sup>-3</sup>	NITRATE mmol m <sup>-3</sup>	SUSP. PART. mgL <sup>-1</sup> mL <sup>-1</sup>
5	5.47	30.77	24.30	4.98	1.93	39.1	20.0	1.53 1.91
25	5.48	31.07	24.54	2.95	1.81, 1.12	34.7, 39.1	18.1, 20.3	1.05 1.35
50	5.46	31.10	24.56	1.26	1.68	38.7	19.1	0.79 0.80
75	5.37	31.17	24.63	0.19	2.63	45.9	23.2	1.45 0.43
100	5.34	31.16	24.63	0.08	2.61	47.4	24.0	3.27 0.75
150	5.34	31.24	24.69		2.38	48.8	24.6	1.97 0.43
200	5.35	31.26	24.70		2.19	47.9	24.0	1.55 0.40
250	5.35	31.26	24.70		2.14	47.3	23.5	2.34 0.58
270	5.38	31.26	24.70		2.19	50.5	25.5	2.40

STATION AA-5 27/03/82 0828 (Z+8) Bottlecast DEPTH 104m

DEPTH m	TEMP. °C	SALINITY X10 <sup>3</sup>	SIGMA T	CHLa mg m <sup>-3</sup>	PHOSPHATE mmol m <sup>-3</sup>	SILICATE mmol m <sup>-3</sup>	NITRATE mmol m <sup>-3</sup>	SUSP. PART. mgL <sup>-1</sup> mL <sup>-1</sup>
5	5.45	30.97	24.46	4.38	2.36	47.5	25.2	1.48 2.10
25	5.42	31.09	24.56	0.97	1.68	44.2	22.7	0.78 0.64
50	5.41	31.14	24.60	0.47	2.58, 1.50	45.1, 44.7	22.7, 22.4	0.78 0.44
75	5.35	31.18	24.64	0.10	2.93	46.5	23.3	0.82 0.26
90	5.33	31.21	24.67	0.10	2.91	43.0	21.5	2.77 0.54

TABLE 3 (CONTINUED)

STATION HA-3 27/03/82 1055 (Z+8) Bottlecast DEPTH 282m

DEPTH m	TEMP. °C	SALINITY X10 <sup>3</sup>	SIGMA T	CHLa mg m <sup>-3</sup>	PHOSPHATE mmol m <sup>-3</sup>	SILICATE mmol m <sup>-3</sup>	NITRATE mmol m <sup>-3</sup>	SUSP. PART. mgL <sup>-1</sup>	PART. mLL <sup>-1</sup>
5	5.65	30.92	24.40	40.47	0.74	9.1	6.7	4.36	10.69
25	5.47	31.04	24.52	2.24	1.71	39.3	20.0	0.86	1.69
50	5.73	31.45	24.81	0.77	1.97	47.7	23.8	0.83	0.86
75	6.16	31.66	24.92	0.16	2.06	49.1	24.7	0.42	0.32
100	6.62	31.80	24.98	0.11	2.06	50.2	25.4	0.41	0.32
150	6.70	31.87	25.02		2.12	50.2	25.4	0.41	0.27
200	6.86	31.94	25.06		2.28	54.9	26.9	0.46	0.25
250	6.89	31.98	25.08		2.42	58.3	28.0	0.50	0.22

STATION GB-1 26/03/82 0802 (Z+8) Bottlecast DEPTH 115m

DEPTH M	TEMP. °C	SALINITY X10 <sup>3</sup>	SIGMA T	CHLa mg m <sup>-3</sup>	PHOSPHATE mmol m <sup>-3</sup>	SILICATE mmol m <sup>-3</sup>	NITRATE mmol m <sup>-3</sup>	SUSP. PART. mgL <sup>-1</sup>	PART. mLL <sup>-1</sup>
5	5.55	30.76	24.29	5.61	0.98	20.1	7.0	2.28	5.96
25	5.44	31.14	24.60	3.78	1.61	34.7	17.9	1.27	2.78
50	5.62	31.41	24.79	0.84	2.18, 1.92	43.7	21.9, 21.8	0.67	1.20
75	6.04	31.74	25.00	0.24	2.22	50.6	24.4	0.79	0.42
100	6.35	31.89	25.08	0.16	2.52	53.8	25.0	1.46	0.89

TABLE 3 (CONTINUED)

STATION OB-4 24/03/82 1406 (Z+8) Bottlecast DEPTH 503m

DEPTH m	TEMP. °C	SALINITY X10 <sup>3</sup>	SIGMA T	CHLa mg m <sup>-3</sup>	PHOSPHATE mmol m <sup>-3</sup>	SILICATE mmol m <sup>-3</sup>	NITRATE mmol m <sup>-3</sup>	SUSP. PART. mgL <sup>-1</sup>	PART. mLL <sup>-1</sup>
5	5.75	30.78	24.28	6.00	1.73	14.2	7.7	2.50	5.64
25	5.63	30.10	23.76	5.74	2.19	26.6	15.1	1.35	3.23
50	5.53	31.19	24.63	0.95	2.47	37.4	19.0	0.51	0.59
75	5.51	31.45	24.84	0.17	2.79, 1.90	44.5, 43.8	22.1, 22.3	0.37	0.26
100	5.84	31.75	25.03	0.13	2.94	47.7	24.5	0.40	0.24
150	6.57	32.25	25.34		3.59	50.1	27.1	0.68	0.37
200	6.93	32.42	25.42		3.79	52.9	28.1	0.31	0.19
250	6.87	32.50	25.49		3.78, 2.24	55.2, 57.9	27.8, 27.9	0.42	0.23
300	6.89	32.55	25.53		3.76	56.1	28.0	0.34	0.21
400	6.86	32.60	25.57		3.91	57.2	28.6	0.44	0.23
500	6.89	32.63	25.59		3.93	59.0	29.4	0.56	0.26

TABLE 3 (CONTINUED)

STATION OB-2 28/03/82 1546 (Z+8) Bottlecast DEPTH 430m

DEPTH m	TEMP. °C	SALINITY X10 <sup>3</sup>	SIGMA T	CHLa mg m <sup>-3</sup>	PHOSPHATE mmol m <sup>-3</sup>	SILICATE mmol m <sup>-3</sup>	NITRATE mmol m <sup>-3</sup>	SUSP. PART. mgL <sup>-1</sup> mLL <sup>-1</sup>
5	5.63	30.98	24.45	14.47	0.85	9.3	7.3	
25	5.58	31.19	24.62	2.87	1.46	36.3	18.1	
50	5.71	31.53	24.88	8.89	1.81, 1.90	42.3, 42.4	21.7, 21.1	
75	6.16	31.96	25.16	0.44	1.88	44.2	22.8	
100	6.30	32.12	25.27	0.45	1.95	45.5	23.5	
150	6.58	32.37	25.43		2.11	49.9	25.2	
200	6.73	32.47	25.49		2.30	55.2	27.1	
250	6.82	bottle leaked						
300	6.84	32.57	25.55		2.39, 2.53	60.3, 58.5	29.2, 25.8	
400	6.87	32.58	25.56		2.33	58.8	28.5	

STATION OB-6 27/03/82 1406 (Z+8) Bottlecast DEPTH 242m

DEPTH m	TEMP. °C	SALINITY X10 <sup>3</sup>	SIGMA T	CHLa mg m <sup>-3</sup>	PHOSPHATE mmol m <sup>-3</sup>	SILICATE mmol m <sup>-3</sup>	NITRATE mmol m <sup>-3</sup>	SUSP. PART. mgL <sup>-1</sup> mLL <sup>-1</sup>
5	5.75	30.88	24.36	11.47	0.83	20.3	6.7	
25	5.75	31.21	24.62	3.70	1.51	33.2	17.2	
50	5.79	31.46	24.81	1.12	1.80	43.4	21.3	
75	5.98	31.76	25.02	0.15	1.85	46.7	23.5	
100	6.30	32.00	25.17	0.10	1.95, 1.50	49.4, 51.2	24.8, 24.5	
150	6.75	32.30	25.35		2.20	52.9	26.4	
200	6.88	32.41	25.42		2.01	55.9	27.1	

TABLE 3 (CONTINUED)

STATION PI-2    28/03/82    1335 (Z+8) Bottlecast    DEPTH 540m								
DEPTH	TEMP.	SALINITY	SIGMA T	CHLa	PHOSPHATE	SILICATE	NITRATE	SUSP. PART.
m	°C	$\times 10^3$		$\text{mg m}^{-3}$	$\text{mmol m}^{-3}$	$\text{mmol m}^{-3}$	$\text{mmol m}^{-3}$	$\text{mgL}^{-1}$ $\text{mLL}^{-1}$
5	6.06	30.95	24.38	9.51	0.94	12.3	7.2	
25	6.22	31.14	24.51	0.91	1.27	25.4	13.7	
50	6.17	31.47	24.77	0.61	1.37	30.1	16.0	
75	5.99	31.69	24.97	0.33	1.62,1.79	38.1,39.8	20.1,20.2	
100	6.23	32.11	25.27	0.12	1.95	47.3	24.3	
150	6.59	32.57	25.59		2.17,2.20	51.0,50.5	25.9,25.7	
200	6.70	32.71	25.68		2.08	54.2	27.0	
250	6.77	32.83	25.77		2.27	55.3	28.0	
300	6.81	32.86	25.78		2.28,1.76	56.9,56.1	28.5,28.1	
350	6.85	32.89	25.80		2.27	57.9	28.7	
400	6.87	32.90	25.81		2.23	59.0	28.7	
450	6.87	32.91	25.82		2.30,2.24	57.9,57.2	28.6,28.9	
500	6.89	32.91	25.81		2.16	57.2	28.1	
530	6.90	32.91	25.80		2.01,2.00	57.4,57.9	28.6,28.7	
ILLIANCE CREEK								0.15
KITSAULT RIVER								0.46
LIME CREEK								2.52

TABLE 4(a). SUMMARY OF COULTER COUNTER DATA

COUNTS PER CHANNEL APPLIED TO A VOLUME OF 15.87 ML

STN	DEP M	COULTER COUNTER CHANNEL #												
		3	4	5	6	7	8	9	10	11	12	13	14	15
AA1	5	17931	8518	4329	2347	1483	1319	1028	289	340	329	121	19	0
AA1	25	17730	8857	4823	2671	1807	1456	815	438	581	314	92	17	1
AA1	50	18942	9047	4439	2519	1700	1418	891	363	483	343	83	11	1
AA1	75	16661	8623	4618	2568	1708	1462	896	359	425	401	133	19	0
AA2	5	15518	9094	5315	2428	1975	1415	811	684	1155	772	134	16	1
AA2	25	17428	8342	4023	2163	1381	1042	672	269	343	297	109	20	1
AA2	50	14363	6849	3425	1854	1118	757	507	170	265	229	43	7	0
AA2	75	16694	7710	3720	1944	1186	749	450	197	239	198	62	10	0
AA2	100	15103	6854	3275	1676	907	545	360	139	113	121	21	1	2
AA2	150	13645	5567	2579	1103	439	191	84	41	16	7	1	0	0
AA2	200	15418	6588	2860	1266	515	244	120	39	17	7	0	0	0
AA2	250	17598	7396	3328	1446	608	255	136	48	19	9	0	0	0
AA3	5	19487	10230	4989	2408	1659	1308	678	606	895	608	105	7	1
AA3	25	16712	7059	3470	1825	1107	735	404	306	402	293	70	7	1
AA3	50	13530	6045	2778	1474	819	596	305	161	168	161	51	1	0
AA3	75	14453	5945	2534	1350	842	534	312	143	125	48	10	1	2
AA3	100	15445	6156	2587	1015	384	190	97	36	11	8	0	3	0
AA3	150	19021	6808	2503	949	296	97	55	25	4	2	1	0	0
AA3	200	16590	6471	2436	905	326	149	60	17	6	5	0	0	0
AA3	250	12578	5210	2205	798	294	132	72	22	8	4	2	0	0
AA3	300	16815	6968	2760	1056	387	154	80	29	13	11	4	0	0
AA3	350	46141	18872	7422	2541	772	290	109	48	19	2	0	1	0
AA4	5	13669	6804	3973	2098	1453	940	543	463	619	397	59	4	0
AA4	25	13533	5994	3029	1782	1224	767	482	341	450	248	29	2	1
AA4	50	12686	5439	2742	1504	868	585	379	198	212	94	13	9	1
AA4	75	27018	11440	5161	2061	729	301	140	66	39	13	2	0	0
AA4	100	51957	21500	9788	4042	1621	636	253	77	21	10	0	1	0
AA4	150	32717	12971	5286	1846	683	259	127	43	21	6	1	0	1
AA4	200	25997	10659	4642	1900	837	378	143	45	15	8	0	0	1
AA4	250	32549	14148	6778	3120	1439	632	246	73	24	9	0	1	0

TABLE 4(a). SUMMARY OF COULTER COUNTER DATA

COUNTS PER CHANNEL APPLIED TO A VOLUME OF 15.87 ML

DEP	COULTER COUNTER CHANNEL #														
STN M	3	4	5	6	7	8	9	10	11	12	13	14	15		
HA3 150	8192	4308	2233	1122	541	267	133	74	31	13	4	1	0		
HA3 200	9771	4793	2471	1182	543	242	125	53	30	8	3	0	0		
HA3 250	10510	5949	3280	1378	472	139	70	30	12	4	0	0	0		
HA5 5	62482	32536	13020	8104	7240	8630	3633	1413	1388	542	131	75	4		
HA5 5	36350	16377	8419	6384	6827	7824	3017	1181	1110	520	117	119	31		
HA5 25	21963	9100	5974	4608	3068	2169	1282	660	559	276	87	65	8		
HA5 50	24782	10787	3946	2123	1175	746	420	145	128	81	33	53	4		
HA5 75	18443	7742	3683	1629	778	420	209	86	48	11	0	5	0		
HA5 100	34319	15206	6351	2451	1082	501	214	78	34	9	1	43	7		
OB4 5	23244	11086	5032	2390	1393	912	568	313	654	1187	718	77	0		
OB4 25	15846	7033	3564	1960	1078	651	457	268	355	579	414	46	2		
OB4 50	12376	5841	2961	1648	889	442	238	121	84	62	28	4	0		
OB4 75	8224	3866	2052	1089	534	348	143	66	29	8	2	1	0		
OB4 100	9021	4272	2157	1053	460	268	152	52	14	8	3	1	0		
OB4 150	10676	5295	2705	1406	798	484	224	98	41	17	3	1	0		
OB4 200	6483	3214	1821	828	421	196	124	34	19	6	1	1	0		
OB4 200	6745	3304	1749	830	400	197	100	31	19	10	3	1	0		
OB4 200	6319	3169	1631	748	391	206	104	36	12	9	0	0	1		
OB4 250	9639	4682	2384	1101	429	203	74	46	12	7	7	1	0		
OB4 300	9870	4833	2397	984	431	166	57	46	41	3	0	0	0		
OB4 400	10120	5156	2681	1217	469	184	68	36	14	12	5	0	0		
OB4 500	12137	6646	3615	1682	583	198	63	18	10	6	2	1	0		
AA5 5	14686	6686	3386	2179	1526	835	577	583	1122	301	24	6	0		
AA5 25	10019	4470	2502	1430	766	376	221	158	200	96	10	2	0		
AA5 50	11703	4987	2688	1347	715	382	167	112	90	40	1	1	2		
AA5 75	16228	6625	2613	1108	469	164	87	51	14	8	4	0	0		
AA5 90	42154	16763	6993	2881	1061	350	139	41	17	5	2	1	0		
HA3 5	48975	21842	10509	8612	7766	9564	7357	2810	3123	1672	315	45	7		
HA3 25	41994	24347	7865	4075	2400	1698	1039	560	401	107	13	3	0		
HA3 50	24009	10805	4389	2292	1408	819	570	363	196	35	3	1	0		
HA3 75	10247	5009	2654	1361	708	400	216	87	47	7	1	0	0		
HA3 100	9453	4766	2557	1216	611	345	183	71	42	17	2	0	1		

TABLE 4(b). VOLUME OF PARTICLES IN THE CHANNELS  
AND SAMPLE CALCULATION OF VOLUME (ppmV)  
FROM COULTER COUNTER DATA

CRUISE: OC-82-IS-001 ALICE ARM

CHANNEL #	GEOMETRIC MEAN VOL. $\mu^3$	BAND WIDTH	EXAMPLE CALCULATION
3	47.39	1.04	$\text{VOL(ppmV)} = \frac{\text{GMV } (\mu^3) \times \# \text{ PARTICLES}}{\text{SAMPLE VOL (mL)} \times 10^6}$ <p>i.e. <math>\frac{47.39 \times 17931}{15.8 \times 10^6} = 0.0538</math></p>
4	94.78	1.31	
5	189.60	1.65	
6	379.10	2.08	
7	758.30	2.62	
8	1516.00	3.30	
9	3033.00	4.20	
10	6066.00	5.20	
11	12130.00	6.60	
12	24270.00	7.70	
13	48540.00	10.50	
14	97180.00	13.20	
15	194400.00	16.60	

STATION AA-1  
DATE 26/03/82  
DEPTH 5  
VOLUME OF SAMPLE = 15.80 mL

CHANNEL	# PARTICLES	COINCIDENCE CORRECTION FOR # OF PARTICLES	VOLUME (ppmV)	NORMALIZED VOLUME
3	17931	1.0	0.0538	0.0517
4	8518	1.0	0.0511	0.0390
5	4329	1.0	0.0519	0.0315
6	2347	1.0	0.0563	0.0271
7	1483	1.0	0.0712	0.0272
8	1319	1.0	0.1266	0.0384
9	1028	1.0	0.1973	0.0470
10	289	1.0	0.1110	0.0213
11	340	1.0	0.2610	0.0395
12	329	1.0	0.5054	0.0656
13	121	1.0	0.3717	0.0354
14	19	1.0	0.1169	0.0089
15	0	1.0	0.0000	0.0000

TOTAL VOLUME OF PARTICLES = 1.9741 ppmV

TABLE 5. SEDIMENT TRAP STATIONS

STATION	LOCATION		TRAP DEPTH (METERS)	DEPLOYED	RECOVERED	DEPLOYMENT INTERVAL (DAYS)
	LAT. °N	LONG. °W		24/03/82	03/04/82	
				TIME		
ST-1 (97m)	55°24.57'	129°41.11'	30	2328	1140	9.50
			67	2332	1135	9.50
ST-2 (256m)	55°25.92'	129°40.16'	30	2247	1110	9.50
			70	2252	1105	9.50
			150	2255	1100	9.51
			226	2259	1055	9.52
ST-3 (387m)	55°27.17'	129°36.92'	30	2046	1010	9.53
			70	2049	1005	9.54
			150	2056	0955	9.54
			300	2100	0950	9.55
			353	2103	0945	9.56
ST-4 (245m)	55°26.75'	129°31.55'	30	2143	0855	9.44
			70	2146	0850	9.45
			150	2150	0840	9.46
			208	2153	0830	9.47

TABLE 6(a). SEDIMENT TRAP SUBSAMPLING DATA MARCH/APRIL 1982

SIDE a - TRAP CONTAINING FORMALIN + DYE  
 SIDE b - NO FORMALIN OR DYE

STN.	DEPTH (m)	TIME (DAYS)	SIDE OF TRAP	TOTAL VOLUME (mL)	VOLUME FOR POC,N ANALYSIS (mL)	VOLUME FOR CHLa ANALY. (mL)	VOLUME FOR MICRO- SCOPE ANALY. (mL)	SUBSAMPLES FOR METAL ANALYSIS AND DRY WEIGHT DETERMINATION		
								VOL. (mL)	WEIGHT OF SEDIMENT (mg)	CONC. (gL <sup>-1</sup> )
ST-1	30	9.50	a <sup>1</sup>	590	30	8.4	2.2	198	398.3	2.01
					36			194	410.9	2.12
					31					
	67	9.49	b	645	31	6.6	2.4	244	485.6	1.99
								246	490.2	1.99
ST-2	30	9.50	a	530	24	-	2.6	198	409.8	2.07
								194	417.0	2.15
	70	9.50	b	610	23	9.3	1.5	216	411.8	1.91
								210	394.2	1.88
70	9.50	a	505	31	-	2.5	192	470.6	2.45	
							192	471.3	2.45	
70	9.50	b	596	30	7.0	1.7	202	436.6	2.16	
							198	429.3	2.17	

TABLE 6(a). SEDIMENT TRAP SUBSAMPLING DATA (CONTINUED)

MARCH/APRIL 1982

SIDE a - TRAP CONTAINING FORMALIN + DYE

SIDE b - NO FORMALIN OR DYE

SUBSAMPLES FOR METAL  
ANALYSIS AND DRY  
WEIGHT DETERMINATION

STN.	DEPTH (m)	TIME (DAYS)	SIDE OF TRAP	TOTAL VOLUME (mL)	VOLUME FOR POC,N ANALYSIS (mL)	VOLUME FOR CHLa ANALY. (mL)	VOLUME FOR MICRO- SCOPE ANALY. (mL)	SUBSAMPLES FOR METAL ANALYSIS AND DRY WEIGHT DETERMINATION		
								VOL. (mL)	WEIGHT OF SEDIMENT (mg)	CONC. <sub>1</sub> (gL <sup>-1</sup> )
ST-2	150	9.51	a	510	30	-	1.8	400	1074.8	2.69
			b	548	30	7.2	2.2	205 192	508.61 559.54	2.48 2.46
	226	9.52	a <sup>2</sup>	556	30	-	1.8	250 150	894.6 559.5	3.58 3.73
			b	640	30	6.8	2.0	500	1633.4	3.27
ST-3	30	9.53	a	618	40	-	3.5	230 227	234.0 220.9	1.02 0.97
			b	655	40	6.3	2.2	250 246	240.7 490.2	0.96 0.96
	70	9.54	a	575	40	-	1.8	234 234	259.2 221.0	1.11 0.94
			b <sup>2</sup>	510	40	7.8	2.2	206 198 67	258.4 133.3 70.64	1.25 0.67 <sup>4</sup> 1.07

TABLE 6(a). SEDIMENT TRAP SUBSAMPLING DATA (CONTINUED)

MARCH/APRIL 1982

SIDE a - TRAP CONTAINING FORMALIN + DYE  
 SIDE b - NO FORMALIN OR DYE

STN.	DEPTH (m)	TIME (DAYS)	SIDE OF TRAP	TOTAL VOLUME (mL)	VOLUME FOR POC, N ANALYSIS (mL)	VOLUME FOR CHL <sub>a</sub> ANALY. (mL)	VOLUME FOR MICRO- SCOPE ANALY. (mL)	SUBSAMPLES FOR METAL ANALYSIS AND DRY WEIGHT DETERMINATION		
								VOL. (mL)	WEIGHT OF SEDIMENT (mg)	CONC. (g L <sup>-1</sup> )
ST-3	150	9.54	a	600	30	-	2.0	235	283.0	1.20
								242	309.5	1.28
			b	626	30	7.8	3.3	238	305.1	1.28
								214	277.2	1.30
	300	9.55	a	560	30	-	2.5	218	523.3	2.40
								224	556.4	2.48
			b	576	30	7.8	2.2	235	549.6	2.34
								230	551.1	2.40
353	9.56	a	600	60	-	1.0	94	841.0	8.95	
							90	844.8	9.39	
							96	908.0	9.46	
							98	937.8	9.57	
							92	907.7	9.87	
b	700	70	4.3	1.5	106	830.9	7.84			
					106	877.5	8.28			
					102	841.0	8.25			
					112	941.1	8.40			
					134	1118.4	8.35			

TABLE 6(a). SEDIMENT TRAP SUBSAMPLING DATA (CONTINUED) MARCH/APRIL 1982

SIDE a - TRAP CONTAINING FORMALIN + DYE  
 SIDE b - NO FORMALIN OR DYE

STN.	DEPTH (m)	TIME (DAYS)	SIDE OF TRAP	TOTAL VOLUME (mL)	VOLUME FOR POC,N ANALYSIS (mL)	VOLUME FOR CHLa ANALY. (mL)	VOLUME FOR MICRO- SCOPE ANALY. (mL)	SUBSAMPLES FOR METAL ANALYSIS AND DRY WEIGHT DETERMINATION			
								VOL. (mL)	WEIGHT OF SEDIMENT (mg)	CONC. (g L <sup>-1</sup> )	
ST-4	30	9.44	a <sup>1</sup>	500	30	-	3.7	250	149.0	0.60	
								212	121.0	0.57	
		b <sup>2</sup>	435	30	7.0	1.8	202	130.2	0.64		
							194	126.2	0.65		
	70	9.45	a		592	26	-	1.7	250	740.3	2.96
									250	741.3	2.97
b				568	26	6.4	1.8	250	735.4	2.94	
								250	722.6	2.89	
150	9.46	a		620	12	-	0.5	238	8578.1	36.04	
								248	8788.9	35.44	
		b		825	12	1.8	0.4	250	6826.8	27.31	
								252	6853.9	27.20	
								248	6805.5	27.44	

TABLE 6(a). SEDIMENT TRAP SUBSAMPLING DATA (CONTINUED)

MARCH/APRIL 1982

SIDE a - TRAP CONTAINING FORMALIN + DYE  
 SIDE b - NO FORMALIN OR DYE

STN.	DEPTH (m)	TIME (DAYS)	SIDE OF TRAP	TOTAL VOLUME (mL)	VOLUME FOR POC,N ANALYSIS (mL)	VOLUME FOR CHLa ANALY.	VOLUME FOR MICRO- SCOPE ANALY. (mL)	SUBSAMPLES FOR METAL ANALYSIS AND DRY WEIGHT DETERMINATION		
								VOL. (mL)	WEIGHT OF SEDIMENT (mg)	CONC. (g <sup>L</sup> - <sup>1</sup> )
ST-4	208	9.47	a <sup>3,5</sup>	950	11	-	0.4	938.6	77,885.0	82.98
			b <sup>5</sup>	880	-	-	-	200	20,740.0	103.7
								222	22,555.2	101.6
								196	20,148.8	102.8
							250	26,175.0	104.7	

- (1) DYE FLUSHED OUT OF TRAP
- (2) Small amount of 1st metal subsample leaked during filtration
- (3) Confusion during subsampling, therefore, all subsample weights were combined
- (4) Value suspiciously low - leak during filtration
- (5) Mine tailings visible

TABLE 6(b). AMOUNTS CAUGHT IN SEDIMENT TRAPS, MARCH/APRIL 1982

STATION	DEPTH	TOTAL SEDIMENTATION $\text{gm}^{-2} \text{day}^{-1}$		SEDIMENTATION $\text{gm}^{-2} \text{day}^{-1}$ a and b sides $\bar{X} \pm s$
		DRY WEIGHT ( $\bar{X} \pm s$ (n))		
		a) Formaldehyde + Dye	b) No Preservative	
ST-1	30	9.95 $\pm$ 0.37(2)	10.47 $\pm$ 0.00(2)	10.21 $\pm$ 0.37
	67	14.19 $\pm$ 0.59(2)	14.33 $\pm$ 0.36(2)	14.26 $\pm$ 0.10
ST-2	30	9.13 $\pm$ 0.24(2)	9.43 $\pm$ 0.11(2)	9.28 $\pm$ 0.21
	70	10.10 $\pm$ 0.00(2)	10.53 $\pm$ 0.04(2)	10.32 $\pm$ 0.30
	150	11.18	11.03 $\pm$ 0.06(2)	11.11 $\pm$ 0.11
	226	*16.55 $\pm$ 0.48(2)	17.04	16.97 $\pm$ 0.11
ST-3	30	5.00 $\pm$ 0.18(2)	5.11 $\pm$ 0.00(2)	5.06 $\pm$ 0.08
	70	4.79 $\pm$ 0.56(2)	4.81 $\pm$ 0.53(2)	4.80 $\pm$ 0.01
	150	6.05 $\pm$ 0.28(2)	6.56 $\pm$ 0.07(2)	6.31 $\pm$ 0.36
	300	11.09 $\pm$ 0.26(2)	11.08 $\pm$ 0.20(2)	11.09 $\pm$ 0.01
	353	46.01 $\pm$ 1.62(5)	46.71 $\pm$ 1.26(5)	46.36 $\pm$ 0.49
ST-4	30	2.40 $\pm$ 0.09(2)	2.30 $\pm$ 0.03(2)	2.35 $\pm$ 0.07
	70	14.40 $\pm$ 0.03(2)	13.58 $\pm$ 0.16(2)	13.99 $\pm$ 0.58
	150	181.6 $\pm$ 2.2 (2)	184.7 $\pm$ 0.8 (3)	183.2 $\pm$ 2.2
	208	645.3	743.4 $\pm$ 9.5 (4)	694.0 $\pm$ 69.0

\* One filter leaked slightly  
Average is taken from 16.89 and 17.04

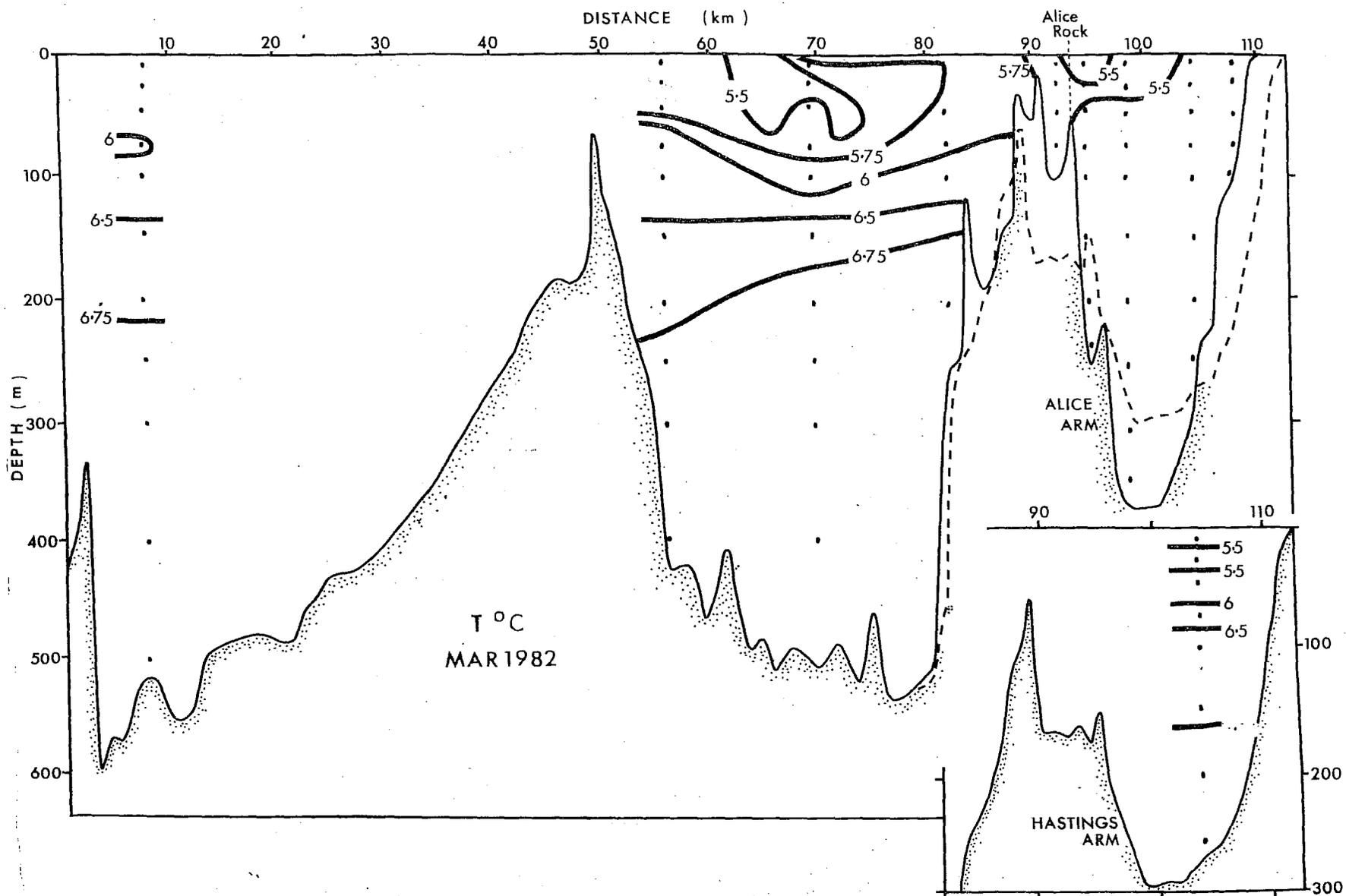
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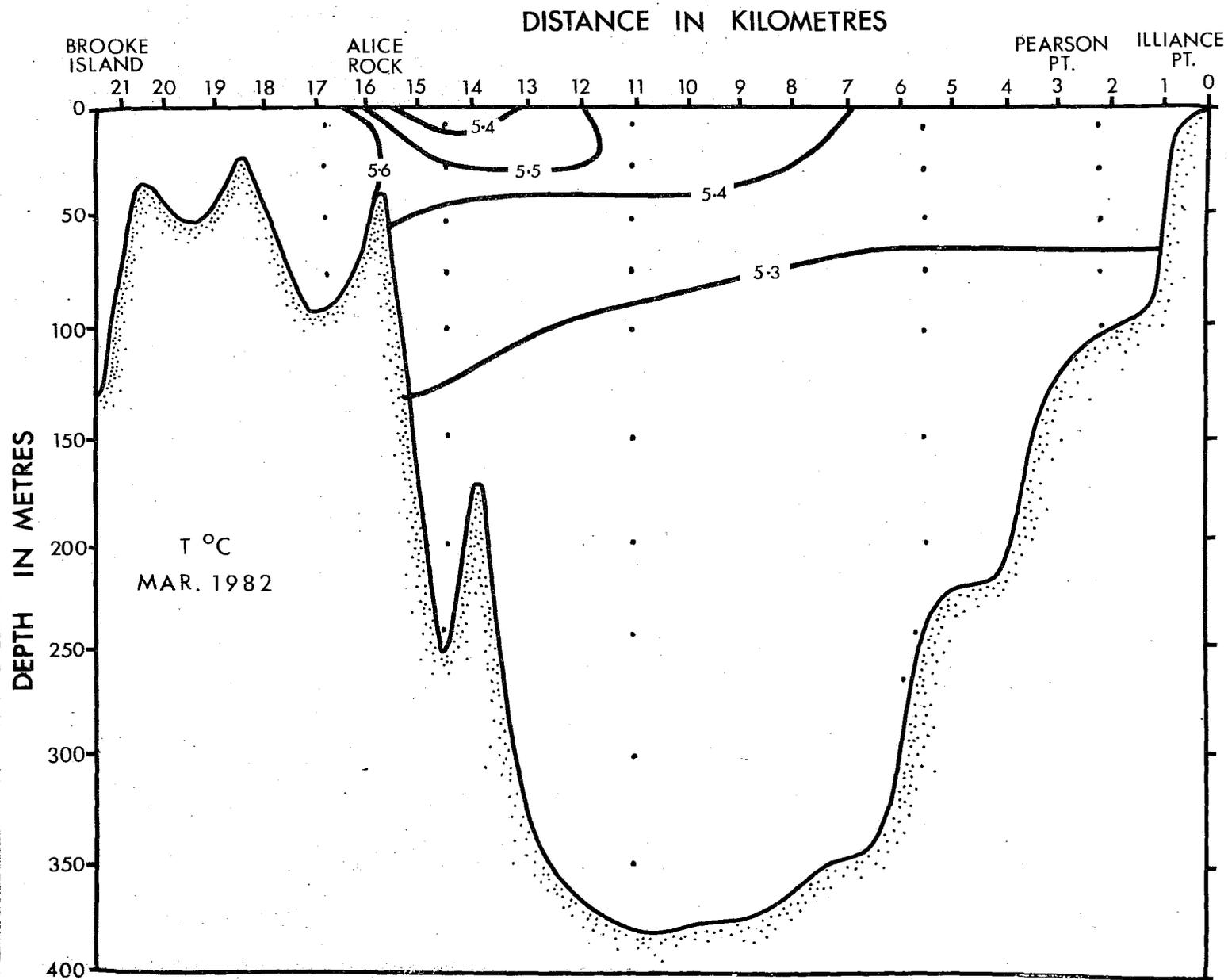
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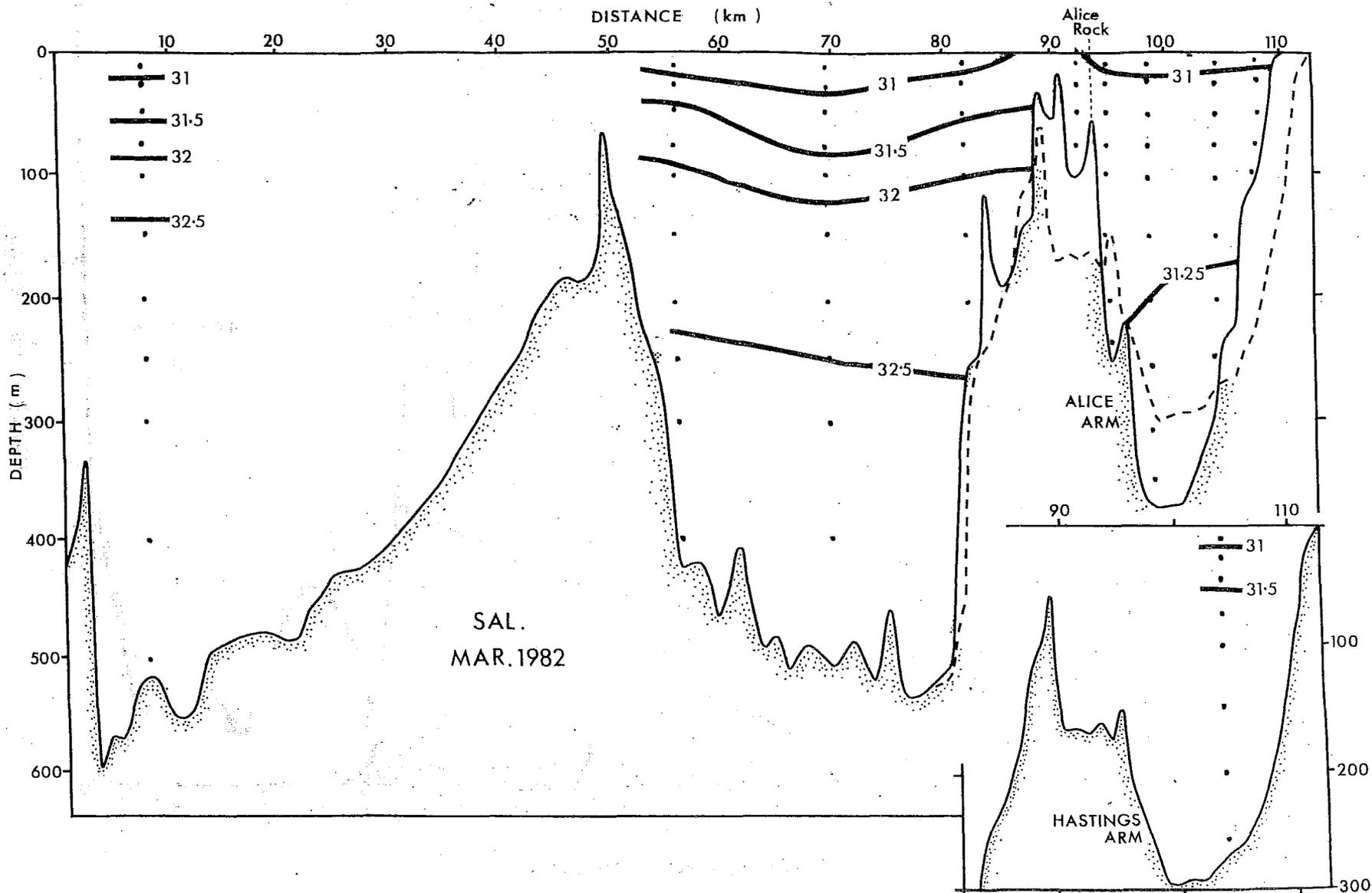
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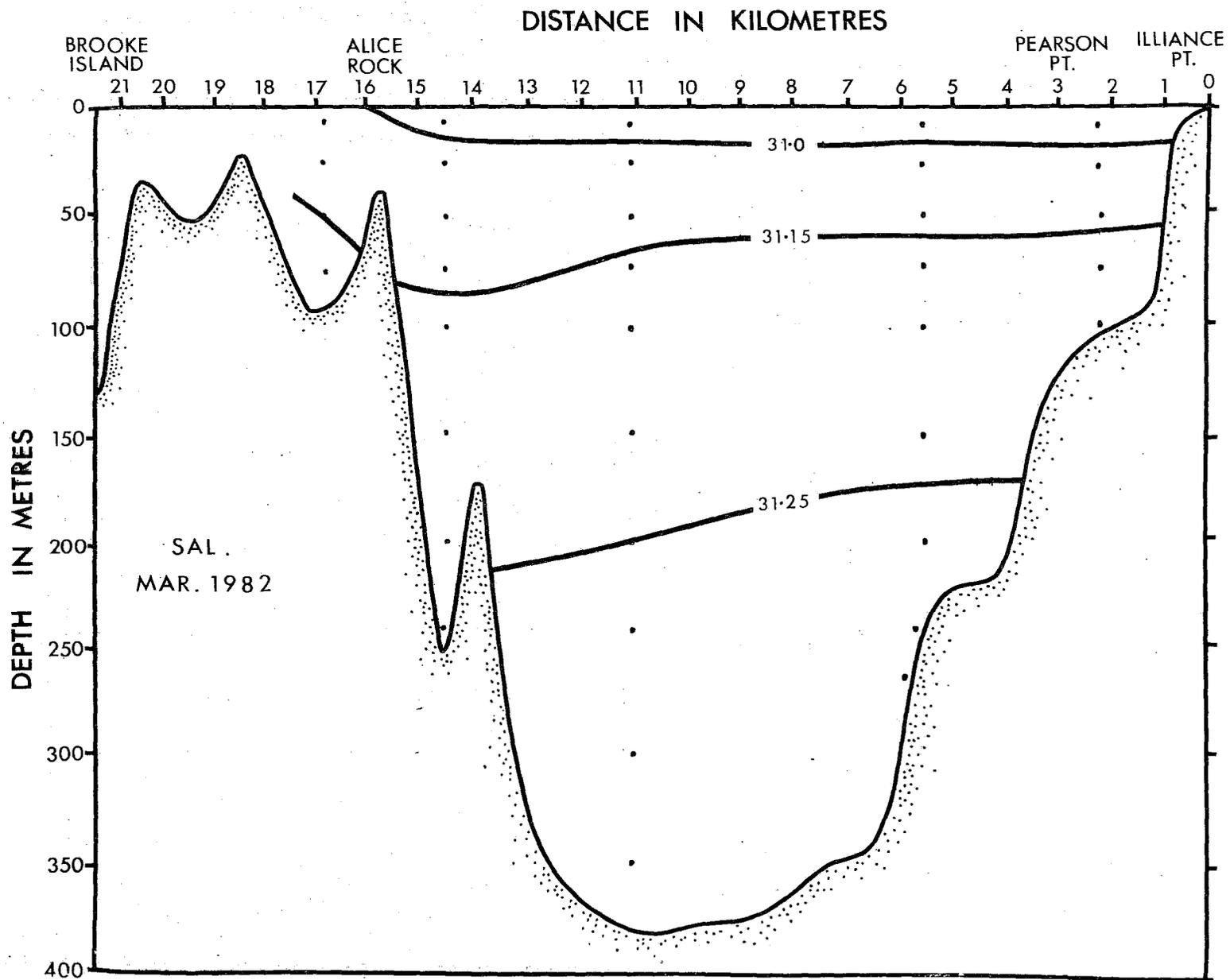
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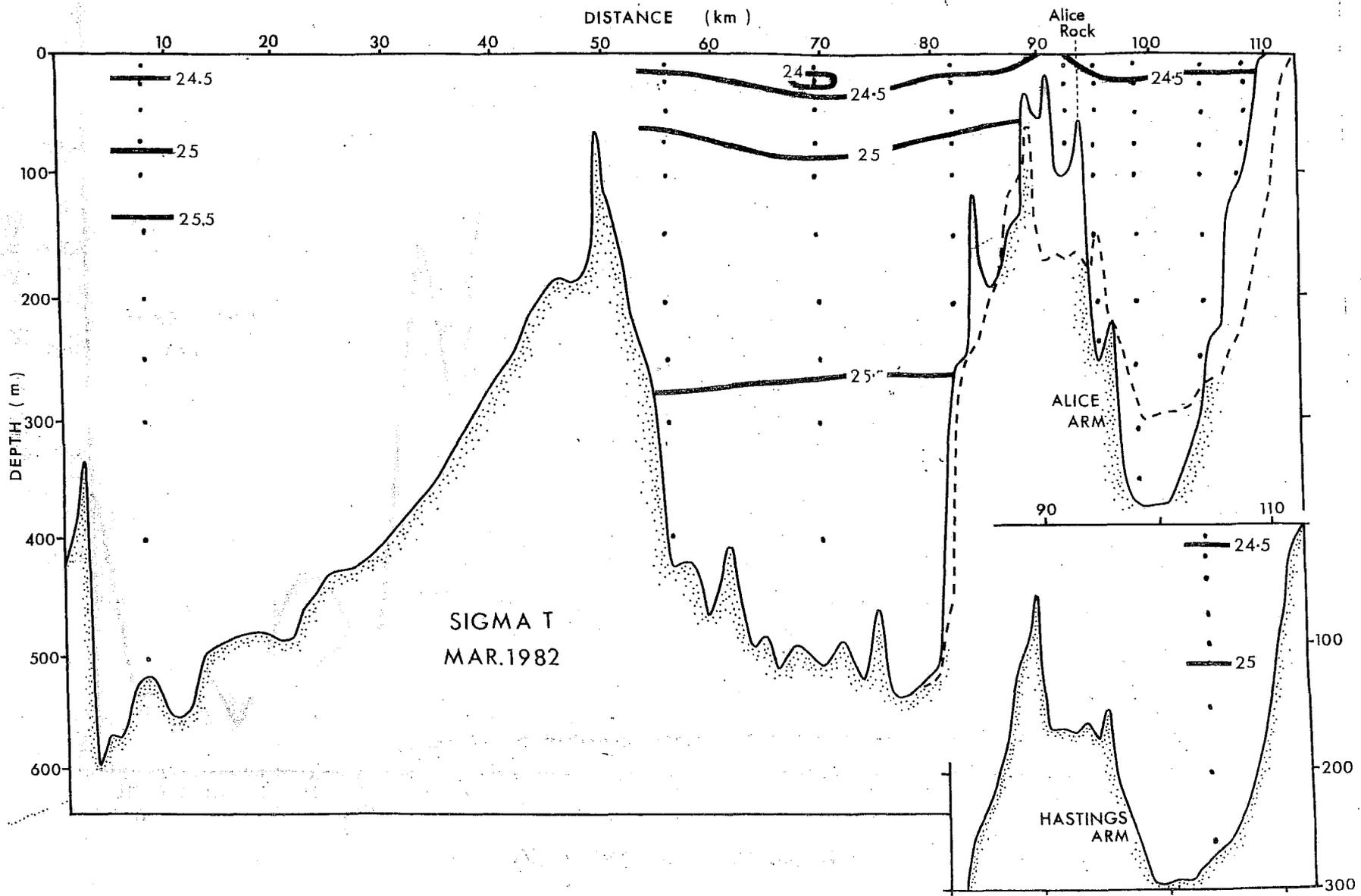
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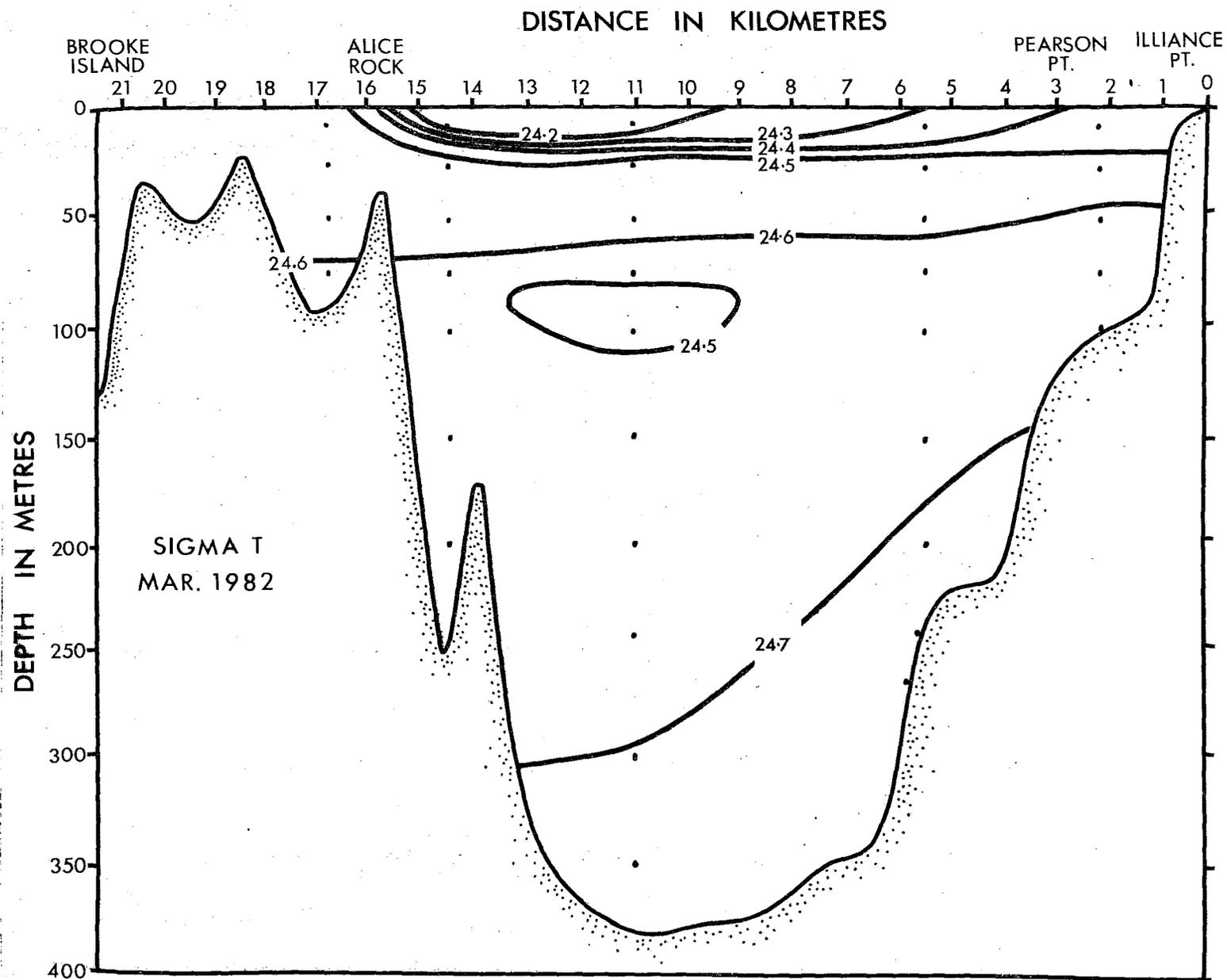


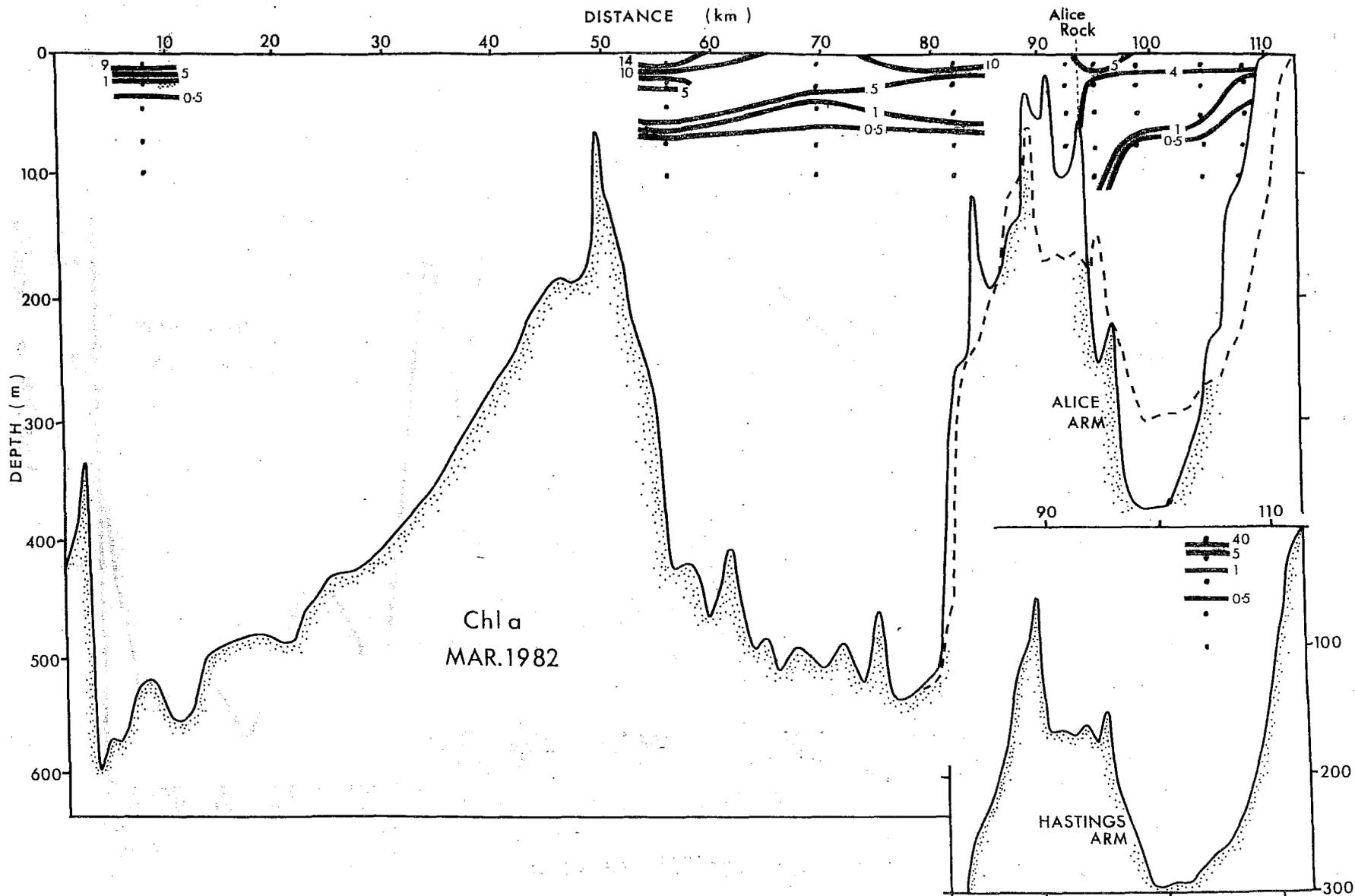


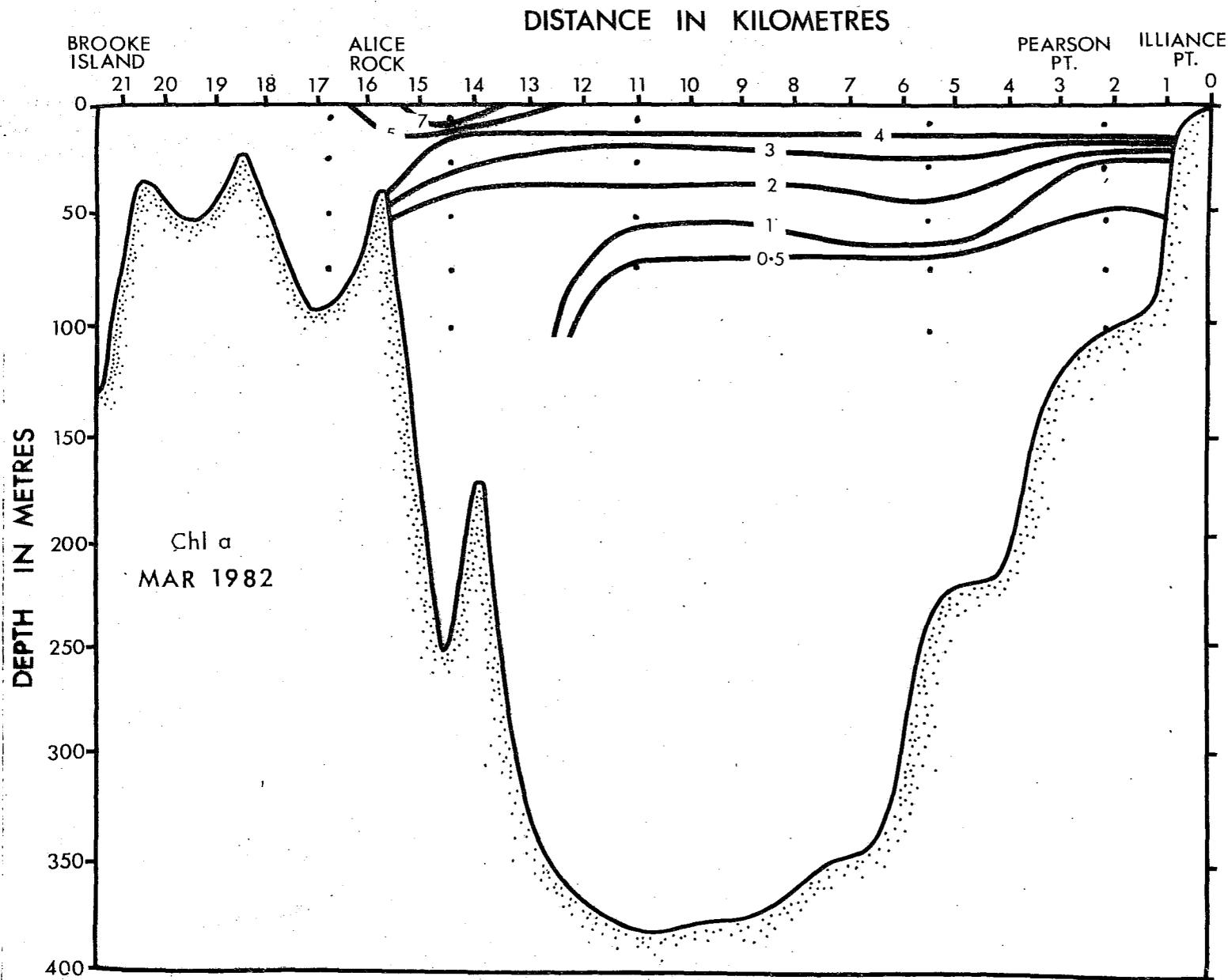


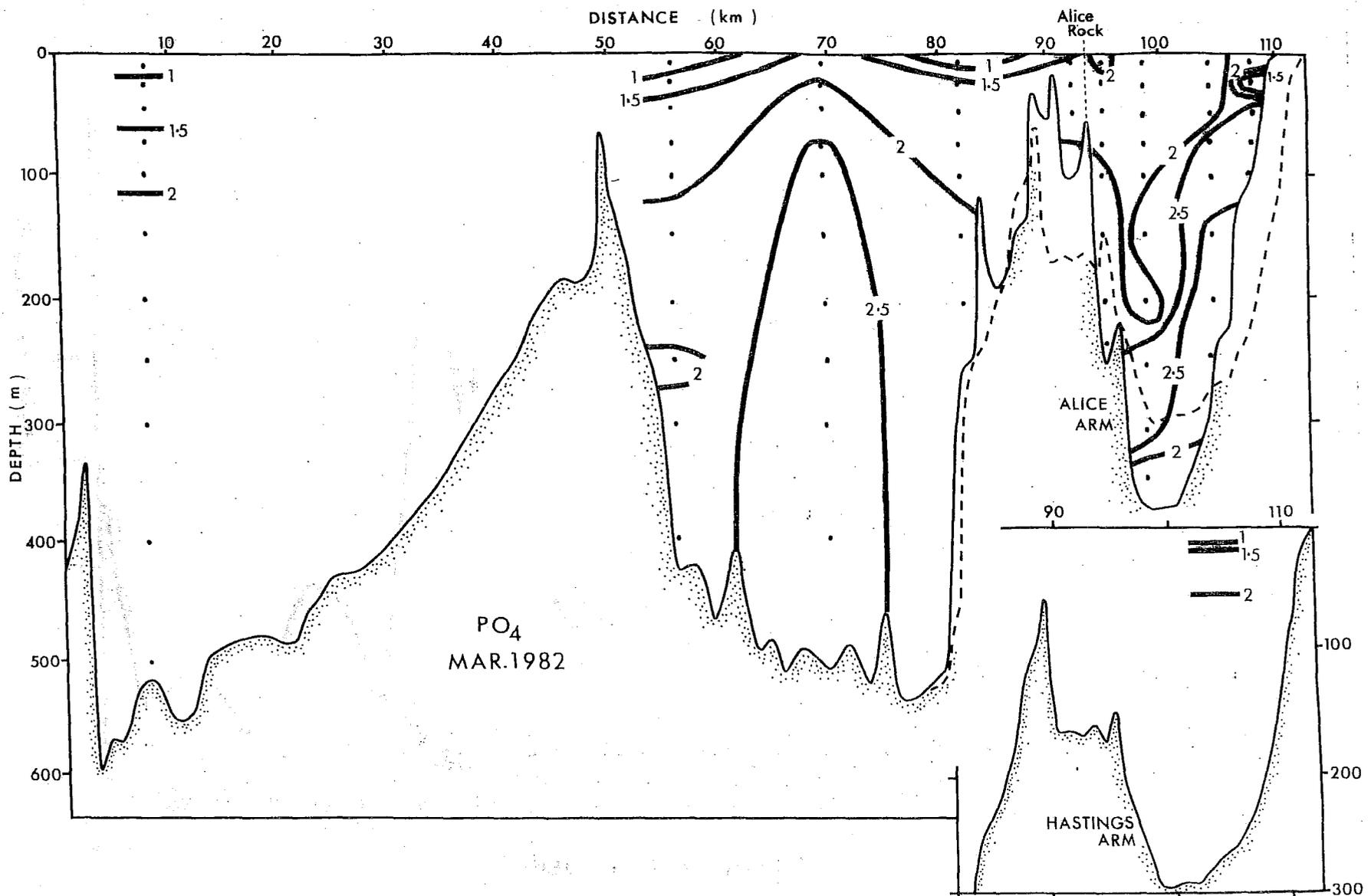


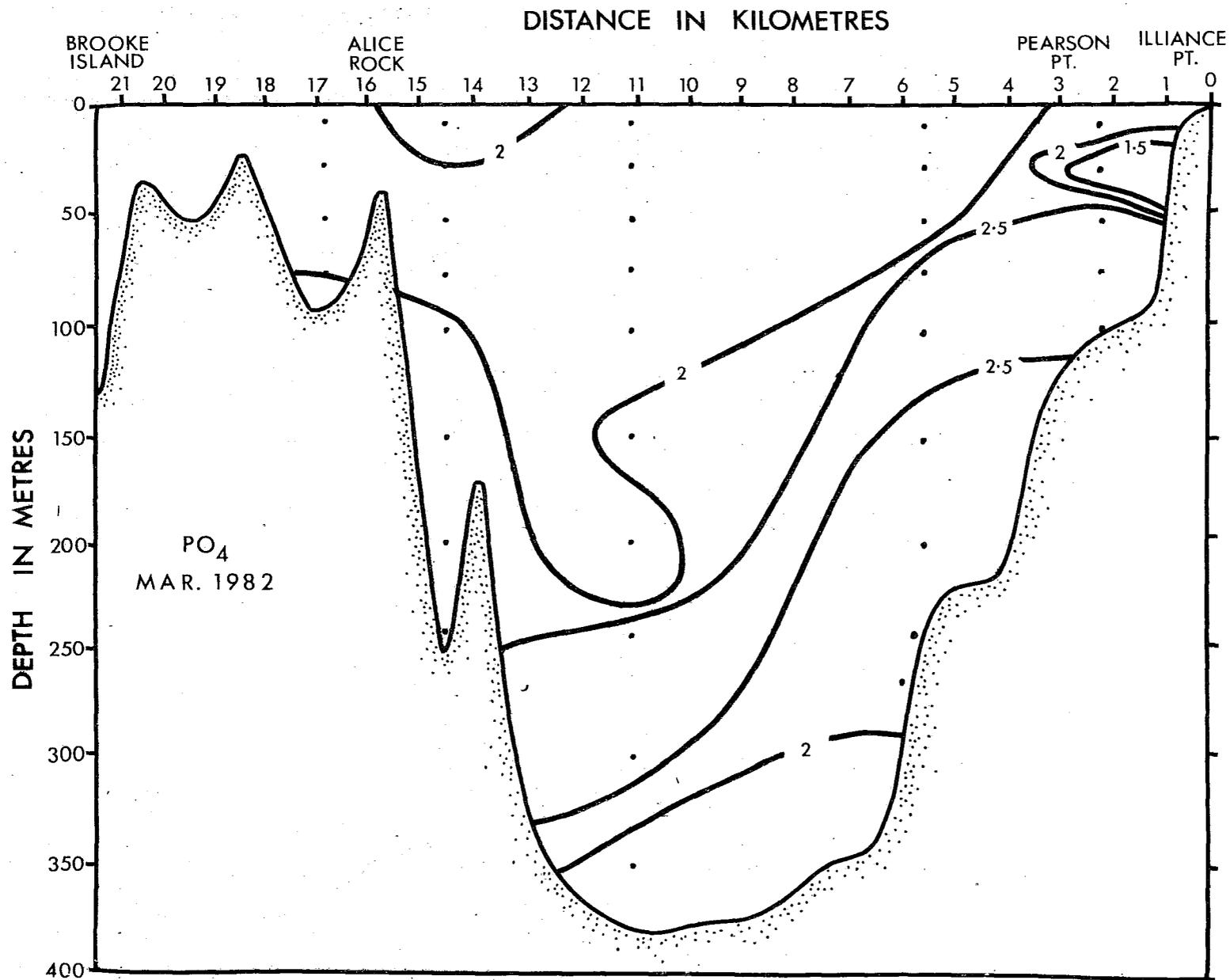


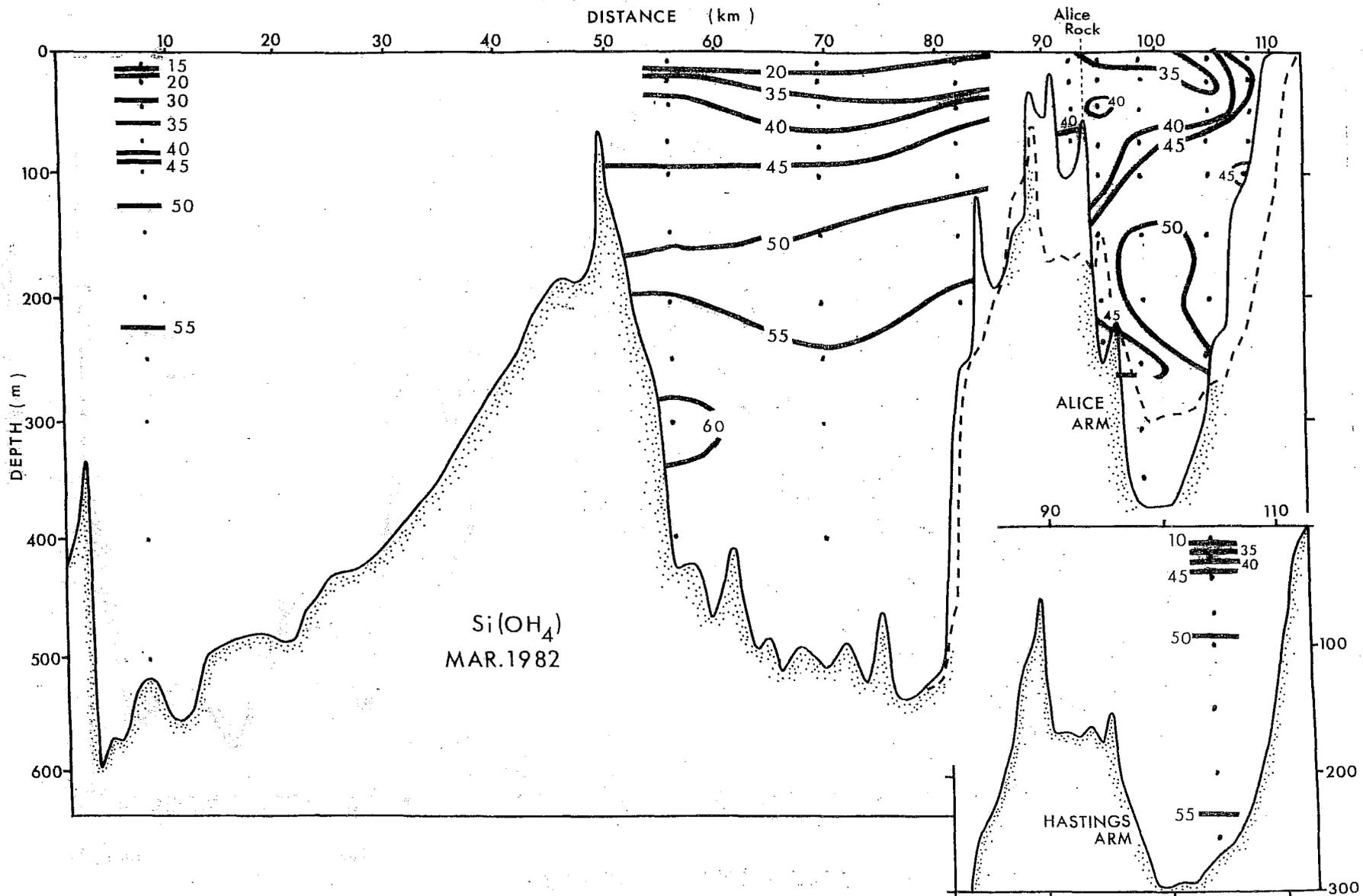


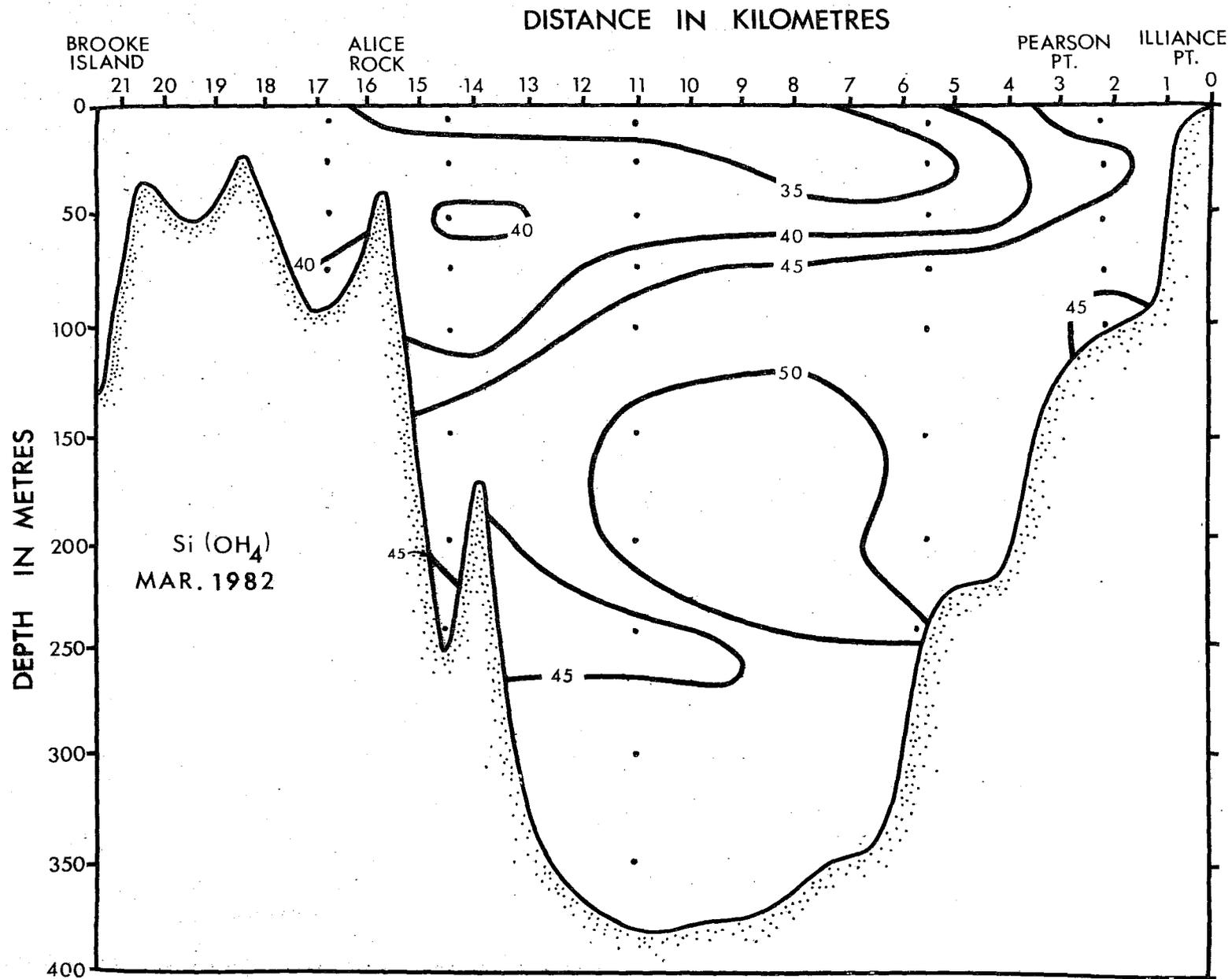


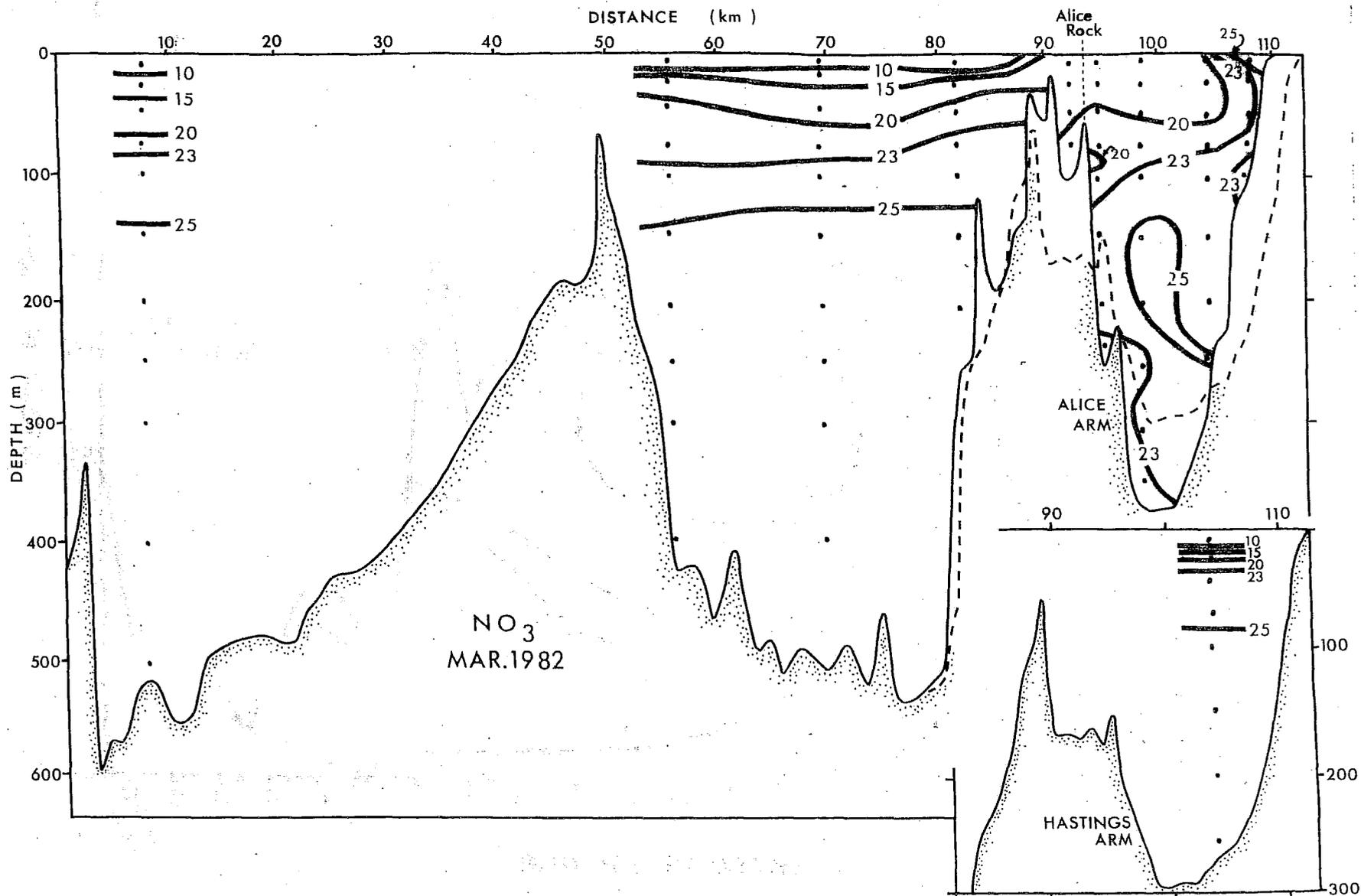


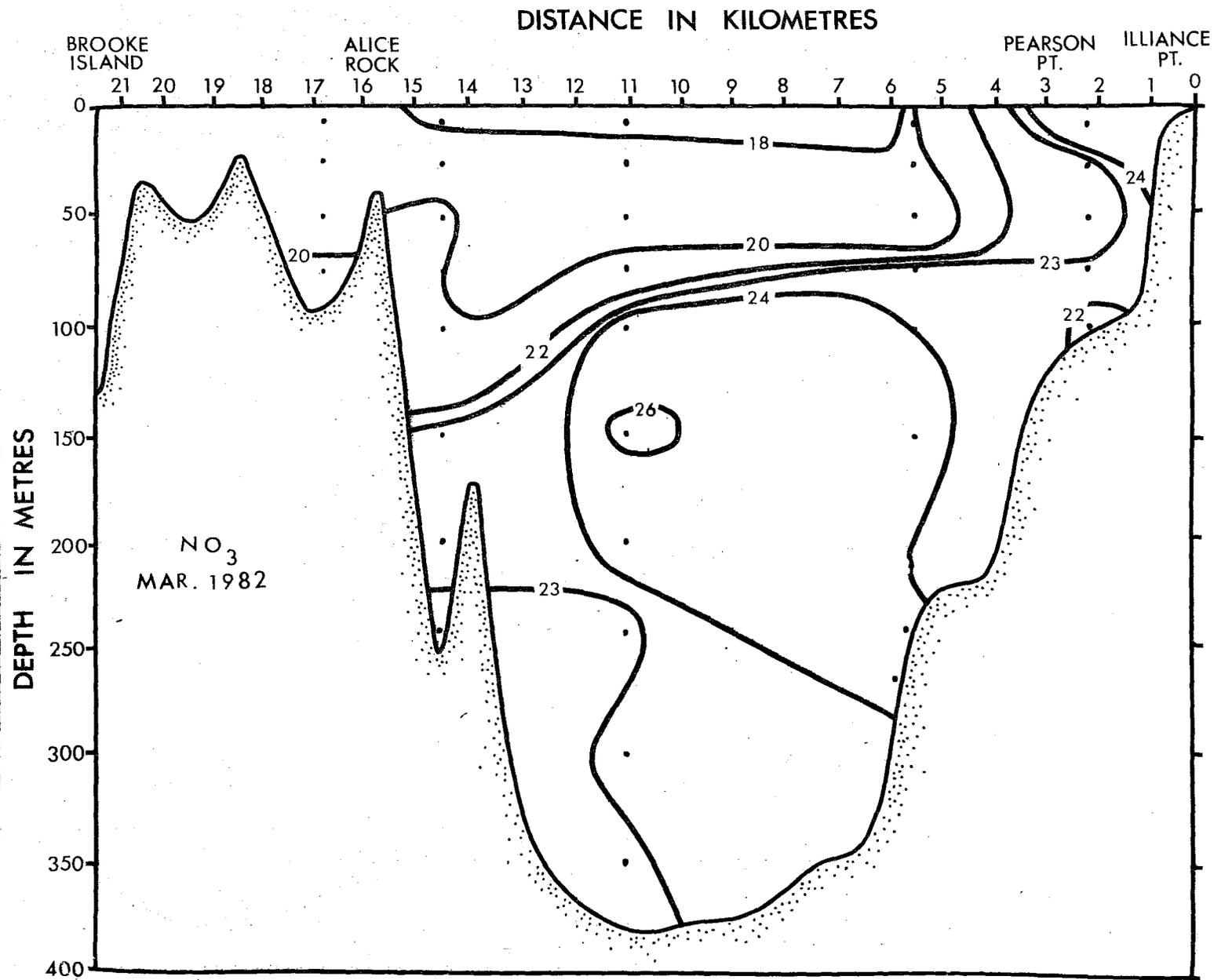


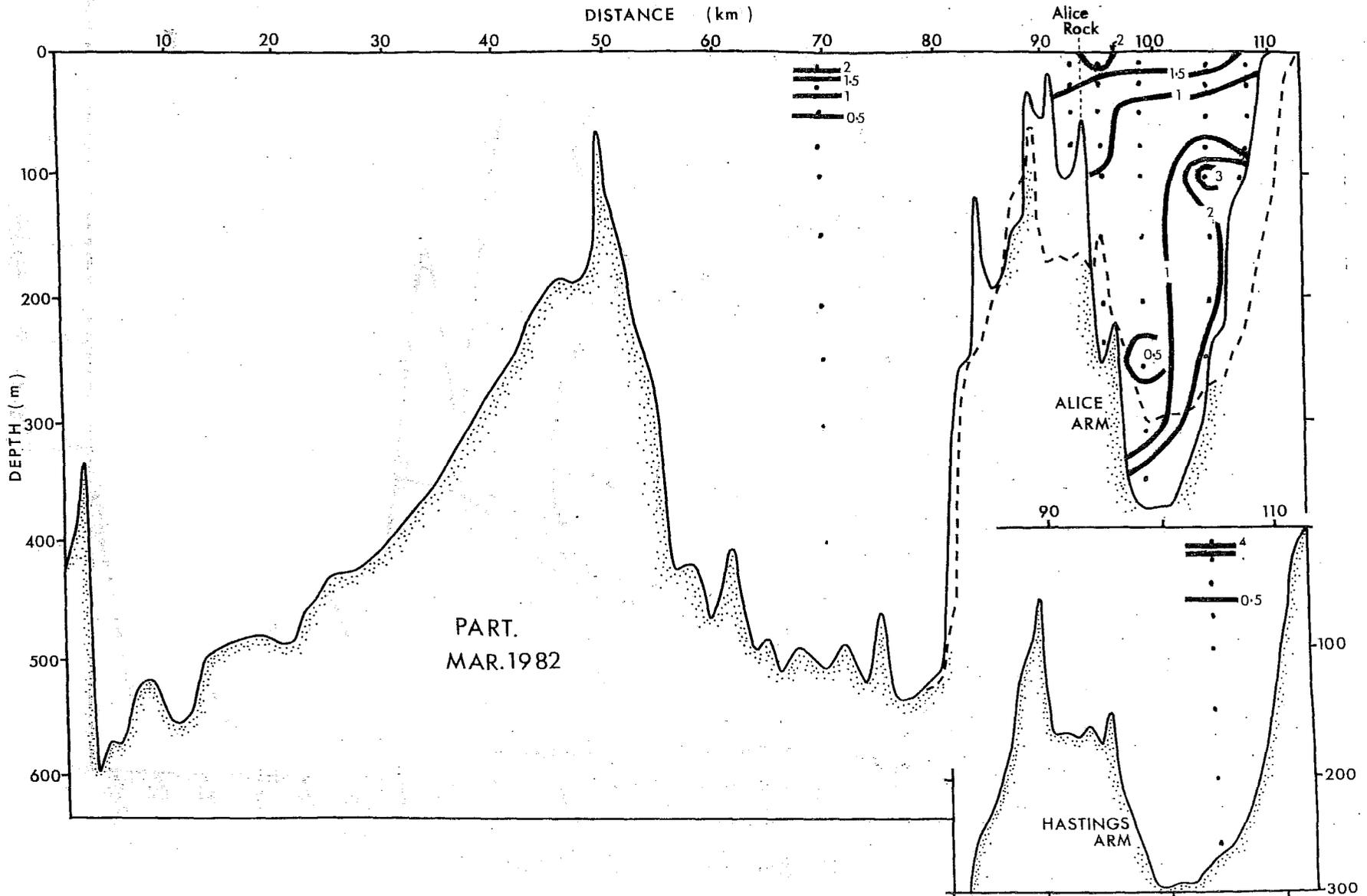


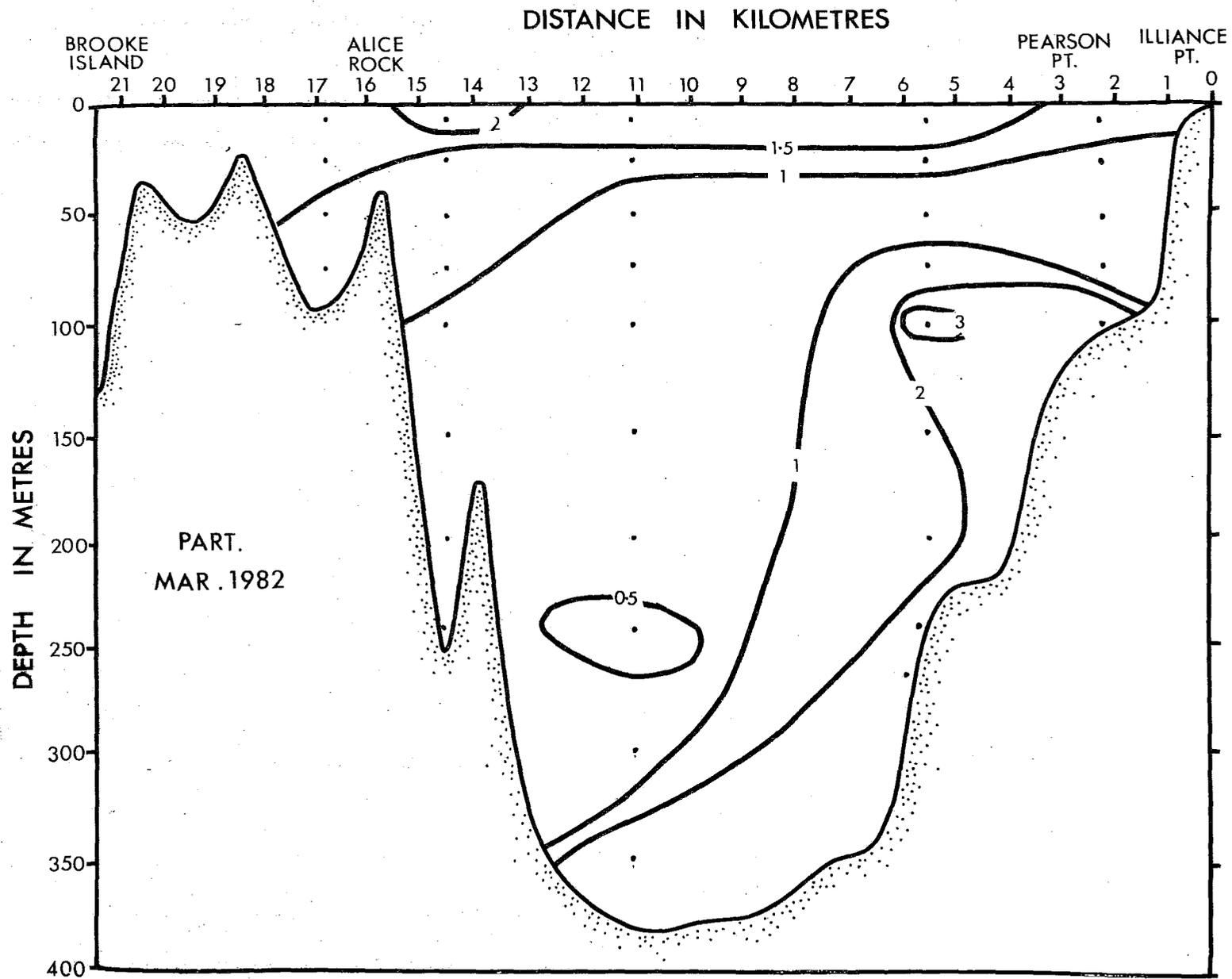


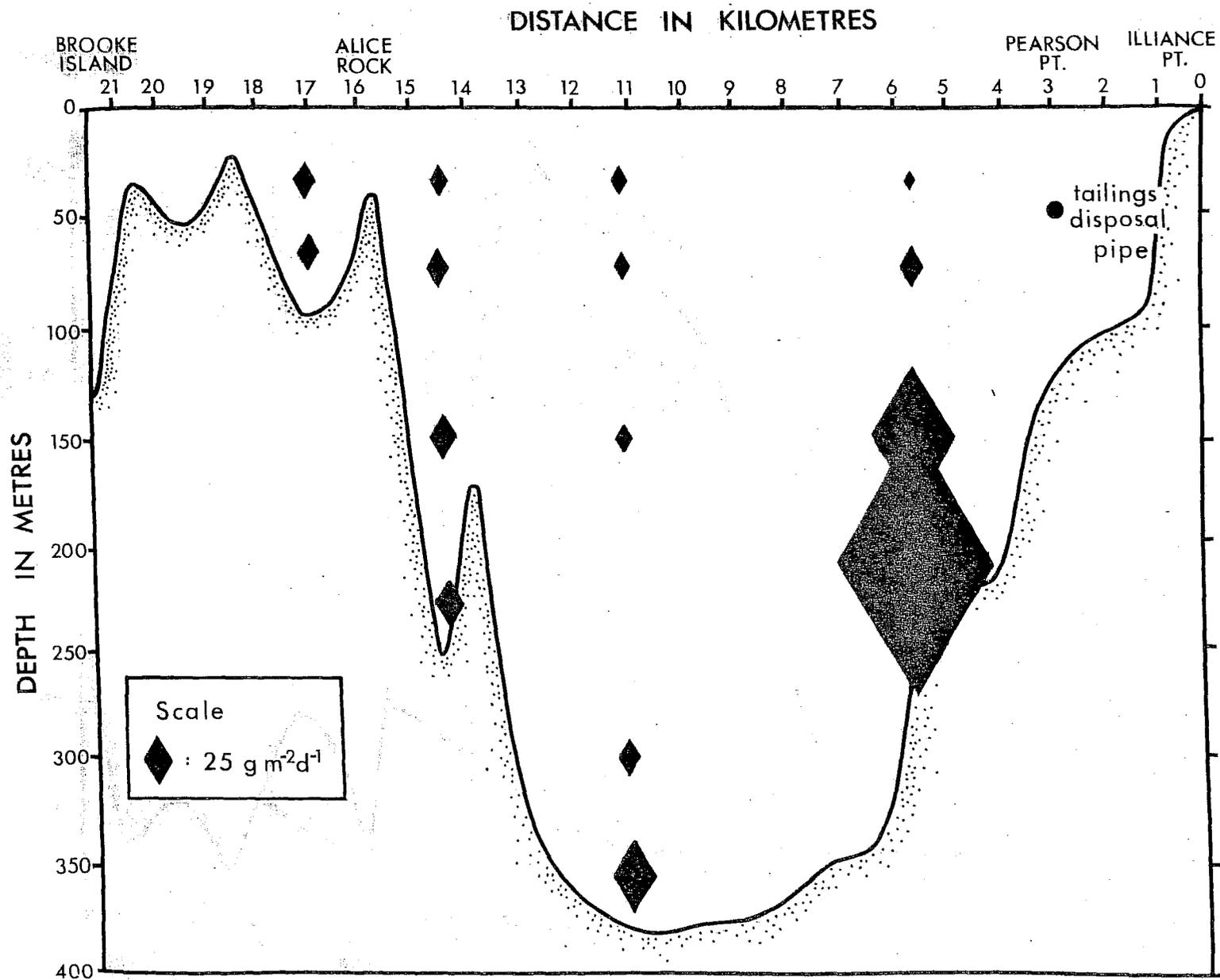












SEDIMENTATION in ALICE ARM MARCH '82