

This series includes unpublished preliminary reports and data records not intended for general distribution. They should not be referred to in publications without clearance from the issuing Board establishment and without clear indication of their manuscript status.

FISHERIES RESEARCH BOARD OF CANADA

MANUSCRIPT REPORT SERIES

No. 1080

Data Record

First Canadian Trans-Pacific

Oceanographic Cruise

March to May, 1969

Biological, Chemical and Physical Data

Anonymous

Biological Station, Nanaimo, B.C.

February 1970

APR 29 1970

This series includes unpublished preliminary reports and data records not intended for general distribution. They should not be referred to in publications without clearance from the issuing Board establishment and without clear indication of their manuscript status.

**FISHERIES RESEARCH BOARD
OF CANADA**

MANUSCRIPT REPORT SERIES

No. 1080

Data Record

First Canadian Trans-Pacific

Oceanographic Cruise

March to May, 1969

Biological, Chemical and Physical Data

Anonymous

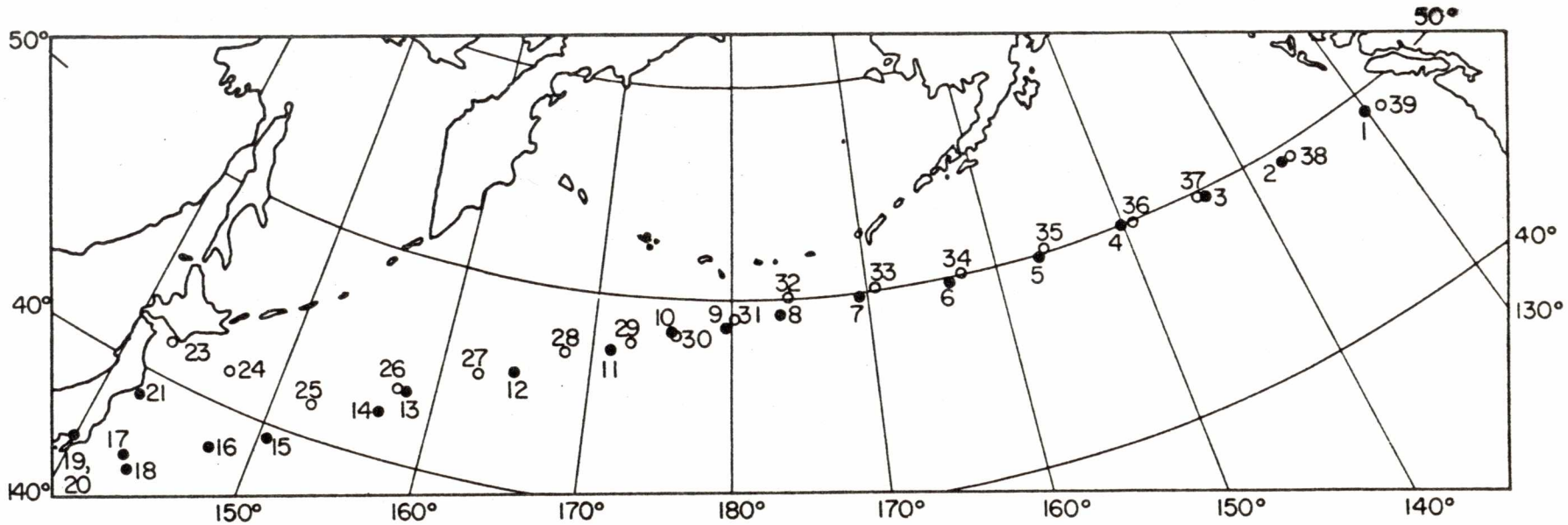
Biological Station, Nanaimo, B.C.

February 1970

Table of Contents

	<u>Page No.</u>
Map of cruise track	iii
Introduction	1
Personnel	1
Explanation of data headings	1
Table 1. Partial pressure of carbon dioxide in air and surface sea water.	7
Table 2. Inorganic phosphate, silicate and nitrate content of surface sea water.	19
Table 3. Mixed layer depth	28
Table 4. Temperature and salinity profiles with depth.	31
Table 5. Expendable bathythermograph temperature profiles with depth.	34
Table 6. Total daily radiation and hours of daylight.	42
Table 7. Extinction coefficient and Secchi depth.	43
Table 8. Chlorophyll <u>a</u> profiles with depth.	44
Table 9. Primary production profiles with depth and daily production per unit area.	53
Table 10. Nutrient profiles with depth.	57
Table 11. Microbiological profiles with depth.	63
Table 12. Microzooplankton - continuous sampling through seawater loop. (Number/m ³).	65
Table 13. Microzooplankton - 20 m oblique tow during midday (Number/m ³).	73
Table 14. Microzooplankton - surface tow during darkness (Number/m ³).	74
Table 15. Microzooplankton - 300 m oblique tow during darkness (Number/m ³).	75
Table 16. Zooplankton - midday 150 m vertical hauls. (Wet weights and identifications by Canadian Oceanographic Identification Centre).	76

Table 17.	Zooplankton - 20 m oblique tow during midday (mg wet wt/m ³).	77
Table 18.	Zooplankton - Surface tow during darkness (mg wet wt/m ³).	78
Table 19.	Zooplankton - 300 m oblique tow during darkness (mg wet wt/m ³).	79
Table 20.	Zooplankton - Surface I-K trawl during darkness (mg wet wt/m ³).	80
Table 21.	Zooplankton - 300 m oblique I-K trawl during darkness (mg wet wt/m ³).	81
Table 22.	Fish - Surface I-K trawl during darkness (Number/1000 m ³).	82
Table 23.	Fish - 300 m oblique I-K trawl during darkness (Number/tow; fork length in mm).	83
Table 24.	Cephalopod species collected in 300 m oblique I-K trawls (Identifications and measurements by W. G. Fields, University of Victoria).	88
Table 25.	Pelagic shrimp species collected in 300 m oblique I-K trawls (Identifications and counts by R. A. Wasmer, Oregon State University, Corvallis, Oregon).	91



Map of cruise track.

Introduction

This report contains data collected during the first Trans-Pacific cruise of the Canadian research vessel ENDEAVOUR during March and April, 1969.

Personnel:

	T. R. Parsons - Scientist in charge
W. E. Barraclough	D. G. Robinson
O. D. Kennedy	K. Stephens
R. J. LeBrasseur	W. P. Wickett

Other participants:

H. Seki	University of Tokyo, NRC Post-Doctoral Fellowship
S. Hagen	Oregon State University, U.S.A.
K. Park	Oregon State University, U.S.A.

Explanation of data headings

Depth: Indicated depth of expendable bathythermograph or sample in meters.

Station: Station number, first two letters, cruise identification; first two digits, serial number of day; second two digits, serial number of station.
Daily noon stations are identified by cruise identification and serial number of day.

Date: Local date, day, month, year, unless otherwise stated. Date marked with superscript ² is day gained on crossing dateline.

Table 1:

Date: G.M.T. Month, day.

Time: G.M.T. Hours, minutes.

P_{CO_2} , Sea: Partial pressure of CO_2 in sea water, in parts per million of an atmosphere pressure.

Temp. Equ.: Temperature of the CO_2 equilibrator, in degrees Celsius.

Salinity: Salinity of sea water drawn from the equilibrator, in parts per thousand.

P_{CO_2} , Air: Partial pressure of CO_2 in air, in parts per million of an atmosphere pressure.

Temp. Air: Air temperature, in degrees Celsius.

RH: Relative humidity, in per cent.

Saturation: P_{CO_2} , Sea minus P_{CO_2} , Air, in parts per million of an atmosphere pressure.

Table 2:

Nitrate) Concentration of nitrate-nitrogen, silicate-silicon and phosphate-
Silicate) phosphorus, in microgram-atoms per liter.
Phosphate)

Table 3:

Day: Serial number of day.

Station: Serial number of station.

The major mixed layer depth in meters, is shown in the centre of the square. Depths of minor upper and lower mixed layers are shown in the top left-hand and bottom right-hand corners, respectively.

The data are derived from expendable bathythermograph traces.

Table 4:

XBT: Serial number of bathythermograph trace.

Temp: In-situ temperature indicated by expendable bathythermograph. Asterisked values are corrected reversing thermometer temperatures for that depth.

Sal.: Salinity in parts per thousand of sample from indicated depth, determined with laboratory salinometer. Results rounded to two decimal places.

Table 5:

Ref. Temp. °C: Sea surface temperature measured by bucket thermometer or injection thermometer, in degrees Celsius.

Table 6:

- Radiation: Total daily radiation in langley's per day, measured with an actinograph.
- Hr. min.: Hours and minutes of daylight from local sunrise to local sunset.

Table 7:

- Extinction coefficient: Extinction coefficient determined from the transmission of radiation of 4300 Angstroms wavelength, for depths from 0 to 20 m.
- Secchi depth: Secchi depth in meters, observed at daily noon station.

Table 9:

- Production Column 1: Productivity in milligrams carbon per cubic meter per hour calculated from the uptake of carbon-14. The sample from the indicated depth was incubated at simulated in-situ light intensities for the indicated depth.
- Column 2: The average total hourly production per unit area for the period of incubation.
- Column 3: The daily total production in milligrams carbon per square meter per day.

Table 10:

- Nitrate) Concentration of nitrate-nitrogen, silicate-silicon and phosphate-phosphorus in microgram atoms per liter. Determined by an automated method.
Silicate)
Phosphate)

Table 11:

- Heterotrophic bacteria: Determined by the method of Buck and Cleverton (1960).
- Yeasts: Determined by the method of Seki and Fulton (1968).
- Glucose uptake: Rate measured by the uptake of glucose-carbon-14.
- Total bacteria: Direct count by microscopy.

Microzooplankton sampling:

a) Continuous sampling

A 44 micron mesh nylon bag was attached to an outlet of the seawater sampling system. Sea water was sampled at a rate of 23 liters per minute. Samples were taken every 4 hours. Material retained by the bag was backwashed into collecting jars.

b) Euphotic zone

A micro Miller net with mouth opening of 0.001 m^2 and a mesh aperture of 44 microns was lowered to 20 meters and retrieved at a constant rate. Each tow was of 15 minutes' duration following the noon station. The ship's speed during the tow was 3 meters per second.

c) Surface water

A micro Miller net as above was fastened to the Isaacs-Kidd midwater trawl used to sample the surface water for fish and squid.

d) 300 meter oblique tow

A micro Miller net as above was fastened to the Isaacs-Kidd midwater trawl used to sample the bathypelagic water for fish and squid.

Samples were preserved in 2% buffered formalin solution. A Stempel pipette was used for subdividing the sample in the laboratory. Numbers, size and species were determined for the more abundant organisms. Quantities of microzooplankton are reported as number per cubic meter.

Zooplankton sampling:

a) 150 m vertical hauls

At each noon station a cylinder-cone net of 0.25 m^2 mouth area and 350 micron mesh aperture, was hauled vertically at 1-2 m/sec from 150 meters. Identification and wet weight determinations were done by the Canadian Oceanographic Identification Centre, Ottawa, Canada. Wet weight as milligrams per square meter and presence and absence of species is reported.

b) Euphotic zone

A standard Miller net of 0.01 m^2 mouth opening and 350 micron mesh aperture was towed with the micro Miller net in the euphotic zone as described above.

c) Surface water

A standard Miller net was towed with the surface sampling Isaacs-Kidd trawl as described above.

d) 300 meter oblique tow

A standard Miller net was towed with the bathypelagic sampling Isaac-Kidd trawl as described above.

Samples were preserved in 4% buffered formalin solution. Wet weight as milligram per cubic meter and presence or absence of species is reported. Larval and juvenile fish, squid and pelagic shrimp were identified separately.

Sampling for fish and squid:

a) Surface waters

At one hour after sunset, a 6-foot Isaacs-Kidd midwater trawl constructed of 1/4 inch mesh knotless nylon netting and a codend of 1/8 inch knotless netting was towed for 20 minutes over the side of the ship, clear of the wake, with the headline breaking the surface. The speed of tow was 1 1/4 to 1 1/2 m/sec.

b) Bathypelagic waters

A 6-foot Isaacs-Kidd midwater trawl was lowered over the stern of the ship to a depth of approximately 320 meters. The length of warp was 700 meters. The trawl was towed for 5 minutes at this depth and then hauled to the surface at a rate of 0.3 to 0.4 m/sec. The total fishing time varied between 25 to 60 minutes, dependent on the weather and sea condition. Total fishing time was recorded from the time all the warp was out until the net was hauled clear of the surface water. In calculating the volume of water sampled for each deep tow, the ship's speed and hauling speed of the warp were taken into account.

Fish, squid and other invertebrates were preserved in 10% formalin solution.

Identification of fish, squid and pelagic shrimp:

A tentative identification has been made for some species of bathypelagic fish, particularly those from the waters near Japan. The collection of bathypelagic fish is being examined by Dr. D. McAllister and Mr. C. G. Gruchy at the National Museum of Natural Sciences, Ottawa. Complete identification and required changes in nomenclature will be published at a later date.

The squid caught in the trawl were sorted from the samples and have been identified by Dr. Gordon Fields, Head of the Department of Biology, University of Victoria, British Columbia. Descriptions of possible new species will be published at a later date.

The pelagic shrimp collected in the trawl were sorted from the samples and subsequently identified by Mr. R. A. Wasmer, Department of Zoology, Oregon State University, Corvallis, Oregon. Descriptions of new species will be published at a later date.

Operation of echo sounder:

A high frequency (200 KHz) echo sounder was operated continuously throughout the cruise. The echo sounder, a Furuno model FHV 3000 was equipped with a second low-frequency transducer (28 KHz). Both transducers were hull-mounted. The 200 KHz barium titanate transducer measured 80 mm in diameter and had a beam angle of 7.4 degrees. This transducer was operated with a pulse of 0.5 milliseconds' duration at 45 soundings per minute. The 28 KHz ferrite transducer measured 126 x 130 mm and had a beam angle of 30 x 30 degrees. Recordings were made on moist paper fed at the rate of 10 mm/min.

At noon, when the vessel was drifting on station, the 28 KHz transducer was operated at various depth ranges with corresponding changes in the number of soundings per minute, pulse duration and rates of paper feed to the recorder.

An 12 KHz Edo echo sounder was operated for several hours throughout each day-night period.

Table 1. Partial pressure of carbon dioxide in air and surface sea water.

Date	Time GMT	P _{c o₂} Sea (ppm)	Temp. Equ. (°C)	Salinity (‰)	P _{c o₂} Air (ppm)	Temp. Air (°C)	RH (%)	Saturation (ppm)
317	2100	537.0	8.18	32.520	332.0	11.11	87.2	205.0
317	2200	521.3	8.11		324.6	11.11	87.2	196.7
317	2400	244.5	7.63		327.6	10.56	86.9	-83.1
318	200	245.5	8.75		323.9	10.56	86.9	-78.4
318	400	257.6	8.80		324.6	10.00	93.3	-67.0
318	730	277.7	9.00		323.8			-46.1
318	1200	318.4	7.75		322.2			- 3.7
318	1400	305.9	7.70		324.3			-18.3
318	1600	306.7	7.35		323.3			-16.6
318	1800	308.8	6.87	32.520	329.9			-21.0
318	2000	294.0	7.03		327.2			-33.2
318	2100	291.9	7.20		324.8			-32.9
318	2300	300.2	7.15		325.6			-25.5
319	0	295.2	6.65	32.510	325.8			-30.6
319	130	303.6	6.85		325.7			-22.0
319	300	286.0	6.73		324.9			-38.9
319	500	285.0	6.85		321.6			-36.6
319	700	286.3	6.65	32.503	323.8			-37.5
319	900	288.8	6.50		325.1			-36.3
319	1100	290.2	6.68		324.5			-34.3
319	1300	299.2	6.07		324.6			-25.4
319	1500	304.9	6.15		325.4	6.11	100.0	-20.6
319	1700	291.8	5.95		324.5	7.22	92.6	-32.8
319	1800	304.8	6.00	32.585	325.1			-20.3
319	1900	297.6	6.05		324.9	7.78	92.7	-27.3
319	2100	290.7	6.10		322.9	7.22	92.5	-32.2
319	2300	292.3	6.25		324.9	7.78	92.7	-32.6
320	0	295.7	6.12		325.3			-29.6
320	100	293.1	6.30		325.8	7.78	85.5	-32.7
320	300	294.3	6.40		325.2	7.78	85.5	-30.9
320	500	292.8	6.45	32.647	324.8	6.67	92.4	-32.0
320	700	295.7	6.20		324.0	2.78	100.0	-28.3
320	900	299.4	6.10		324.3	3.89	100.0	-24.9
320	1100	302.6	5.40		325.9			-23.4
320	1300	303.6	5.65		325.5			-21.9
320	1500	305.4	5.40		325.6			-20.2
320	1700	305.2	5.40		324.0			-18.8
320	1900	297.5	5.33	32.664	322.8			-25.3
320	2100	308.5	5.15		325.7			-17.2
320	2300	306.8	5.55		323.9			-17.1
321	100	311.4	5.30		324.3			-12.9
321	300	312.4	5.40		326.7			-14.2
321	500	309.9	5.30		321.3			-11.4
321	700	309.8	5.10	32.695	325.7			-16.0
321	900	323.6	4.85		326.4			- 2.9
321	1100	318.6	4.90		325.6			- 6.9

Continued . . .

Date	Time GMT	P _c o ₂ Sea (ppm)	Temp. Equ. (°C)	Salinity (‰)	P _c o ₂ Air (ppm)	Temp. Air (°C)	RH (%)	Saturation (ppm)
321	1300	315.7	4.64		325.0			- 9.3
321	1500	320.1	4.47		325.5			- 5.5
321	1700	315.5	4.87		325.5			-10.0
321	1900	313.0	4.86	32.721	325.7			-12.7
321	2100	321.0	4.40		324.6			- 3.6
321	2300	320.2	4.65		323.4			- 3.2
322	100	322.1	4.65		324.9			- 2.8
322	300	326.9	4.50		324.9			1.9
322	500	322.5	4.50		325.2			- 2.7
322	700	326.3	4.50	32.754	323.9			2.3
322	900	316.5	4.45		318.6			- 2.2
322	1100	324.1	4.48		325.5			- 1.3
322	1300	328.6	4.52		325.3			3.3
322	1500	311.2	4.83		325.8			-14.6
322	1730	307.6	5.12		324.5			-16.9
322	1900	323.6	4.80	32.768	326.0			- 2.4
322	2100	331.9	4.64		324.3			7.6
322	2300	332.6	4.75		323.0			9.6
323	100	339.6	4.55		325.1			14.4
323	300	337.1	4.80		325.6			11.5
323	400	346.3	4.80		327.5			18.8
323	700	336.8	4.75	32.853	325.9			11.0
323	900	350.3	4.60		326.7			23.6
323	1100	337.4	4.58		325.5			11.9
323	1315	348.3	4.53		325.9			22.4
323	1500	347.4	4.77		326.0	3.33	100.0	21.4
323	1700	346.8	4.52		325.8	3.33	74.3	21.1
323	1900	333.7	4.65	32.928	326.8	5.56	69.0	6.9
323	2100	327.5	4.50		326.1	6.11	69.7	1.5
323	2300	338.8	4.70		325.4	6.67	92.4	13.4
324	100	338.3	5.00		325.7	7.22	92.6	12.6
324	200	321.6	4.50		326.2			- 4.6
324	300	322.4	4.50		325.9	6.67	92.4	- 3.4
324	500	321.9	4.70		325.6	4.44	91.7	- 3.7
324	700	319.7	4.60		324.2	4.44	100.0	- 4.6
324	900	317.6	4.50	33.025	321.9	5.00	100.0	- 4.4
324	1100	319.6	4.60		324.8	5.00	100.0	- 5.2
324	1300	326.2	4.45		325.4			.8
324	1500	326.1	4.50		325.8			.3
324	1700	332.6	4.30		325.0			7.5
324	1900	332.1	4.54		324.6			7.5
324	2100	337.4	4.25		323.6			13.8
324	2300	329.9	4.30	32.972	324.8			5.1
325	100	337.3	4.25		325.0			12.4
325	300	344.4	4.10		324.2			20.2
325	500	338.6	4.10		326.7			11.9

Continued

Table 1 - cont'd.

Date	Time GMT	P _c o ₂ Sea (ppm)	Temp.	Salinity	P _c o ₂ Air (ppm)	Temp. Air (°C)	RH (%)	Saturation (ppm)
325	700	333.8	4.05		325.5			8.3
325	900	341.5	4.00	32.894	325.6			15.9
325	1100	353.5	3.90		326.8			26.7
325	1300	338.1	3.90		327.8			10.4
325	1500	347.9	4.02		327.1			20.7
325	1700	348.7	3.99		326.4			22.2
325	1900	347.2	3.96		326.2			21.1
325	2100	359.6	3.87	32.991	326.0			33.6
325	2300	347.1	3.94		325.6			21.5
326	100	353.5	3.90		326.1			27.4
326	300	339.9	4.05		325.4			14.5
326	500	346.8	3.90		324.5			22.2
326	640	357.0	4.10		325.6			31.4
326	900	350.4	4.00	33.136	324.1			26.3
326	1100	351.6	4.20		323.4			28.2
326	1300	352.3	4.07		324.3			28.0
326	1500	360.3	4.13		325.5			34.8
326	1700	355.4	4.30		324.9			30.5
326	1900	345.9	4.16		323.9			22.0
326	2100	355.7	4.04	33.051	324.6			31.0
326	2300	344.2	4.34		327.9			16.3
327	0	335.8	4.45		324.9	3.89	83.3	10.9
327	100	334.1	4.50		324.8			9.3
327	330	335.8	4.60		326.8			9.0
327	500	332.2	4.60		326.5			5.7
327	700	331.7	4.50		326.4			5.2
327	900	335.6	4.55	33.270	324.8			10.8
327	1100	334.2	4.48		325.8			8.5
327	1300	348.0	3.93		326.3			21.7
327	1500	360.2	3.68		325.5			34.7
327	1600	365.4	3.59		325.6	2.22	100.0	39.8
327	1700	368.1	3.53		325.6			42.5
327	1800	378.3	3.50		325.7	3.89	100.0	52.6
327	1900	364.1	3.55		325.2			38.9
327	2000	372.0	3.53		324.8	4.44	100.0	47.1
327	2100	380.1	3.54	33.284	325.2			44.9
327	2200	368.8	3.60		325.6	5.00	91.8	43.2
327	2300	357.4	3.72		326.3			31.1
328	100	371.7	3.65		324.8			46.9
328	300	364.8	3.60		325.0			39.8
328	500	358.8	3.75		324.5			34.3
328	700	374.7	3.50		325.6			49.2
328	900	371.0	3.50		324.9			46.1
328	1100	377.9	3.50	33.276	325.7			52.3
328	1300	383.6	3.43		326.7			57.0
328	1500	389.2	3.42		326.6			62.5

Continued

Table 1 - cont'd.

Date	Time	P _c o ₂ Sea (ppm)	Temp. Equ. (°C)	Salinity (‰)	P _c o ₂ Air (ppm)	Temp. Air (°C)	RH (%)	Saturation (ppm)
328	1600	404.4	3.36		326.5			78.0
328	1700	407.1	3.35		326.2			80.9
328	1900	370.7	3.73		326.2			44.5
328	2100	363.0	3.94	33.360	326.6			36.4
328	2300	357.6	3.92		326.9			30.8
329	100	359.6	3.86		326.2			33.4
329	300	379.7	3.42		326.7			53.0
329	500	380.1	3.40		329.5			50.6
329	600	377.7	3.38		326.9			50.7
329	900	391.5	3.03	33.237	326.0			65.4
329	1100	379.2	3.35		325.7			53.5
329	1120	405.0	3.35		325.7			79.3
329	1320	380.6	3.24		327.7			52.9
329	1500	350.9	3.26		327.8		100.0	23.1
329	1700	338.0	3.66		328.2		100.0	9.8
329	1900	339.6	3.30		327.6		100.0	12.0
329	2100	357.5	2.38	33.264	329.2		100.0	28.2
329	2300	338.4	2.92		325.9	1.67	100.0	12.6
330	100	334.2	3.23		326.3	1.67	100.0	7.9
330	300	342.9	3.45		325.4	1.67	100.0	17.6
330	500	336.9	3.95		325.6	1.67	100.0	11.2
330	630	336.4	3.92		326.1			10.3
330	900	325.6	4.60	33.572	326.7	1.67	100.0	- 1.1
330	1100	336.7	5.30		325.8	2.78	91.1	10.8
330	1300	319.7	3.30		325.4	2.78	91.1	- 5.7
330	1500	327.3	2.80		327.2			.1
330	1700	325.1	5.71		327.1			- 1.9
330	1900	331.3	7.03		327.2			4.1
330	2100	334.2	7.36		327.2			7.0
330	2300	327.5	3.05	33.239	324.4			3.1
331	100	328.0	3.00		325.6			2.4
331	300	325.5	2.95		324.6			.8
331	500	322.1	3.30		324.3			- 2.2
331	700	325.9	2.95		325.1			.8
331	1025	346.0	4.60		327.0			19.0
331	1100	340.6	5.77	33.731	326.8			13.8
331	1200	335.6	6.22		325.9			9.7
331	1300	340.0	6.35		326.6			13.4
331	1515	333.7	7.90		326.7			7.0
331	1700	327.5	7.76		326.2			1.3
331	1900	330.2	7.93		325.7			4.5
331	2100	332.4	7.55		324.7			7.7
331	2300	326.1	7.86	34.142	325.3			.8
401	100	323.4	7.80		325.3			- 2.0
401	300	320.5	8.50		325.5			- 5.0
401	400	317.3	10.90		326.7	5.00	100.0	- 9.4

Continued

Table 1 - cont'd.

Date	Time GMT	P _c O ₂ Sea (ppm)	Temp. Equ. (°C)	Salinity (‰)	P _c O ₂ Air (ppm)	Temp. Air (°C)	RH (%)	Saturation (ppm)
401	500	315.7	10.15		324.7			- 9.0
401	600	309.5	10.30		324.4	5.56	100.0	-14.9
401	700	325.5	8.80		324.5			1.0
401	900	330.9	7.20		324.2			6.7
401	1000	323.0	8.66		325.7	5.56	92.0	- 2.7
401	1100	305.1	11.15	34.432	326.5			-21.4
401	1200	346.8	7.80		326.7	6.11	100.0	20.0
401	1300	313.6	10.13		324.9			-11.4
401	1400	286.1	12.33		325.0	8.33	85.8	-38.9
401	1500	286.5	12.83		326.8			-40.3
401	1600	287.2	12.77		326.4	8.33	100.0	-39.2
401	1700	289.0	12.77		325.9			-36.9
401	1900	297.2	12.52		325.0			-27.8
401	2000	313.6	11.38		324.6	8.89	100.0	-11.0
401	2100	316.4	10.88		324.8			- 8.4
401	2200	329.8	9.51		324.8	8.89	100.0	4.9
401	2300	302.9	12.06	34.565	323.4			-20.5
402	100	300.6	12.33		324.5			-23.9
402	300	296.7	12.45		324.7			-28.0
402	400	283.1	13.60		323.1	8.33	100.0	-40.0
402	530	284.0	13.20		323.7			-39.6
402	715	287.9	13.60		323.6			-35.7
402	800	283.6	13.12		324.4	10.00	93.3	-40.8
402	1000	286.9	13.60		324.3	8.89	93.0	-37.4
402	1100	286.4	13.68	34.629	324.8			-38.4
402	1200	285.4	13.63		326.2	8.89	100.0	-40.7
402	1300	282.0	13.63		325.2			-43.2
402	1500	283.9	13.98		327.1			-43.1
402	1700	276.4	14.23		327.2			-50.8
402	1900	281.8	14.45		327.0			-45.2
402	2100	276.3	14.71		327.6			-51.2
402	2300	282.3	14.40	34.673	328.2			-46.0
403	100	280.8	14.20		328.5			-47.7
403	300	280.7	13.90		326.8			-46.1
403	400	312.3	12.40		326.7			-14.5
403	500	271.0	13.40		325.2			-54.2
403	700	277.1	13.84		326.1			-49.0
403	800	303.7	13.90		325.6			-21.9
403	905	285.0	15.55		325.5			-40.5
403	1000	280.3	16.60		327.2			-46.9
403	1100	281.4	16.62	34.824	326.5			-45.1
403	1200	279.7	16.40		325.7			-45.9
403	1300	283.6	16.20		326.3			-42.7
403	1400	282.6	16.80		326.7			-44.1
403	1500	280.8	16.28		329.2			-48.4
403	1600	287.5	16.00		328.7			-41.2

Continued

Table 1 - cont'd.

Date	Time GMT	P _c O ₂ Sea (ppm)	Temp. Equ. (°C)	Salinity (‰)	P _c O ₂ Air (ppm)	Temp. Air (°C)	RH (%)	Saturation (ppm)
403	1700	293.0	16.20		329.0			-36.0
403	1800	270.4	15.30		328.2			-57.8
403	1900	311.8	14.00		327.8			-16.0
403	2000	287.5	14.33		327.0			-39.4
403	2100	270.6	18.23		326.4			-55.8
403	2200	272.3	18.65		326.9			-54.6
403	2300	272.1	18.70	34.914	327.1			-55.0
404	100	276.5	18.60		324.8			-48.3
404	200	271.1	18.03		328.9			-57.8
404	300	267.7	18.88		325.1			-57.4
404	500	267.7	18.55		323.7			-56.0
404	700	267.8	18.63		325.5			-57.6
404	1100	275.5	18.60	34.901	324.1			-48.6
404	1300	270.2	18.82		321.9			-51.7
404	1500	271.4	18.80		322.3			-50.9
404	1700	271.9	18.70		323.1			-51.2
404	1900	273.2	18.73		322.0			-48.8
404	2100	279.7	18.80		322.5			-42.7
404	2300	272.2	18.85	34.899	323.2			-51.0
405	100	279.3	18.55		325.0			-45.8
405	300	275.9	18.00		325.2			-49.3
405	500	266.4	18.10		323.4			-57.0
405	700	265.1	18.20		324.1			-59.0
405	900	270.1	18.00		323.4			-53.4
405	1100	271.7	18.10	34.873	324.7			-53.1
405	1300	270.5	18.35		325.2			-54.7
405	1500	266.2	18.60		326.1			-59.9
405	1700	270.3	18.60		326.1			-55.7
405	1900	265.5	18.00		324.6			-59.1
405	2100	261.1	18.78		326.8			-65.7
405	2300	267.6	18.40		324.4			-56.8
406	0	281.3	17.75		325.2			-43.8
406	100	286.1	16.40	34.398	335.7			-49.6
406	200	280.1	15.85		334.3			-54.2
406	300	246.2	14.30	33.747	339.5			-93.3
406	500	260.0	13.80		333.0			-73.0
410	500	311.9	16.25	34.700	328.8	15.56	83.4	-16.9
410	600	327.0	17.50		329.2			- 2.1
410	700	303.6	17.63			18.89	89.8	
410	800	290.5	18.25		325.2			-34.8
410	900	285.1	18.16		324.3	16.67	78.8	-39.3
410	1000	299.3	17.75		327.1			-27.8
410	1100	297.6	17.52		325.6	16.67	78.8	-28.0
410	1300	290.4	15.75	34.692	327.5	13.33	94.0	-37.2
410	1400	295.5	15.90		325.2			-29.7
410	1500	295.5	15.80		325.3	12.78	87.8	-29.8

Continued

Table 1 - cont'd.

Date	Time GMT	P _{cO₂} Sea (ppm)	Temp. Equ. (°C)	Salinity (‰)	P _{cO₂} Air (ppm)	Temp. Air (°C)	RH (%)	Saturation (ppm)
410	1600	297.3	15.72		324.6			-27.3
410	1700	302.4	15.83		326.3	12.22	87.6	-24.0
410	1800	301.7	15.47		326.9			-25.1
410	1900	296.0	14.73		326.8	11.11	87.2	-30.9
410	2000	300.1	14.13		327.4			-27.3
410	2100	296.9	14.35		326.2	10.00	86.7	-29.3
410	2200	293.0	14.40		328.0			-35.0
410	2300	292.9	14.10		324.6	9.44	86.4	-31.7
410	2400	272.7	13.15		326.5			-53.8
411	100	265.3	10.15	34.163	327.3			-62.0
411	200	307.5	9.78		326.9			-19.5
411	300	307.8	9.64		326.9			-19.0
411	400	311.8	9.68		326.8			-14.9
411	500	316.0	9.90		326.8	14.44	71.9	-10.8
411	600	318.0	9.91		326.9			- 8.9
411	700	307.3	9.72		325.7	18.33	70.1	-18.4
411	800	313.8	10.25		326.0			-12.2
411	900	316.8	8.32		325.7	10.00	86.7	- 9.0
411	1000	283.1	7.68		326.6			-43.5
411	1100	301.3	8.10		326.8	8.33	78.9	-25.4
411	1300	314.8	9.13	34.189	326.0	7.78	92.7	-11.2
411	1500	270.5	7.10		325.8	7.22	92.6	-55.2
411	1600	272.2	6.80		325.8			-53.5
411	1700	277.9	6.84		326.2	6.67	92.4	-48.3
411	1800	271.1	6.57		325.5			-54.4
411	1900	250.3	6.45		327.2	6.67	92.4	-76.9
411	2000	228.6	6.20		326.6			-98.0
411	2100	239.4	7.56		326.2	6.67	70.4	-86.8
411	2200	241.5	7.43		324.8			-83.3
411	2300	249.6	6.00		325.1			-75.4
411	2400	222.1	8.60		324.7			-102.6
412	100	214.7	7.40	33.560	325.4			-110.7
412	111	182.3	8.00					
415	600	223.0	6.20	34.400	325.5	10.56	56.4	-102.5
415	700	219.6	8.77		325.5	10.56	100.0	-105.9
415	800	199.8	7.70		326.2			-126.4
415	1000	287.2	8.45		328.4			-41.2
415	1110	218.3	6.80		328.0	6.67	100.0	-109.6
415	1215	135.6	2.90		326.3			-190.7
415	1400	171.3	2.70		326.2			-154.8
415	1500	197.4	2.62		326.8			-129.4
415	1600	364.1	2.43		326.4			37.7
415	1700	364.0	4.11		325.8			38.1
415	1800	367.0	4.34		327.5			39.5
415	1900	365.6	4.52		327.6			38.0
415	2000	361.6	4.17		327.2	1.67	100.0	34.5

Continued

Table 1 - cont'd.

Date	Time GMT	P _c O ₂ Sea (ppm)	Temp. Equ. (°C)	Salinity (‰)	P _c O ₂ Air (ppm)	Temp. Air (°C)	RH (%)	Saturation (ppm)
415	2100	358.8	4.10		326.5			32.3
415	2200	329.2	5.35		325.7	3.33	82.8	3.5
415	2300	311.4	8.90		326.1			-14.7
415	2400	283.5	11.95		323.6	3.33	91.3	-40.2
416	100	286.7	12.20		326.3			-39.6
416	200	289.2	11.60	34.405	325.0	3.33	91.3	-35.7
416	400	296.5	11.53		324.2			-27.7
416	500	303.0	7.15		322.8			-19.8
416	600	346.4	4.60		324.7	3.33	91.3	21.7
416	700	292.9	4.50		324.6			-31.8
416	800	329.4	7.62		324.6	2.78	82.3	4.7
416	900	325.2	7.75		325.1			.1
416	1020	317.3	7.55		326.7			- 9.3
416	1200	367.5	3.33		324.7	2.22	100.0	42.8
416	1300	330.2	6.90	33.931	324.9			5.3
416	1430	319.0	7.74		324.6			- 5.6
416	1530	347.6	8.20		325.5	1.67	90.6	22.0
416	1630	348.2	7.80		325.0			23.2
416	1730	370.1	2.62		325.5	1.11	100.0	44.5
416	1830	373.1	2.58		324.4			48.7
416	1930	369.5	3.01		325.7	1.11	100.0	43.8
416	2030	340.0	4.82		325.3			14.7
416	2130	343.4	5.72		325.4	1.67	100.0	18.0
416	2230	326.0	7.90		325.3			.7
416	2330	330.1	8.20		324.6	2.22	90.9	5.5
417	30	323.7	8.77		324.2			- 0.5
417	130	305.1	10.13	34.237	325.0	3.33	82.7	-20.0
417	330	315.8	9.52		326.4	3.33	82.7	-10.6
417	430	306.2	10.65		324.7			-18.6
417	520	310.2	10.55		327.7	2.78	82.3	-17.5
417	630	300.1	10.53		326.7			-26.6
417	730	323.8	9.88		327.0	2.78	82.3	- 3.2
417	830	311.4	9.53		326.9			-15.6
417	1030	332.4	8.45		328.1			4.4
417	1130	331.9	8.58		326.0	2.22	81.9	5.9
417	1230	332.0	8.70	34.111	324.8			7.2
417	1330	319.7	9.25		325.3	2.22	81.9	- 5.5
417	1530	334.8	8.71		326.4	2.22	81.9	8.4
417	1730	324.5	9.20		323.8	1.67	81.4	.7
417	1930	325.2	9.28		325.8	1.67	100.0	- 0.6
417	2130	327.8	8.30		324.4	1.67	72.4	3.5
417	2330	333.5	6.55		325.4	1.67	72.4	8.1
418	30	341.0	3.00		325.0			16.0
418	130	339.1	3.10	33.211	325.5	2.22	81.9	13.5
418	230	341.3	3.50		326.0			15.3
418	330	346.8	3.37		325.1	2.22	81.9	21.7

Continued

Table 1 - cont'd.

Date	Time	P _c O ₂ Sea (ppm)	Temp. Equ. (°C)	Salinity (‰)	P _c O ₂ Air (ppm)	Temp. Air (°C)	RH (%)	Saturation (ppm)
	GMT							
418	430	341.3	3.24		324.8			16.4
418	530	337.0	3.40		324.9	2.22	81.9	12.1
418	630	339.7	3.25		324.5			15.2
418	730	334.1	3.65		324.6	1.67	90.6	9.5
418	830	336.8	3.25		325.0			11.8
418	930	337.1	3.45		324.7	1.67	90.6	12.3
418	1140	341.4	4.00		325.2	1.67	81.4	16.2
418	1230	337.8	6.00		324.0			13.8
418	1330	338.8	6.79		325.1			13.7
418	1500	336.5	5.35		326.8			9.7
418	1700	335.2	4.08		324.8	2.22	90.9	10.4
418	1900	350.9	2.56		324.7	2.22	81.9	26.3
418	2100	344.3	3.15		324.4	2.78	82.3	19.9
418	2200	349.1	3.20		325.7			23.5
418	2300	337.2	3.40		325.4	2.78	82.3	11.8
418	2400	325.8	5.00		324.8			1.0
419	100	327.2	5.42	33.662	325.1	2.78	82.3	2.2
419	300	334.3	4.45		324.8	3.33	82.7	9.4
419	400	341.8	4.15		324.4			17.4
419	500	354.1	3.60		324.6	3.33	82.7	29.5
419	600	348.5	3.77		324.5			23.9
419	800	345.5	3.60		324.3			21.2
419	900	344.2	3.67		325.0	2.78	91.1	19.2
419	1000	346.1	3.50		325.3			20.8
419	1100	348.3	3.43		324.6			23.7
419	1230	358.4	3.48	34.273	325.1			33.2
419	1400	350.7	3.55		324.3			26.4
419	1530	357.0	3.23		324.4			32.6
419	1730	367.9	3.01		325.1			42.8
419	1930	371.8	2.88		324.9			46.9
419	2130	355.4	3.80		325.5			29.9
419	2230	360.0	3.52		325.1			34.9
419	2330	375.7	3.32		324.7			51.0
420	30	380.0	3.70	33.225	325.2	3.89	100.0	54.9
420	230	373.4	3.65		324.6	3.89	100.0	48.8
420	430	366.7	3.60		324.8			42.0
420	555	423.2	3.87		324.3			98.8
420	630	420.4	3.80		323.7	3.33	82.7	96.7
420	740	428.4	4.05		324.6			103.8
420	830	401.5	3.73		324.6	3.33	82.7	77.0
420	1030	408.5	3.77		324.1	2.78	91.1	84.4
420	1130	394.2	3.58		324.0			70.2
420	1230	394.2	3.90	33.223	324.0	3.33	82.7	70.2
420	1430	387.9	3.85		324.5	3.33	82.7	63.4

Continued

Table 1 - cont'd.

Date	Time	P _c O ₂ Sea (ppm)	Temp. Equ. (°C)	Salinity (‰)	P _c O ₂ Air ² (ppm)	Temp. Air (°C)	RH (%)	Saturation (ppm)
420	1630	372.6	4.10		324.7	2.78	82.3	47.9
420	1830	391.5	3.71		324.1	3.33	91.3	67.3
420	2030	389.1	3.75		324.1	2.78	100.0	65.0
420	2245	390.7	3.57		323.5			67.1
421	30	439.7	3.98	33.057	324.3	2.78	100.0	115.4
421	230	406.4	3.77		324.3			82.1
421	630	445.4	3.95		325.5	4.44	91.7	119.8
421	830	439.4	3.90		325.5	3.89	91.6	113.9
421	1030	431.4	3.92		325.5	3.33	100.0	105.9
421	1230	441.5	3.93		326.4			115.0
421	2230	396.0	3.98		322.9			73.1
421	2330	397.4	3.70		322.8			74.7
422	30	391.9	3.93	33.182	324.2			67.7
422	230	388.0	3.98		323.3			64.7
422	430	391.0	4.00		323.8	5.00	100.0	67.2
422	630	399.2	3.83		325.0	5.00	100.0	74.2
422	830	384.1	4.00		323.9	4.44	100.0	60.2
422	1030	383.9	4.00		323.1	4.44	100.0	60.8
422	1200	374.8	4.10	33.176	323.6			51.2
422	1400	367.3	4.43		323.9	5.00	100.0	43.4
422	1600	345.8	4.82		323.9	5.00	100.0	21.9
422	1800	359.1	4.26		323.7	5.00	100.0	35.4
422	2000	370.3	4.35		323.0	5.00	100.0	47.4
422	2200	371.1	4.22		324.4	5.00	100.0	46.7
423	0	365.3	4.20	33.207	324.1	5.00	92.0	41.2
423	200	363.0	4.40		324.1			38.9
423	400	373.8	4.45		324.4	5.00	100.0	49.4
423	600	367.7	3.95		324.2	5.00	100.0	43.5
423	800	365.9	4.33		325.4	5.00	100.0	40.5
423	1000	363.4	4.25		324.8	4.44	100.0	38.5
423	1200	371.9	4.07	32.941	325.3	4.44	91.8	46.6
423	1400	365.8	4.28		324.3	4.44	91.8	41.5
423	1600	376.4	4.17		324.1	4.44	91.8	52.3
423	1800	364.3	4.03		325.2	3.89	100.0	39.1
423	2000	357.8	4.27		324.9	3.89	100.0	33.0
423	2200	357.5	4.08		325.0	4.44	91.7	32.5
424	0	363.3	4.18	32.949	325.4	5.00	91.9	38.0
424	200	371.0	4.43		325.2	5.00	91.9	45.8
424	400	370.7	4.37		325.9	5.00	91.9	44.8
424	600	369.8	4.32		326.4	3.33	100.0	43.4
424	800	360.6	4.47		326.0	3.89	100.0	34.7
424	1000	354.9	4.48		324.7			30.2
424	1200	340.1	4.39	32.806	325.1			15.0
424	1330	338.9	4.50		325.1	3.89	91.5	13.7

Continued

Table 1 - cont'd.

Date	Time	P _c O ₂ Sea	Temp. Equ.	Salinity (‰)	P _c O ₂ Air	Temp. Air	RH (%)	Saturation (ppm)
GMT		(ppm)	(°C)		(ppm)	(°C)		
424	1530	348.0	4.50		325.2	3.89	91.5	22.8
424	1730	357.1	4.34		324.5	2.78	91.1	32.6
424	1930	345.4	4.55		324.6	3.33	91.3	20.8
424	2130	338.0	4.60		324.0	3.33	100.0	14.0
424	2330	339.4	4.67	32.924	325.2	4.44	91.7	14.3
425	130	350.4	4.70		324.6	4.44	91.7	25.8
425	330	353.3	4.80		324.4	4.44	91.7	28.8
425	530	350.8	5.00		324.5	4.44	91.7	26.4
425	730	319.3	5.03		324.8	4.44	91.7	- 5.5
425	930	315.6	4.75		324.6	3.33	100.0	- 9.0
425	1130	320.5	4.90	32.926	325.1	3.89	91.5	- 4.5
425	1230	330.7	4.70		325.3	3.89	91.5	5.4
425	1430	322.3	4.90		325.8	3.89	91.5	- 3.6
425	1630	327.4	4.47		324.7	3.89		2.7
425	1830	321.6	4.70		324.2	5.00		- 2.7
425	2030	332.0	5.02		324.8	6.11	77.2	7.2
425	2230	326.2	5.20	32.912	325.1	6.11	77.2	1.0
426	30	326.1	5.17		328.1	5.00	84.0	- 2.0
426	230	330.8	5.10		325.5	5.00	84.0	5.3
426	430	335.7	4.98		324.5	4.44	91.7	11.2
426	630	336.7	4.87		325.1			11.6
426	830	338.0	4.88		324.5			13.4
426	1030	344.4	4.90	32.865	325.1	3.89	91.6	19.3
426	1200	341.6	5.23		325.4	3.89	91.6	16.2
426	1400	336.5	4.74		327.8	3.89	91.6	8.8
426	1600	360.7	4.77			3.89	91.6	
426	1800	358.6	4.67		325.6	3.89	91.6	32.9
426	2000	364.2	4.90		325.0	1.67	81.6	39.2
426	2200	379.9	4.91	32.845	325.1	4.44	45.1	54.8
427	0	370.0	5.25		325.0	3.89	83.3	45.0
427	200	355.9	5.07		325.2	3.89	83.3	30.7
427	400	359.8	5.03		325.5	3.89	83.3	34.3
427	600	356.5	5.00		325.1	3.89	83.3	31.5
427	800	349.1	5.23	32.700	324.8	3.89	83.3	24.3
427	1000	344.8	5.07		325.7	3.89	83.2	19.1
427	1200	343.9	5.17		326.3	3.89	83.2	17.6
427	1400	350.3	4.77		327.7	3.89	83.2	22.6
427	1600	337.4	4.81		325.4	3.89	91.6	12.0
427	1800	335.0	4.81		325.8	4.44	83.6	9.2
427	2000	334.1	4.83		325.4	4.44	91.7	8.8
427	2200	342.9	4.77	32.773	325.7	5.00	83.9	17.2
428	0	328.6	4.98		325.1	5.00	83.9	3.5
428	200	324.9	5.05		325.1	5.00	83.9	- 0.2
428	400	330.8	5.07		325.8	7.78	71.6	5.0

Continued

Table 1 - cont'd.

Date	Time	P _c O ₂ Sea (ppm)	Temp. Equ. (°C)	Salinity (‰)	P _c O ₂ Air (ppm)	Temp. Air (°C)	RH (%)	Saturation (ppm)
GMT								
428	600	315.5	4.80		325.6	6.11	84.6	-10.0
428	800	314.7	4.54		324.3	4.44	83.5	- 9.6
428	1000	311.6	5.70	32.598	325.3	3.89	91.5	-13.7
428	1130	308.7	5.56		324.8	3.89	91.5	-16.1
428	1330	312.5	5.70		325.5	3.89	91.5	-13.0
428	1530	316.1	5.81		325.9			- 9.8
428	1730	323.9	5.55		325.1	8.33	52.4	- 1.2
428	1930	317.8	5.90		325.7	5.00	91.9	- 7.9
428	2130	312.8	6.07	32.614	326.0	5.56	84.2	-13.3
428	2330	313.9	6.17		325.1	5.56	100.0	-11.2
429	130	318.5	6.32		326.4	5.56	100.0	- 7.9
429	350	306.5	6.02		325.5	6.67	100.0	-19.1
429	540	306.2	6.28		325.5	5.56	92.0	-19.3
429	730	302.6	6.25		325.7	5.00	100.0	-23.1
429	930	301.0	6.20	32.576	324.9	5.56	92.0	-23.9
429	1230	299.6	6.33		324.8			-25.2
429	1430	290.9	6.74		325.3	6.11	77.0	-34.4
429	1630	304.3	7.05		324.7	6.11	100.0	-20.4
429	1830	303.9	6.57		324.7			-20.8
429	2030	300.6	7.12	32.517	325.0			-24.4
429	2230	301.7	7.15		324.8			-23.2
430	30	319.9	7.38		325.1			- 5.3
430	300	307.9	7.01		325.3			-17.3
430	430	314.3	7.25		324.5			-10.2
430	630	307.4	7.40		325.2			-17.8
430	730	305.1	7.32	32.498	324.2			-19.1
430	900	299.4	8.06		324.9			-25.5
430	1100	305.6	8.50		324.2			-18.6
430	1300	305.2	7.90		324.0			-18.7
430	1500	291.0	8.43		324.0			-33.0
430	1700	295.4	8.20		323.6			-28.2
430	1900	284.4	8.30	32.456	324.3			-40.0
430	2100	288.4	8.12		324.0			-35.6
430	2300	302.0	8.50		324.2			-22.3
501	300	287.6	8.98		324.3			-36.8
501	327	247.5	9.62		323.7			-76.2
501	513	279.0	10.10		323.0			-44.0
501	700	306.9	10.00	29.952	323.0			-16.1
501	830	287.7	10.23		322.8	7.78	92.7	-35.1
501	1100	436.2	9.37		324.1	7.78	92.7	112.0
501	1330	445.4	9.27		324.7	8.33	85.9	120.7
501	1455	483.8	9.04		327.4	7.78	100.0	156.4
501	1700	546.0	8.90	21.129	323.8	8.89	86.1	222.2

Table 2. Inorganic phosphate, silicate and nitrate content of surface sea water.

Station Number	Date (Local)	Position		Nitrate	Silicate μg.at./l	Phosphate	
		Latitude	Longitude				
TP0101	18-3-69	48°48.4'N	126°32.5'W	2.6	11.9	0.79	
2		48°51.4'	127°44'	6.5	26.2	0.89	
3		48°54.2'	128°20'	6.2	18.1	1.38	
4		48°56'	128°54.6'	6.6	16.6	1.06	
5		48°56'	129°30.3'	8.4	21.3	1.14	
6		49°00.5'	130°04.2'	7.1	20.8	1.05	
7		49°01'	130°18'	8.0	20.0	1.11	
8		49°03.2'	130°54'	8.4	22.0	0.74	
9		49°04'	131°21'	7.8	21.6	0.78	
10		49°05.5'	131°51'	7.8	21.5	0.82	
11		49°10'	132°24'	6.7	22.2	0.86	
12		49°11'	132°59'	7.9	23.0	0.90	
TP0201	19-3-69	49°14'	133°37'	9.1	23.7	0.94	
2		49°17'	134°16.2'	9.1	20.8	1.04	
3		49°18'	135°16'	10.2	22.4	1.05	
4		49°19'	135°47'	9.7	21.7	1.02	
5		49°27'	136°24.8'	10.5	22.2	1.01	
6		49°24.6'	136°58'	10.3	25.3	0.97	
7		49°24.6'	137°13'	9.2	25.0	1.11	
8		49°29'	137°50'	8.9	25.6	1.01	
9		49°31.5'	138°28'	8.4	25.6	1.01	
10		49°39'	138°56.5'	8.5	26.2	1.06	
11		49°36'	139°25'	9.3	30.9	1.17	
12		49°39.5'	140°04.5'	9.5	32.8	1.10	
TP0301	20-3-69	49°42.1'	140°44'	10.6	33.3	1.19	
2		49°44'	141°22.5'	10.6	30.2	1.23	
3		49°39'	142°09'	10.9	30.7	1.13	
4		49°40'	142°33'	10.8	29.3	1.15	
5		49°49'	143°04'	10.2	28.0	1.07	
6		49°46'	143°41.6'	11.5	28.6	1.20	
7		49°46'	143°49'	11.6	33.2	1.22	
8		49°52'	144°14'	11.7	37.2	1.04	
9				11.6	35.7	1.15	
10			50°04'	145°18'	11.7	37.8	1.12
11			50°04'	145°40'	11.6	36.8	1.04
12			50°00.5'	146°14'	12.3	34.6	1.37
TP0401	21-3-69	49°59'	146°52'	12.6	33.7	1.26	
2		50°00'	147°28'	12.4	33.9	1.28	
3		50°01.9'	148°11'	10.9	33.0	1.11	
4		50°01'	148°47'	11.6	32.5	1.17	
5		50°00'	149°25'	12.3	32.1	1.26	
6		50°00'	150°02'	12.3	32.1	1.34	

Continued

Table 2 - cont'd.

Station Number	Date (Local)	Position		Nitrate	Silicate µg.at./l	Phosphate	
		Latitude	Longitude				
TP0407	21-3-69	50°00'N	150°04'W	14.3	32.2	1.57	
8		49°59'	150°13.5'	14.2	33.3	1.50	
9				14.8	33.0	1.50	
10			50°00'	151°40'	13.6	32.9	1.46
11			50°00'	152°11'	13.8	31.4	1.48
12			50°00'	152°50'	13.8	34.4	1.44
TP0501	22.3.69	50°00'	153°31'	14.2	31.3	1.53	
2		50°00'	159°07'	12.8	28.1	1.47	
3		50°00'	154°49'	12.9	28.0	1.76	
4		50°00'	155°28'	13.2	30.4	1.41	
5		50°00'	156°09'	14.2	31.6	1.52	
6		50°00'	156°48'	15.3	34.2	1.49	
7		50°00'	156°53'	14.7	33.9	1.21	
8		50°00'	157°34'	15.7	36.3	1.17	
9				15.6	36.6	1.18	
10				14.8	36.9	1.10	
11			50°00'	159°21'	15.7	35.4	1.16
12			50°00'	160°00'	15.4	34.4	1.10
TP0601	23-3-69	50°00'	160°41'	15.7	33.3	1.31	
2		50°00'	161°15'	15.6	35.0	1.33	
3		50°00'	161°58'	16.1	35.7	1.16	
4		50°00'	162°33'	15.9	38.7	1.12	
5		50°00'	163°13'	15.6	35.3	1.20	
6		49°40.5'	163°50'	15.6	35.8	1.20	
7		49°41'	163°55'	16.1	42.1	--	
8		49°43'	164°36'	15.2	37.6	1.58	
9				15.5	33.8	1.49	
10			49°46'	165°40'	15.2	37.6	1.26
11			49°47'	166°12'	15.3	37.4	1.35
12			49°50'	166°49'	15.4	27.3	1.31
TP0701	24-3-69	49°52.2'	167°26'	15.9	39.4	1.33	
2		49°54.2'	168°05'	16.0	38.6	1.34	
3		49°56'	168°47'	17.2	48.5	1.29	
4		49°58.5'	169°26'	16.8	42.5	1.47	
5		49°57.5'	169°57'	16.2	43.0	1.33	
6		49°54'	170°31'	16.9	43.5	1.41	
7		49°55.5'	170°35'	16.7	40.3	1.49	
8		49°52'	171°06'	17.1	44.1	1.36	
9				17.1	42.0	1.43	
10			49°47'	172°02'	17.0	40.9	1.41
11			49°44.5'	172°31.5'	17.6	41.0	1.53
12			49°41'	173°07.5'	18.7	42.3	1.60

Continued

Table 2 - cont'd.

Station Number	Date (Local)	Position		Nitrate	Silicate µg.at./l	Phosphate	
		Latitude	Longitude				
TP0801	25-3-69	49°38'N	173°44'W	18.5	40.5	1.62	
2		49°34.8'	174°16.5'	17.1	41.5	1.57	
3		49°31'	174°53'	17.0	42.0	1.46	
4		49°28'	175°27'	17.4	41.5	1.52	
5		49°21'	176°12'	17.7	45.0	1.56	
6		49°22'	176°28'	18.6	49.9	1.54	
7		49°23'	176°23'	20.2	48.6	1.46	
8		49°19'	177°02'	20.6	45.7	1.58	
9				20.6	50.9	1.41	
10			49°14'	178°03'	20.3	50.2	1.49
11			49°11'	178°25'	20.0	48.2	1.56
12			49°08'	178°58'	21.5	50.4	1.62
TP0901	27-3-69	49°06'	179°23.5'	20.1	48.9	1.64	
2		49°04'	179°39'	19.9	52.6	1.46	
3		49°02.5'	179°50'	20.1	46.5	1.59	
4		49°01'	179°58'	--	49.0	1.60	
5		48°58'N	179°59.5'W	--	51.5	1.48	
6		48°55.5'N	179°46'E	20.1	49.8	1.35	
7				--	--	--	
8			48°55.5'	179°25'	15.8	41.9	1.43
9			48°54.5'	179°16'	15.9	42.9	1.46
10			48°53'	179°04'	16.3	44.0	1.45
11			48°55'	179°49'	16.4	45.2	1.43
12			48°53'	178°30'	17.8	47.4	1.44
TP1001	28-3-69			19.3	52.3	1.64	
2			48°45'	177°42'	19.5	53.2	1.72
3			48°40'	177°11'	20.2	56.8	1.70
4			48°35'	176°39'	19.9	56.8	1.70
5			48°26.5'	176°21'	20.0	56.8	1.57
6			48°22'	175°53'	20.1	56.8	1.57
7			48°19'	175°39'	22.5	59.6	1.47
8			48°15.8'	175°25'	21.6	54.3	1.68
9			48°10.5'	174°55'	24.0	63.0	1.86
10			48°06'	174°28'	23.3	58.3	1.59
11			48°01'	174°13'	23.6	61.9	1.57
12			47°55.5'	173°42'	23.7	60.2	1.76
TP1101	29-3-69	47°49.5'	173°04'	24.8	60.5	1.84	
2		47°49'	172°47'	25.0	60.9	1.88	
3		47°44'	172°17.5'	23.7	58.2	1.84	
4		47°38'	171°53'	18.0	58.6	1.30	
5		47°37'	171°40'	--	--	--	
6		47°25'	171°12'	23.0	52.0	1.86	
7		47°18.5'	170°55.5'	23.4	57.5	1.86	

Continued . . .

Table 2 - cont'd.

Station Number	Date (Local)	Position		Nitrate	Silicate μg.at./ℓ	Phosphate
		Latitude	Longitude			
TP1108	29-3-69	47°11.5'N	170°18'E	22.6	57.0	1.91
9		47°09'	170°09'	23.5	57.9	1.94
10		47°00'	169°30'	23.5	56.7	1.88
11		46°51.5'	168°55'	23.6	57.4	1.70
12		46°43'	168°23.5'	23.5	57.1	1.71
TP1201	30-3-69	46°32'	167°50'	21.9	55.0	1.82
2		46°25.5'	167°17'	19.1	48.1	1.61
3		46°16'	166°38'	19.6	49.1	1.64
4		46°07'	166°03'	21.4	51.9	1.73
5		45°67.5'	165°26'	20.0	50.0	1.54
6		45°45'	164°53'	19.0	48.1	1.74
7		45°40'	164°31'	20.1	45.7	1.56
8		45°29.5'	163°55'	19.4	43.0	1.83
9		45°18'	163°17'	19.2	44.9	1.75
10		45°07'	162°53'	17.8	38.0	1.45
11		44°56'	162°16'	16.9	38.9	1.33
12		44°43'	161°34.5'	20.0	44.1	1.54
TP1301	31-3-69	44°29'	160°51.5'	18.8	41.9	1.57
2		44°17'	160°13'	18.5	42.8	1.25
3		44°07'	159°40'	15.4	32.2	1.09
4		43°57'	159°07'	17.1	41.2	1.09
5		43°45.5'	158°32'	20.6	48.5	1.39
6		43°33.5'	157°56'	19.8	45.6	1.42
7		43°39'	158°00'	18.1	42.5	1.28
8		43°29'	157°58'	18.4	39.3	1.28
9		43°20.5'	157°03'	18.9	40.4	1.45
10		43°18'	157°01'	18.7	40.8	1.30
11		43°16'	156°58'	15.9	35.8	1.14
12		43°15'	156°57'	14.4	29.6	1.18
TP1401	1-4-69	43°14.5'	156°52.5'	13.1	26.8	1.02
2		43°13'	156°49'	12.9	26.3	1.04
3		43°14'	156°43'	13.7	27.2	1.02
4		43°11'	156°33'	14.0	28.9	1.11
5		42°42'	156°30'	13.0	26.4	0.99
6		42°12'	156°43'	12.1	24.4	0.98
7		41°51.5'	156°26'	9.2	30.7	0.20
8		41°36'	155°52'	9.7	27.6	0.22
9		41°21'	155°17'	13.3	--	--
10		41°10.5'	154°53'	12.0	--	--
11		40°56'	154°20'	14.0	38.7	0.26
12		40°41'	153°45'	6.8	18.4	0.20
TP1501	2-4-69	40°25'	153°09'	6.4	15.5	0.20
2		40°10.9'	152°33'	6.8	15.8	0.20

Continued

Table 2 - cont'd.

Station Number	Date (Local)	Position		Nitrate	Silicate μg.at./l	Phosphate
		Latitude	Longitude			
TP1503	2-4-69	39°56'N	152°08'E	8.4	25.2	0.20
4		39°40'	151°33'	11.7	31.2	0.29
5		39°25'	150°59'	7.7	19.1	0.19
6		39°11'	150°25'	7.6	21.0	0.17
7		38°55'	149°56.5'	5.3	12.5	0.27
8		38°36.5'	149°20'	5.8	21.0	0.05
9		38°16'	148°54'	6.5	13.7	0.31
10		37°59'	148°39'	6.0	17.1	0.12
TP1604	3-4-69	38°00'	148°04'	5.6	13.9	0.26
5		38°06'	147°33'	5.3	17.9	0.14
6		37°56.5'	147°20'	6.3	18.9	0.12
7		37°44'	147°01'	6.8	18.0	0.20
8		37°31'	146°57'	5.7	15.1	0.15
9		37°12'	146°28'	5.7	15.0	0.26
10		37°08'	146°11'	3.9	17.2	0.10
11		36°59'	145°39'	3.4	17.2	0.00
12		36°41'	145°07'	4.0	15.0	0.05
TP1701	4-4-69	36°35'	144°40'	5.0	15.8	0.12
2		36°25'	144°12'	7.4	15.5	0.16
3		36°15'	143°55'	1.4	4.5	--
4		36°03'	143°27'	1.5	4.5	0.15
5		35°57'	143°14'	1.4	4.3	--
6		35°53'	143°02'	1.1	3.8	0.16
TP2312	15-4-69	41°41'	143°41'	5.4	22.8	0.69
TP2401	16-4-69			19.3	53.9	>0.80
2		41°40'	144°40'	18.8	51.1	>0.80
3		41°40'	145°11'	17.1	57.0	>0.80
4		41°40'	145°45.5'	13.5	56.1	0.75
5		41°40'	146°19.5'	6.6	17.9	0.21
6		41°38'	146°45'	8.1	23.2	0.63
7		41°41.5'	146°51'	10.0	25.4	0.57
8		41°41'	147°26'	17.7	51.5	1.06
9		41°40'	148°01.5'	14.5	48.2	0.90
10		41°40'	148°30.5'	13.3	38.2	0.69
11		41°41'	148°45'	20.1	62.9	>0.75
12		41°41'	149°17'	13.2	34.8	0.73
TP2501	17-4-69	41°40'	149°49'	12.9	35.6	0.69
2		41°40'	150°21'	22.0	62.0	--
3		41°40'	150°55'	21.3	57.9	1.25
4		41°40'	151°30'	16.0	45.3	0.87
5		41°40'	152°05'	12.8	40.5	0.73
6		41°37.5'	152°24.5'	9.6	29.4	0.62
7		41°41'	152°24'	10.8	32.4	0.66

Continued

Table 2 - cont'd.

Station Number	Date (Local)	Position		Nitrate	Silicate μg.at./ℓ	Phosphate
		Latitude	Longitude			
TP2508	17-4-69	41°41'N	153°00'E	9.4	27.4	0.52
9		41°52'	153°30'	10.5	30.0	0.51
10		42°04'	153°58'	9.3	30.7	0.55
11		42°12'	154°18'	11.4	35.5	0.46
12		42°25'	154°48'	10.8	31.9	0.53
TP2601	18-4-69	42°36.5'	155°16'	12.5	35.7	0.57
2		42°47.5'	155°43'	11.1	31.5	0.54
3		42°59'	156°12.5'	11.0	29.4	0.58
4		43°12'	156°43'	12.8	32.5	0.61
5		43°24'	157°14'	18.4	45.6	0.84
6		43°30'	157°25'	22.8	49.6	0.94
7		43°32.5'	157°25.6'	23.4	50.1	0.94
8		43°41.5'	157°48'	18.3	49.1	--
9		43°53'	158°17.5'	18.2	48.4	--
10		44°03'	158°44'	18.8	48.5	0.96
11		44°11'	159°04'	19.0	48.9	--
12		44°22'	159°30'	20.2	39.0	--
TP2701	19-4-69	44°33'	160°00'	16.8	46.5	--
2		44°42'	160°30'	18.2	46.5	0.92
3		44°51'	161°00'	19.9	53.1	1.03
4		45°01'	161°32'	19.0	50.0	0.96
5		45°10'	162°05'	18.2	48.2	0.95
6		45°17'	162°26'	15.2	36.8	0.82
7		45°20'	162°36'	16.3	40.6	0.82
8		45°30'	163°09'	18.3	49.3	0.91
9		45°39'	163°41'	--	48.8	0.95
10		45°48'	164°12.5'	--	54.0	0.98
11		45°54'	164°35'	19.2	52.9	0.91
12		46°03'	165°06'	19.2	49.4	1.20
TP2803	20-4-69	46°29'	166°39'	22.1	55.9	1.10
4		46°41'	167°15'	20.4	51.4	0.99
5		46°50'	167°49'	19.7	52.3	1.00
6		46°58'	168°01'	22.5	57.3	1.06
7		46°56.5'	168°17.5'	22.1	57.3	1.01
8		47°03.6'	168°50.5'	21.9	50.0	1.12
9		47°10.5'	169°27'	24.4	64.8	1.17
10		47°17.5'	170°01'	23.8	69.1	1.26
11		47°22'	170°23'	23.6	68.5	1.18
12		47°19'	170°53'	22.6	57.2	1.06
TP2901	21-4-69	47°34.2'	171°21'	22.4	64.2	1.16
2		47°39.6'	171°41.5'	25.4	51.9	1.08
3		47°43'	172°04'	22.5	58.0	1.14
4		47°45'	172°17.5'	22.6	58.5	1.18
5		47°46'	172°31'	22.8	61.8	1.34
6		47°47'	172°40'	24.4	59.9	1.27

Continued

Table 2 - cont'd.

Station Number	Date (Local)	Position		Nitrate	Silicate μg.at./ℓ	Phosphate
		Latitude	Longitude			
TP3002	22-4-69	47°36'N	173°53'E	22.5	58.8	1.26
		47°50'	174°17.5'	22.2	54.5	1.10
		48°05'	174°42'	21.8	54.1	1.09
		48°16'	175°09'	21.4	53.9	0.99
		48°21'	175°40'	21.5	59.3	1.01
		48°23'	175°59'	21.1	55.5	0.95
		48°28'	176°28'	20.7	59.9	1.00
		48°32'	177°01'	20.6	53.1	0.99
		48°30'	177°29'	21.3	55.3	0.95
		48°40'	177°52'	21.8	54.1	0.94
		48°44'	178°23'	19.7	50.8	0.97
		TP3101	23-4-69	48°48'	178°56'	18.7
48°53'	179°26'			16.9	58.0	0.62
48°57'N	179°58'E			18.7	50.5	0.92
49°02'N	179°26'W			19.3	49.5	0.93
49°05'	179°10'			20.1	50.5	0.95
49°06'	179°22'			19.9	51.1	0.98
49°10.5'	178°53.5'			19.6	49.6	1.00
49°13.5'	178°32'			21.5	47.5	1.01
49°16'	178°11'			20.5	47.1	1.09
49°19'	177°51'			20.3	45.1	1.01
49°21'	177°35'			20.2	50.5	1.07
49°23'	177°19'			20.7	48.9	1.01
TP3201	23-4-69	49°25'	177°04.5'	20.7	48.0	1.00
		49°27.5'	176°27.5'	20.9	52.9	1.01
		49°30'	176°30'	20.8	47.5	1.09
		49°31.5'	176°15'	20.8	45.4	1.04
		50°10.5'	176°07'	20.8	48.4	1.11
		50°14'	175°53'	20.8	44.0	1.03
		50°14'	175°28'	20.1	42.0	1.02
		50°17'	174°55'	20.8	43.4	1.05
		50°16'	174°33'	20.2	45.8	1.01
		50°15'	174°05'	20.2	42.4	1.01
		50°14.5'	173°39'	20.0	46.4	0.98
		50°13.5'	173°12'	18.8	38.6	0.99
TP3301	24-4-69	50°12.2'	172°35'	18.1	37.9	0.97
		50°11'	172°02'	19.1	42.3	0.99
		50°10'	171°25'	18.7	43.0	1.00
		50°08'	170°46'	18.3	42.1	0.94
		50°07'	170°07'	17.9	37.2	0.96
		50°03'	169°25'	16.0	53.6	0.55
		50°06.5'	169°17'	15.6	53.9	0.57
		50°06.5'	169°17'	15.4	43.4	0.81

Continued

Table 2 - cont'd.

Station Number	Date (Local)	Position		Nitrate	Silicate μg.at./ℓ	Phosphate
		Latitude	Longitude			
TP3309	24-4-69	50°03'N	168°06'W	14.4	52.3	0.54
10		50°00'	167°32'	13.9	51.2	0.52
11		50°00'	167°07'	13.8	46.5	0.62
12		50°00'	166°35'	13.8	36.7	0.77
TP3401	25-4-69	50°00'	165°53'	13.7	36.0	0.74
2		50°00'	165°20'	13.9	36.2	0.78
3		50°00'	164°46'	13.9	39.4	0.79
4		50°00'	164°06'	14.0	36.7	0.75
5		50°00'	163°26'	13.7	34.6	0.73
6		50°00'	162°46'	13.6	35.4	0.74
7		50°02'	162°43'	13.6	35.4	0.56
8		50°02'	162°15'	16.4	35.0	1.10
9		50°02'	161°36'	16.5	40.0	1.18
10		50°02'	160°55'	16.7	33.8	1.14
11		50°02'	160°32'	16.6	39.7	1.10
12		50°02'	159°56'	16.5	34.3	1.01
TP3501	26-4-69	50°02'	159°17'	16.5	33.1	1.11
2		50°02'	158°41.5'	16.8	33.8	1.07
3		50°04'	158°04'	16.3	35.1	1.06
4		50°02'	157°24"	16.9	35.1	1.12
5		50°02'	156°44'	16.2	33.7	0.95
6		50°05'	156°06'	16.2	34.8	1.06
7		50°05'	156°02'	15.5	33.5	1.28
8		50°05'	155°24'	12.9	33.2	0.45
9		50°02'	154°45'	--	--	--
10		50°03'	154°05'	13.2	29.0	0.46
11		50°03'	153°48'	13.5	29.4	0.50
12		50°03'	153°10'	12.7	27.5	0.43
TP3601	27-4-69	50°03'	152°32'	13.6	31.3	0.51
2		50°03'	151°54'	14.4	35.7	0.49
3		50°03'	151°14'	14.0	30.6	0.47
4		50°03'	150°32'	--	--	--
5		50°03'	149°54'	13.6	33.4	0.49
6		49°57.5'	149°22'	14.9	31.7	0.51
7		49°56.5'	149°07.5'	13.0	28.8	0.45
8		49°57.5'	148°31'	13.6	28.0	0.90
9		49°57.5'	147°50'	13.8	27.7	0.91
10		49°57.5'	147°11.5'	12.9	29.4	0.83
11		49°57'	146°48'	11.9	29.3	0.82
12		49°56'	146°10'	12.0	27.6	0.85

Continued

Table 2 - cont'd.

Station Number	Date (Local)	Position		Nitrate	Silicate μg.at./ℓ	Phosphate
		Latitude	Longitude			
TP3701	28-4-69	49°57.5'N	145°32'W	12.1	33.3	0.85
2		49°59.5'	145°01.5'	12.1	27.1	0.95
3		50°00'	145°00'	11.7	27.2	0.85
4		50°00'	145°10'	11.7	27.1	0.85
5		50°01'	144°44'	11.7	28.4	0.90
6		49°58.5'	144°04'	11.4	25.4	0.88
7		49°58'	143°57'	10.7	27.7	0.78
8		49°54.5'	143°11'	9.9	24.6	0.93
9		49°51'	142°21'	9.9	26.5	0.99
10		49°49'	141°42'	10.7	25.0	0.96
11		49°47.5'	141°17'	10.1	24.8	0.97
12		49°44.5'	140°32'	10.1	28.0	0.94
TP3801	29-4-69	49°42'	139°48'	10.1	22.6	0.97
2		49°39.5'	139°05'	9.9	26.6	0.97
3		49°37'	138°26'	7.7	18.3	0.74
4		49°34'	137°38'	7.7	20.9	0.71
5		49°31.5'	137°05'	8.6	20.8	0.71
6		49°28'	136°18'	7.8	16.1	0.72
7		49°28'	136°18'	7.6	15.2	0.73
8		49°28'	135°29'	8.7	20.7	0.61
9		49°24'	134°38'	8.2	18.3	0.62
10		49°20'	133°52'	7.6	15.4	0.60
11		49°17'	133°21'	7.2	18.2	0.58
12		49°14'	132°57'	6.0	13.2	0.53
TP3901	30-4-69	49°09.5'	131°56.5'	3.5	10.0	0.46
2		49°06'	131°22'	3.9	8.9	0.46
3		49°03'	130°35'	4.7	12.6	0.53
4		49°02'	130°10'	4.1	13.8	0.45
5		48°57'	129°29'	4.9	12.0	0.56
6		48°54.5'	128°33.5'	4.1	14.8	0.52
7		48°51.3'	127°58.5'	4.9	12.5	0.51
8		48°48'	127°39.5'	4.4	14.8	0.50
9		48°45'	127°07.5'	4.9	10.0	0.46

Table 3. Mixed Layer Depth

Day	Date	Station					
		02	04	06	08	10	12
01	Mar. 18	³⁸ 108	65	40	70	³⁸ 75	²⁵ 70
02	19	³⁰ 80	105	120	120	⁵ 110	¹⁵ 140
03	20	90	70	40 ¹⁵⁰	¹⁰ 100	¹⁵ 135	¹⁵ 100
04	21	³⁰ 85	³⁸ 80	²⁸ 100	90	²⁸ 80	¹⁰ 95
05	22	⁶⁰ 95	³ 98	75	³⁰ 120	115	105
06	23	145	120	135	⁵ 110	120	115
07	24	120	²⁰ 100	120	90	110	110
08	25	²⁵ 90	122	⁴⁰ 130	95	115	110
09	27	140					
10	28	120	130	110	¹⁸ 130	135	143
11	29	130	120	¹⁰ 75	165	130	⁷⁵ 140
12	30	160	^{13,50} 112	⁸⁰ 150	¹⁰ 155	¹⁵ 130	126
13	31	40	25	108	100		55
14	Apr. 1			80	45	22	⁵⁰ 110
15	2	92	75	20	260	250	

Continued

Table 3 - cont'd.

Table 4. Temperature and salinity profiles with depth.

Day	Date	Station					
		02	04	06	08	10	12
16	Apr. 3			50	² 55	90	65
17	4	68	110	50			
19	6		110				
24	16	20 150	¹⁰ 20	27	15 90	20 70	30
25	17	55	40	54	36	52	95
26	18	110	150	¹⁸ 60	108	²² 93	168
27	19	88	⁷⁰ 150	260	180	³⁵	⁵⁰ 200
28	20	⁸⁰ 170	¹⁸ 176	60	170	⁴⁵ 160	95
29	21	⁶⁰ 145	68 ¹⁶⁵	²²⁰		⁶⁵ 165	
30	22	145	140	⁵ 135	155	150	153
31	a 23	156	155	145	50	58	65 160
32	b 23		70		75 158	⁴⁵ 145	61
33	24	⁸⁵ 125	135	120 ¹⁸⁰	² 100	¹⁰ 130	⁸ 120
34	25	100	²³ 110	120	²⁸ 112	140	⁴⁵ 135
35	26	³⁰ 127	³⁷ 123	⁷⁰ 135	⁶⁵ 130	⁶⁰	⁶⁰ 135

Continued

Table 3 - cont'd.

Day	Date	Station					
		02	04	06	08	10	12
36	Apr. 27	⁷⁰ 120	50	⁶⁰ 105	⁶ 55 75	²⁸ 80	30
37	28	60	55	60	²⁰ 90	90	^{20,45} 90
38	29	⁶⁰ 90 140	² 53 85	90	⁵ 75	^{15,45} 80	² 80
39	30	⁸ 50	⁹ 45	70	⁸ 65	¹⁰ 60	

Table 4. Temperature and salinity profiles with depth.

XBT Day	4 1	10 2	16 3	22 4	28 5	35 6	41 7	47 8	56 10	62 11	
<u>Depth</u>											
0	Temp.	6.40*	5.5	4.5	3.9	4.0	4.05*	3.49*	3.14*	2.88*	3.5
	Sal.	32.35	32.51	32.62	32.72	32.81	32.90	32.93	32.89	33.20	
3	T.	6.5	5.39*	4.50*	3.70*	3.84*	4.04*	3.47*	3.13*	2.89*	3.5
	S.										
5	T.	6.5	5.5	4.5	4.0	3.9	4.1	3.6	3.3	3.0	3.6
	S.	32.42	32.55	32.62	32.71	32.81	32.90	32.92	32.98	33.20	
10	T.	6.5	5.5	4.5	4.0	3.9	4.0	3.6	3.3	3.0	3.5
	S.	32.43	32.54	32.63	32.71	32.81	32.90	32.92	32.96	33.19	
20	T.	6.5	5.5	4.5	3.9	3.9	4.0	3.6	3.2	3.0	3.5
	S.	32.44	32.55	32.63	32.72	32.81	32.90	32.92	32.98	33.20	
30	T.	6.5	5.5	4.5	3.9	3.9	4.0	3.6	3.2	3.0	3.4
	S.	32.43	32.56	32.63	32.72	32.81	32.90	32.92	33.00	33.19	
50	T.	6.4	5.5	4.4	3.9	3.9	4.0	3.6	3.1	3.0	
	S.	32.47	32.50	32.63	32.71	32.82	32.89	32.92	33.01	33.20	
75	T.	6.4	5.4	4.3	3.9	3.9	4.0	3.5	3.1	3.0	3.3
	S.	32.43	32.55	32.64	32.71	32.83	32.89	32.93	33.08	33.20	
100	T.	6.8	5.3	4.3	3.9	3.7	4.0	3.5	3.2	3.0	2.8
	S.	32.48	32.55	32.64	32.72	32.85	32.90	32.93	33.05	33.20	
150	T.	6.6	5.1	4.0	4.4	4.2	4.2	3.9	3.5	3.16*	3.3
	S.		32.89	33.48	33.59	33.47	33.24	33.28	33.41	33.35	
155	T.	6.56*	5.04*	3.95*	3.95*	4.15*	4.25*	3.76*	3.31*	3.5	3.3
	S.										

Continued . . .

Table 4 - cont'd.

	XBT Day	68 12	74 13	92 17	107 24	113 25	119 26	125 27	131 28	140 30	146 31
<u>Depth</u>											
0	Temp.	2.32*	1.88*	18.3	10.7	9.3	2.2	4.4	2.6	3.0	3.2
	Sal.	33.26	33.13	34.85	34.40	34.27	33.20	33.59	33.20		
3	T.	2.32*	1.89*		10.74*	9.28*	2.26*	4.38*	2.57*	2.87*	3.13*
	S.										
5	T.	2.5	2.0	18.3	10.7	9.3	2.2	4.4	2.6	2.9	3.2
	S.	33.26	33.11	34.84	34.41	34.27	33.23	33.58	33.21	33.16	33.17
10	T.	2.5	2.0	18.3	10.7	9.3	2.2	4.4	2.6	2.9	3.2
	S.	33.25	33.11	34.84	34.43	34.26	33.20	33.58	33.21	33.16	33.18
20	T.	2.5	2.0	18.3	10.7	9.3	2.4	4.4	2.6	2.9	3.2
	S.	33.26	33.12	34.83	34.44	34.28	33.21	33.58	33.21	33.17	33.18
30	T.	2.5	1.9	18.3	10.2	9.3	2.3	4.4	2.6	2.9	3.2
	S.	33.26	33.11	34.84	34.43	34.28	33.20	33.57	33.21	33.17	33.18
50	T.	2.5	1.9	18.3	9.4	9.3	2.2	4.4	2.6	2.9	3.3
	S.	33.24	33.11	34.86	34.36	34.22	33.19	33.59	33.21	33.17	33.18
75	T.	2.6	1.9	18.0	9.0	8.2	2.4	4.4	2.5	3.0	3.1
	S.	33.26	33.13	34.83	34.28	34.21	33.31	33.58	33.21	33.17	33.19
100	T.	2.6	2.1	17.6	8.3	9.2	2.8	4.4	2.5	3.0	3.1
	S.	33.27	33.11	34.85	34.17	34.09	33.41	33.58	33.23	33.17	33.19
120	T.					8.5	2.77*	4.4	2.5	2.85*	2.94*
	S.					34.07	33.37	33.60		33.19	33.20
130	T.				7.70*	7.60	3.41*	4.37*	2.42*	2.87*	2.96*
	S.					34.02	33.47		33.23	33.20	
140	T.		1.96*			7.44*					
	S.										
150	T.	2.6	3.2	17.5	7.39*	6.9	2.9	4.4	2.5	3.2	3.4
	S.	33.28	33.26	34.86	34.10	34.02	33.52	33.59	33.21	33.20	33.20
155	T.	2.58*	3.1	17.48*	6.0						
	S.		33.27	34.91	34.03						
200	T.	4.2						4.35			
	S.							33.60			

Continued . . .

Table 4 - cont'd.

	XBT	156	162	168	174	180	186	193
	Day	33	34	35	36	37	38	39
<u>Depth</u>								
0	Temp.	3.63*	4.3	4.3	3.9	5.2	6.4	7.4
	Sal.	32.93	32.88	32.82	32.77	32.62	32.50	32.45
3	Temp.		4.21*	4.23*	4.78*	5.16*	6.14*	7.22*
	Sal.							
5	T.	3.7	4.3	4.1	3.9	5.2	6.2	7.3
	S.	32.89	32.87	32.82	32.77	32.61	32.50	32.43
10	T.	3.7	4.3	4.0	3.9	5.1	6.2	7.2
	S.	32.96	32.87	32.83	32.77	32.61	32.52	32.43
20	T.	3.7	4.13*	4.1	3.9	5.1	6.1	7.2
	S.	32.93	32.87	32.83	32.77	32.61	32.50	32.49
30	T.	3.7	4.2	4.1	3.9	5.1	6.1	7.2
	S.	32.93	32.88	32.82	32.77	32.61	32.50	32.44
50	T.	3.7	4.2	4.0	3.8	5.1	6.0	7.1
	S.	32.90	32.91	32.82	32.77	32.61	32.50	32.44
75	T.	3.7	4.2	4.0		4.8	5.9	6.1
	S.	32.92	32.91	32.84	32.78	32.63	32.50	32.44
100	T.	3.7	4.10*	4.8	3.4	4.8	5.9	6.1
	S.	32.92	32.90	32.85	32.88	32.63	32.50	32.61
120	T.	3.64*		3.8	4.03*	4.17*	5.5	7.18*
	S.				32.77	32.73	32.60	33.01
130	T.	3.8	4.18	3.8	3.94*	4.17*	5.82*	7.47*
	S.	32.92	32.98		32.79	33.04	32.67	33.44
140	T.			3.99*		4.25	5.87	7.57
	S.			32.84		33.16	33.38	33.55
150	T.	3.9	4.2	4.1		4.1	6.0	
	S.	33.13	33.00	32.85	32.79	33.60	33.40	
160	T.	3.82*		4.11*			5.94*	
	S.	33.30		33.15			33.69	
165				4.2				

Table 5. Expendable bathythermograph temperature profiles with depth.

Serial No.	1	2	3	4	5	6	7	8	9	10	11	12												
Date:	18.3.69	18.3.69	18.3.69	18.3.69	18.3.69	18.3.69	18.3.69	18.3.69	19.3.69	19.3.69	19.3.69	19.3.69												
Time GMT:	0824	1200	1600	2026	0030	0354	0830	1230	1700	2100	0100	0430												
Latitude:	48°48'N	48°52'N	48°56'N	49°00'N	49°05'N	49°06'N	49°11'N	49°17'N	49°19'N	49°25'N	49°29'N	49°34'N												
Longitude:	126°32'W	127°44'W	128°55'W	130°04'W	131°35'W	131°51'W	132°59'W	134°16'W	135°47'W	136°58'W	137°50'W	138°56'W												
Ref. Temp. °C:	7.8	6.8	6.8	6.4	6.2	5.9	6.3	6.2	5.5	5.5	5.8	5.8												
	Depth	Temp.	Depth	Temp.	Depth	Temp.	Depth	Temp.	Depth	Temp.	Depth	Temp.	Depth	Temp.	Depth	Temp.	Depth	Temp.						
	0	8.0	0	6.7	0	6.8	0	6.5	0	6.1	0	6.0	0	6.2	0	5.6	0	5.3	0	5.5	0	5.8	0	5.8
	10	8.0	36	6.7	80	6.8	40	6.5	70	6.0	26	6.0	25	6.2	29	5.6	100	5.3	50	5.5	17	5.7	7	5.6
	20	7.4	61	6.5	82	7.3	60	6.2	100	7.1	30	5.8	33	6.0	30	5.5	121	6.5	100	5.3	100	5.7	100	5.6
	45	7.4	100	6.5	100	7.8	100	6.8	125	7.1	75	5.6	72	5.7	80	5.3	130	6.4	120	5.3	120	5.8	110	5.6
	70	8.8	108	6.5	200	6.7	140	6.8	200	6.3	100	6.3	84	5.8	86	5.0	170	5.2	125	5.4	130	5.5	200	4.8
	100	8.7	125	7.0	290	5.8	200	6.0	300	5.7	120	6.5	100	6.3	100	5.5	180	5.2	130	5.3	169	5.2	300	4.3
	200	7.5	169	7.0	300	6.3	300	5.2	400	5.5	130	6.4	200	6.0	110	6.0	200	5.8	133	5.4	170	5.5	400	4.1
	244	7.0	200	6.7	390	5.3	350	5.0	480	5.2	133	6.0	300	4.5	120	6.5	260	5.0	160	5.0	200	5.4	420	4.0
	260	7.2	300	5.8			400	5.0	500	5.3	150	6.7	400	4.2	125	6.8	300	5.0	200	4.7	300	4.6	500	4.2
	275	7.2	400	5.2			480	5.1	528	5.6	200	5.2	462	4.2	150	6.5	342	5.0	250	4.1	400	4.3	509	4.3
	284	7.0	500	5.0			500	5.5			300	4.8	500	4.6			400	4.8	300	4.1	450	4.3		
			510	5.0			506	5.5			400	4.3	530	5.3			450	4.8	336	4.1	500	5.0		
											500	4.2					500	4.8	340	4.0	513	5.3		
											530	4.2					523	5.0	400	4.0				

Serial No.	13	14	15	16	17	18	19	20	21	22	23	24													
Date:	19.3.69	20.3.69	20.3.69	20.3.69	20.3.69	20.3.69	20.3.69	21.3.69	21.3.69	21.3.69	22.3.69	22.3.69													
Time GMT:	0854	1320	1730	2130	0130	0510	0940	1340	1800	2200	0200	0520													
Latitude:	49°40'N	49°44'N	49°40'N	49°46'N	49°52'N	50°04'N	50°01'N	50°00'N	50°01'N	50°00'N	49°59'N	50°00'N													
Longitude:	140°05'W	141°22'W	142°33'W	143°42'W	144°14'W	145°18'W	146°14'W	147°28'W	148°47'W	150°02'W	150°13.5'W	151°40'W													
Ref. Temp. °C:	5.2	4.8	4.8	4.6	4.8	4.5	4.1	4.1	3.8	3.9	3.8	3.9													
	Depth	Temp.	Depth	Temp.	Depth	Temp.	Depth	Temp.	Depth	Temp.	Depth	Temp.	Depth	Temp.	Depth	Temp.	Depth	Temp.							
	0	5.2	0	4.8	0	4.8	0	4.5	0	4.7	0	4.5	0	4.0	0	3.8	0	3.9	0	3.9	0	3.9	0	4.0	
	3	5.4	90	4.6	50	4.8	40	4.5	10	4.4	10	4.5	15	4.0	29	3.8	72	3.8	5	4.0	100	4.0	27	4.0	
	7	5.2	100	4.7	100	4.5	70	4.3	100	4.7	15	4.4	16	3.9	31	3.7	89	3.7	30	3.9	110	4.4	80	3.8	
	13	5.2	200	4.2	107	4.3	100	4.3	200	4.2	100	4.3	49	3.9	84	3.7	94	5.3	100	3.9	150	4.3	100	3.5	
	15	5.5	210	4.0	130	4.3	120	4.3	300	4.1	135	4.3	50	4.2	100	3.6	100	5.0	105	3.8	200	4.1	110	3.5	
	22	5.3	300	4.0	135	4.5	200	3.8	400	4.0	140	4.2	60	4.3	110	3.6	130	4.3	135	3.7	300	4.1	130	4.0	
	25	5.6	400	4.0	200	4.2	220	3.7	500	3.8	148	4.2	120	4.0	120	4.1	135	4.8	140	4.4	400	4.1	150	4.2	
	30	5.4	460	4.0	300	3.8	300	3.7	528	3.8	150	4.1	135	4.3	160	4.0	170	4.0	200	4.2	500	4.2	200	4.0	
	50	5.2	500	4.3	400	3.8	350	3.7			160	4.1	160	4.0	200	3.9	200	4.0	240	4.1	520	4.4	250	3.8	
	100	5.0	530	5.3	460	3.8	400	3.6			170	4.0	200	3.9	300	3.9	300	4.0	300	4.2			300	3.8	
	138	4.8			500	3.8	450	3.6			200	3.9	300	3.8	400	3.9	400	4.0	400	4.2			400	3.8	
	150	5.4			543	3.7	500	3.5			300	3.8	400	3.7	500	3.6	500	4.2	500	4.9			500	4.0	
											500	3.6					538	4.4			530	5.4		522	4.2

Continued

Serial No.	25	26	27	28	29	30	31	31	33	34	35	36
Date:	22.3.69	22.3.69	22.3.69	22.3.69	23.3.69	23.3.69	22.3.69	23.3.69	23.3.69	24.3.69	24.3.69	24.3.69
Time:	1030	1420	1830	2230	0225	0557	1030	1445	1900	2100	2300	0300
Latitude:	50°00'N	50°00'N	50°00'N	50°00'N	50°00'N	50°00'N	50°00'N	50°00'N	50°00'N	50°00'N	49°40'N	49°43'N
Longitude:	152°50'W	154°07'W	155°28'W	156°48'W	157°34'W	158°38'W	160°00'W	161°15'W	162°33'W	163°13'W	163°50'W	164°36'W
Ref. Temp. °C:	3.9	4.3	4.3	4.0	3.7	4.0	3.8	3.8	3.7	3.9	4.1	3.8
	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>
	0 3.9	0 4.4	0 4.3	0 4.0	0 3.8	0 4.2	0 4.0	0 4.0	0 4.2	0 4.1	0 4.2	0 3.8
	10 3.9	60 4.4	3 4.5	5 3.9	100 3.8	100 4.2	100 4.0	100 4.0	12 4.3	12 4.0	4 4.1	100 3.8
	13 3.8	100 4.2	20 4.4	70 3.9	120 3.8	170 4.2	110 4.0	144 3.9	60 4.3	100 4.0	100 4.1	108 3.8
	90 3.8	125 3.8	65 4.4	100 3.7	122 3.7	200 4.3	155 4.5	170 4.3	63 6.2	120 4.0	130 4.1	142 4.6
	100 3.7	175 4.7	66 4.5	105 4.0	138 3.7	300 4.0	200 4.4	200 4.2	67 5.3	160 4.3	142 4.4	190 4.5
	108 3.6	200 4.3	100 4.5	120 4.2	170 4.3	400 4.0	225 4.2	240 4.0	70 7.5	200 4.3	170 4.4	200 4.3
	120 4.0	300 4.0	148 4.4	180 4.2	200 4.3	450 4.0	300 4.1	300 3.9	90 5.2	232 4.2	200 4.3	300 4.0
	140 4.2	400 4.1	150 5.0	200 4.1	300 4.0	470 4.1	400 4.0	400 3.8	93 5.4	235 4.7	220 4.2	400 4.0
	200 4.0	425 4.7	165 4.8	235 3.9	400 4.0	500 4.4	460 3.9	465 3.8	100 5.1	248 4.3	300 4.1	460 3.9
	240 3.9	460 4.8	190 5.0	300 3.9	480 4.0		495 4.1	500 3.9	125 4.8	250 4.5	400 4.0	500 4.2
	300 3.9	498 5.5	200 4.7	400 3.8	500 4.2			513 3.9	142 5.0	300 4.2	500 4.0	
	400 3.9		220 4.5	480 3.8	510 4.2				200 5.0	400 4.0	510 4.0	
	500 3.9		255 4.8						300 4.8	500 4.0		
			300 4.6						358 4.7			

Serial No.	37	38	39	40	41	42	43	44	45	46	47	48
Date:	23.3.69	23.3.69	24.3.69	24.3.69	24.3.69	24.3.69	24.3.69	24.3.69	25.3.69	25.3.69	25.3.69	25.3.69
Time:	0710	1100	1530	1930	2340	0330	0741	1200	1600	2000	2400	0400
Latitude:	49°46'N	49°50'N	49°54'N	48°58'N	49°54'N	49°52'N	49°41'N	49°41'N	49°35'N	49°28'N	49°22'N	49°19'N
Longitude:	165°40'W	166°49'W	168°05'W	169°26'W	170°31'W	171°06'W	173°32'W	174°08'W	174°17'W	175°27'W	176°28'W	177°02'W
Ref. Temp. °C:	3.9	4.1	4.0	3.9	3.7	3.5	3.4	3.2	3.4	3.3	3.3	3.3
	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>
	0 4.0	0 4.1	0 4.0	0 3.9	0 3.6	0 3.5	0 3.5	0 3.2	0 3.4	0 3.3	0 3.3	0 3.4
	100 4.0	100 4.1	100 3.9	10 3.9	100 3.5	40 3.5	100 3.5	100 3.2	25 3.5	55 3.3	50 3.2	63 3.2
	120 4.0	118 4.1	120 3.9	30 3.5	119 3.5	41 3.4	110 3.6	110 3.2	90 3.5	80 3.2	90 3.2	100 4.3
	140 4.5	130 4.9	121 4.2	100 3.5	135 3.9	90 3.4	115 4.0	153 3.7	94 3.7	100 3.2	100 3.2	200 3.7
	200 4.5	140 4.9	140 4.6	120 4.0	152 3.9	100 3.5	140 4.0	155 3.5	100 3.7	120 3.1	130 3.3	300 3.8
	215 4.2	170 4.8	142 4.8	140 4.0	170 3.8	125 3.9	200 3.6	200 3.2	121 3.7	140 3.7	140 3.5	400 3.8
	300 4.3	190 4.4	150 4.8	158 4.3	172 3.7	200 3.5	250 3.6	255 3.3	130 3.6	200 3.4	150 3.5	458 3.8
	350 4.3	200 4.3	155 4.3	160 4.1	196 3.7	270 3.5	260 3.7	265 3.5	131 3.7	213 3.3	160 3.4	500 4.5
	400 4.2	300 4.1	164 4.2	200 3.7	200 3.6	300 3.7	300 3.7	300 3.5	136 3.8	220 3.5	200 3.3	
	420 4.2	400 4.0	165 4.1	210 3.5	224 3.6	315 3.8	350 3.7	400 3.6	158 3.8	300 3.7	240 3.3	
		500 3.9	188 4.0	275 3.5	226 3.5	385 3.8	400 3.8	479 3.7	159 3.7	400 3.7		
		510 3.9	200 3.8	300 3.7	242 3.5	400 3.7	430 3.8	490 3.8	166 3.7	450 3.7		
			300 3.7	400 3.7	257 3.6	500 3.6			170 3.5	500 3.6		
			400 3.8	500 3.8	259 3.7	532 3.6			200 3.4	520 3.5		

Serial No.	49	50	51	52	53	54	55	56	57	58	59	60
Date:	25.3.69	25.3.69	25.3.69	27.3.69	27.3.69	28.3.69	28.3.69	28.3.69	28.3.69	28.3.69	28.3.69	29.3.69
Time:	0415	0838	1210	1600	0800	1600	2000	2400	0400	0800	1200	1600
Latitude:	49°19'N	49°14'N	49°08'N	49°04'N	48°53'N	48°45'N	48°35'N	48°22'N	48°16'N	48°06'N	47°56'N	47°49'N
Longitude:	177°04'W	178°03'W	178°59'W	179°39'W	179°04'E	177°42'E	176°39'E	175°53'E	175°25'E	174°28'E	173°42'E	172°47'E
Ref. Temp. °C:	3.3	3.3	3.5	3.7	4.6	3.0	3.2	3.1	3.4	3.1	3.0	2.9
	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>
	0 3.3	0 3.4	0 3.4	0 3.5	0 4.0	0 3.0	0 3.0	0 3.0	0 3.2	0 2.8	0 3.0	0 2.7
100	3.3	25 3.5	60 3.4	100 3.5	10 4.0	100 3.0	100 3.0	100 3.0	18 3.2	100 2.8	100 3.0	68 2.7
120	3.5	50 3.5	70 3.5	149 3.5	20 4.1	113 3.0	130 3.0	110 3.8	25 4.1	136 2.8	142 3.0	70 2.6
150	3.4	60 3.3	100 3.5	170 3.8	50 4.2	135 3.2	150 3.2	140 3.1	50 3.5	164 3.3	155 3.3	100 2.6
200	3.4	100 3.3	110 3.5	200 3.7	100 5.0	160 3.7	200 3.3	170 4.0	100 3.5		172 3.3	132 2.6
300	3.6	115 3.3	140 4.1	300 3.7	190 8.4	200 3.5	233 3.5	200 3.7	140 3.5		182 3.4	169 3.8
362	3.6	130 3.2	200 3.7	360 3.7	200 8.1	250 3.4	240 3.8		180 3.8		200 3.6	200 3.7
		130 3.2	240 3.5	373 4.0	300 7.7	300 3.5	300 3.8		185 3.3		205 3.7	229 3.7
		160 3.8	280 3.7	400 3.9	400 7.5	342 3.6	400 3.8		200 3.4		225 3.7	231 3.8
		170 3.8	300 3.7	425 3.8	450 7.3	350 3.9	448 3.8		225 4.2		227 3.6	260 3.8
		200 3.5	400 3.7	430 3.9		358 3.8			237 3.8		300 3.6	262 3.7
		220 3.3	500 3.7	460 4.0		400 3.8			250 4.0		388 3.6	300 3.8
		300 3.5				460 3.8			278 4.0			320 3.8
		365 3.6				500 4.7			280 3.3			322 4.0

Serial No.	61	62	63	64	65	66	67	68	69	70	71	72
Date:	29.3.69	29.3.69	29.3.69	29.3.69	29.3.69	30.3.69	30.3.69	30.3.69	30.3.69	30.3.69	30.3.69	31.3.69
Time:	2030	0030	0430	0830	1230	1700	2100	0100	0500	0915	1330	1730
Latitude:	47°38'N	47°25'N	47°12'N	47°00'N	46°43'N	46°26'N	46°07'N	45°45'N	45°30'N	45°07'N	44°43'N	44°17'N
Longitude:	171°53'E	171°12'E	170°18'E	169°30'E	168°24'E	167°17'E	164°03'E	163°53'E	163°55'E	162°53'E	161°35'W	160°13'E
Ref. Temp. °C:	4.2	3.4	2.9	2.6	2.7	3.1	1.9	2.6	3.4	4.1	2.8	3.8
	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>
	0 4.2	0 3.5	0 2.7	0 2.3	0 2.5	0 2.8	0 1.6	0 2.5	0 3.3	0 3.5	0 2.1	0 3.7
100	4.2	7 3.7	100 2.7	60 2.3	100 2.5	100 2.8	10 1.6	80 2.5	10 3.2	10 3.5	88 2.0	38 3.8
120	4.2	10 3.5	168 2.7	62 2.2	140 2.5	160 2.8	11 1.7	100 2.7	50 3.1	13 3.3	95 1.8	70 6.3
130	4.1	72 3.3	170 3.0	98 2.2	141 2.9		48 1.7	150 2.7	100 3.1	70 3.3	100 1.8	100 6.3
170	4.2	85 3.3	200 3.3	100 2.3	148 3.4		50 1.8	200 4.2	150 3.2	100 4.1	117 1.8	200 6.9
190	4.0	100 2.8	250 3.5	140 2.3	156 3.4		100 1.7	220 3.9	200 3.9	150 4.2	118 1.7	270 6.7
200	4.0	120 2.8	300 3.5	200 3.2	166 3.7		112 1.7	250 3.8	250 3.7	200 4.2	126 1.7	300 5.4
300	4.0	140 3.0	400 3.5	230 3.7	170 3.7			260 4.0	280 4.0	210 4.2	130 2.0	320 5.0
400	4.0	147 3.1	450 3.5	300 3.7	172 3.6			300 4.0	300 4.0	300 3.7	137 4.0	350 5.0
450	4.0	149 3.3		378 3.7	200 3.6			330 4.0	350 3.7	400 3.3	159 5.3	400 4.0
		159 3.3		400 3.8	300 3.7			400 3.7		450 3.7	167 5.3	425 3.7
		169 3.6		400 3.8				450 3.7			176 5.6	450 4.0
		190 3.7		418 3.8							188 4.0	
		193 3.6									200 3.3	

Serial No.	73		74		75		76		77		78		79		80		81		82		83		84	
Date:	31.3.69		31.3.69		31.3.69		31.3.69		1.4.69		1.4.69		1.4.69		1.4.69		2.4.69		2.4.69		2.4.69		2.4.69	
Time:	2130		0130		0530		1400		0200		0600		1000		1400		1800		2200		0200		0600	
Latitude:	43°57'N		43°34'N		43°29'N		43°15'N		42°12'N		41°36'N		41°10'N		40°41'N		40°11'N		39°40'N		39°11'N		38°36'N	
Longitude:	159°07'E		157°56'E		157°58'E		156°57'E		156°43'E		155°52'E		154°45'E		153°45'E		152°33'E		151°33'E		150°25'E		149°20'E	
Ref. Temp. °C:	5.1		2.5		2.6		6.9		8.2		9.8		8.3		11.9		12.1		9.0		11.6		13.1	
	Depth	Temp.	Depth	Temp.	Depth	Temp.	Depth	Temp.	Depth	Temp.	Depth	Temp.	Depth	Temp.	Depth	Temp.	Depth	Temp.	Depth	Temp.	Depth	Temp.	Depth	Temp.
	0	4.2	0	2.0	0	2.0	0	6.7	0	8.3	0	9.7	0	8.3	0	12.0	0	12.2	0	9.0	0	11.4	0	13.3
	25	4.2	20	2.0	72	2.0	51	6.7	93	8.3	22	9.5	22	8.3	49	12.0	10	12.1	10	8.9	20	11.2	2	13.2
	100	6.3	25	1.9	95	1.8	58	7.0	100	8.1	45	9.3	75	6.5	100	11.8	90	12.1	70	8.8	22	10.8	100	13.2
	120	6.7	50	1.9	100	2.0	93	6.9	108	8.1	60	8.0	90	4.7	110	11.7	94	12.2	100	7.7	28	11.0	140	13.3
	180	6.7	65	1.8	148	4.3	96	6.8	110	8.0	100	7.3	100	4.6	135	10.8	100	11.9	200	5.0	100	8.8	200	13.2
	200	6.5	90	2.0	170	3.0	100	6.8	122	8.0	138	7.0	160	4.6	147	10.8	200	9.5	270	4.4	200	6.0	260	13.2
	220	6.5	100	2.1	200	2.8	154	6.7	200	7.0	170	5.4	170	4.5	200	9.0	300	6.8	280	4.9	210	5.8	300	11.8
	252	4.9	135	3.3	212	3.3	161	5.5	300	5.5	200	5.3	200	4.5	213	8.3	350	5.8	290	4.2	212	4.9	400	9.2
	260	5.0	150	3.2	220	2.8	165	5.9	400	4.7	235	6.2	220	4.5	216	8.4	400	5.3	300	4.3	241	4.8	430	8.3
	270	5.0	160	3.0	230	3.0	170	6.0	450	4.6	300	5.6	272	3.5	300	8.3	450	4.8	360	4.2	260	5.6		
	285	4.3	200	3.0	300	3.0	171	5.5			400	4.5	285	3.8	318	8.2			363	4.5	270	5.6		
	300	4.0	250	3.4	400	3.3	190	5.5			433	4.4	300	3.6	335	7.0			400	4.5	290	5.1		
	305	3.8	260	3.2	450	3.7	200	5.8			450	4.6	308	2.8	380	6.0			450	3.9	300	4.1		
	315	4.2	300	3.3			202	6.1			316	3.2	400	6.0							328	3.5		

Serial No.	85		86		87		88		89		90		91		92		93		94		95		96		
Date:	2.4.69		3.4.69		3.4.69		3.4.69		3.4.69		4.4.69		4.4.69		4.4.69		6.4.69		10.4.69		10.4.69		10.4.69		
Time:	1000		0230		0630		1050		1430		1830		2230		0230		2300		0700		1100		1500		
Latitude:	37°59'N		37°56'N		37°31'N		37°08'N		36°41'N		36°25'N		36°03'N		35°53'N		34°44'N		34°53'N		35°35'N		36°24'N		
Longitude:	148°39'E		147°20'E		146°57'E		146°11'E		145°07'E		144°12'E		143°27'E		143°02'E		140°10'E		140°08'E		141°02'E		141°18'E		
Ref. Temp. °C:	13.1		13.4		13.5		16.1		16.1		13.6		18.2		18.3		17.9		17.1		17.0		15.3		
	Depth	Temp.	Depth	Temp.	Depth	Temp.	Depth	Temp.	Depth	Temp.	Depth	Temp.	Depth	Temp.	Depth	Temp.	Depth	Temp.	Depth	Temp.	Depth	Temp.	Depth	Temp.	
	0	13.0	0	13.4	0	13.5	0	16.1	0	16.1	0	13.6	0	18.2	0	18.3	0	17.8	0	17.1	0	17.1	0	14.8	
	100	13.0	50	13.4	50	13.5	90	16.1	8	16.2	67	13.0	80	18.2	50	18.3	100	17.9	3	16.8	2	16.6	52	14.8	
	130	13.0	51	13.0	100	10.8	100	14.9	64	16.8	100	11.4	100	18.1	69	18.2	110	17.9	100	16.3	19	16.5	67	14.7	
	132	13.1	61	12.4	200	4.3	200	11.6	85	15.7	168	8.3	120	18.0	82	17.7	200	16.8	200	14.3	65	15.7	80	14.7	
	174	13.1	100	12.0	230	6.7	300	8.2	100	14.6	179	8.0	178	17.3	100	17.6	225	16.5	270	10.7	80	14.4	100	13.8	
	180	13.3	131	11.2	300	5.7	315	8.2	190	12.0	183	8.5	200	16.7	150	17.5	275	15.0	300	10.0	100	13.7	113	13.3	
	200	13.3	142	11.2	350	5.0	317	8.4	200	11.6	200	8.2	280	14.9	200	16.8	300	12.7	350	9.0	105	13.7	155	13.0	
	250	13.0	148	10.8	380	4.7	370	6.2	270	9.2	240	7.8	300	14.0	233	16.5	311	12.4	400	6.9			200	10.6	
	300	11.2	200	10.0	400	4.8	400	5.8	300	7.8	245	7.0	325	13.4	250	15.7	321	11.4	450	6.4				282	7.0
	384	7.7	230	10.0	430	4.7	430	5.1	360	7.3	260	6.8	330	12.8	300	15.0	340	11.1						300	7.7
	400	7.7	283	7.2	438	4.2	450	5.3	400	6.6	270	7.1	335	12.5	331	14.5	345	10.1						312	6.7
	450	6.0	300	7.4	450	4.6			450	5.9	293	7.1	400	10.4	400	11.9	370	9.8						400	5.3
			316	7.3					300	6.8			420	10.0	450	9.7	400	8.1						400	5.3
			340	6.9							400	5.2	455	9.7			415	7.5						450	5.4

Continued . . .

Table 5 - cont'd.

Serial No.	97	98	99	100	101	102	103	104	105	106	107	108											
Date:	11.4.69	11.4.69	11.4.69	11.4.69	11.4.69	11.4.69	12.4.69	15.4.69	16.4.69	16.4.69	16.4.69	16.4.69											
Time:	1900	2300	0300	0700	1100	1500	1900	1440	1820	2200	0200	0600											
Latitude:	37°01'N	38°02'N	38°47'N	39°26'N	40°09'N	40°47'N	41°22'N	41°41'N	41°40'N	41°40'N	41°38'N	41°41'N											
Longitude:	141°34'E	141°51'E	142°06'E	142°19'E	142°10'E	141°59'E	141°46'E	143°41'E	144°40'E	145°46'E	146°45'E	147°26'E											
Ref. Temp. °C:	14.1	13.6	9.2	9.2	8.1	6.5	6.0	2.0	4.0	5.6	10.7	4.2											
Depth	Temp.	Depth	Temp.	Depth	Temp.	Depth	Temp.	Depth	Temp.	Depth	Temp.	Depth	Temp.	Depth	Temp.	Depth	Temp.						
0	14.2			0	8.7	0	9.0	0	7.0	0	6.1	0	5.2	0	1.5	0	3.3	0	5.4	0	10.7	0	3.7
30	14.2	35	12.9	3	8.9	10	8.5	18	7.0	15	8.7	22	5.2	8	1.6	20	3.3	10	5.4	25	10.7	13	3.7
50	13.2	40	12.9	68	8.1	100	7.5	20	6.8	50	9.9	28	5.5	17	1.3	23	3.0	14	7.2	32	10.0	23	3.1
70	12.4	100	10.5	93	7.4	160	6.3	27	6.9	55	9.2	56	5.1	100	1.9	55	3.2	22	7.3	50	9.4	90	6.4
80	11.4	200	7.0	100	6.9	200	6.2	40	7.8	80	10.3	100	5.6	121	2.2	71	2.9	100	3.7	62	9.4	98	6.2
100	10.7			104	6.5	255	6.2	100	8.8	100	10.1	120	6.1	124	3.2	100	3.3	103	3.5	100	8.3	100	6.3
120	9.7			135	6.4	300	5.7	120	9.0	160	9.7	131	6.2	132	3.4	150	3.3	142	3.5	138	7.7	150	6.8
132	9.7			200	6.0	335	5.3	140	8.9	200	9.7	200	6.2	178	7.4	155	3.0	160	3.7	150	6.1	175	6.5
150	8.0			246	5.5	350	5.8	160	8.7	265	9.4	231	5.9	200	4.5	200	3.2	200	3.5	200	4.9	187	5.0
189	6.8			248	5.3	400	5.7	183	8.7	300	10.0	300	5.9	235	3.5	230	3.2	250	2.8	230	3.2	200	5.2
191	5.9			300	5.4			190	8.5	350	10.1	332	5.3	268	5.5	240	3.0	300	3.2	237	3.7	250	5.9
200	5.0			400	5.7			198	8.5	400	11.3	342	4.3	300	4.4	247	3.2	330	3.0	248	3.0	280	5.5
221	4.9			413	5.7							370	4.5	322	3.8	300	3.3	400	3.6	270	2.9	300	5.8
												400	4.0			400	3.3	410	3.7	280	4.7	310	5.9

Serial No.	109	110	111	112	113	114	115	116	117	118	119	120											
Date:	16.4.69	16.4.69	17.4.69	17.4.69	17.4.69	17.4.69	17.4.69	17.4.69	18.4.69	18.4.69	18.4.69	18.4.69											
Time:	1115	1400	1730	2130	0130	0530	0930	1330	1730	2130	0130	0530											
Latitude:	41°40'N	41°40'N	41°40'N	41°40'N	41°38'N	41°41'N	42°04'N	42°25'N	42°48'N	43°12'N	43°30'N	43°42'N											
Longitude:	148°31'E	149°17'E	150°21'E	151°30'E	152°24'E	153°00'E	153°58'E	154°48'E	155°43'E	156°43'E	157°25'E	157°48'E											
Ref. Temp. °C:	4.9	7.9	2.1	5.3	9.4	9.8	8.8	8.5	8.5	7.8	2.4	2.7											
Depth	Temp.	Depth	Temp.	Depth	Temp.	Depth	Temp.	Depth	Temp.	Depth	Temp.	Depth	Temp.	Depth	Temp.	Depth	Temp.						
0	4.9	0	7.5	0	1.5	0	4.8	0	9.3	0	9.5	0	8.5	0	8.0	0	8.2	0	7.5	0	2.2	0	2.1
17	4.9	30	7.5	60	2.1	7	4.9	52	9.3	37	9.5	51	8.3	87	8.6	100	8.3	100	7.5	17	2.2	100	2.0
42	6.8	49	6.8	66	1.8	30	4.9	75	8.2	100	7.7	100	6.7	96	8.6	110	8.3	150	7.5	20	2.4	136	4.2
69	6.8	65	6.5	80	3.2	44	4.3	80	8.4	200	5.0	123	5.8	100	8.5	200	7.3	170	7.2	60	2.2	152	2.8
100	6.5	95	5.5	100	3.1	50	4.5	92	7.6	255	4.5	151	7.6	169	6.0	210	7.2	200	7.2	80	2.4	163	3.8
120	6.3	100	5.5	140	2.3	70	3.7	100	9.2	275	5.2	161	7.0	200	6.0	225	5.7	245	7.0	85	2.8	190	3.3
165	4.5	150	4.9	150	2.5	90	4.2	189	5.4	300	5.0	200	10.3	225	6.0	255	5.8	280	6.2	100	2.8	200	3.6
200	4.2	152	4.0	174	1.9	100	3.5	195	6.3	320	4.5	209	8.5	233	5.5	275	5.3	290	5.4	119	2.8	250	3.0
210	4.2	200	3.9	200	2.3	117	3.5	200	6.1	325	4.7	215	9.7	272	5.3	285	5.7	300	5.2	125	3.5	280	3.5
230	3.7	300	4.0	300	2.8	140	4.7	300	4.8	346	4.0	220	9.0	300	5.5	300	5.5	330	4.6	143	2.9	300	3.3
250	4.2	400	3.3	350	3.2	170	4.3	330	3.8	352	4.5	230	11.0	312	5.5	345	4.7	333	5.2	180	2.7	350	3.1
260	4.0	450	3.2	362	2.9	200	4.8	355	3.9	400	4.3	239	10.1	328	5.0	400	4.2	380	4.3	200	3.0	400	3.2
300	4.1			400	2.9	214	3.0	400	3.7	450	4.2	252	10.5	376	5.0	440	4.0	400	4.3	218	3.1	450	3.4
330	4.4					265	5.0	405	3.5			300	9.0	400	4.6	450	4.5	415	4.1	230	3.4		

Continued . . .

Table 5 - cont'd.

Serial No.	121	122	123	124	125	126	127	128	129	130	131	132
Date:	18.4.69	18.4.69	19.4.69	19.4.69	19.4.69	19.4.69	19.4.69	19.4.69	20.4.69	20.4.69	20.4.69	20.4.69
Time:	0930	1330	1700	2100	0100	0500	0845	1300	1630	2030	0030	0430
Latitude:	44°03'N	44°22'N	44°42'N	45°01'N	45°17'N	45°30'N	45°48'N	46°03'N	46°22'N	46°41'N	46°58'N	47°04'N
Longitude:	158°44'E	159°30'E	160°30'E	161°32'E	162°26'E	163°09'E	164°12'E	154°06'E	166°10'E	167°15'E	168°01'E	168°51'E
Ref.Temp.°C:	2.9	6.1	3.4	2.9	4.5	3.1	3.1	2.0	2.3	2.7	2.7	3.4
	<u>Depth</u>	<u>Temp.</u>	<u>Depth</u>	<u>Temp.</u>	<u>Depth</u>	<u>Temp.</u>	<u>Depth</u>	<u>Temp.</u>	<u>Depth</u>	<u>Temp.</u>	<u>Depth</u>	<u>Temp.</u>
	0	2.3	0	5.8	0	2.7	0	1.7	0	4.1	0	2.5
	22	2.3	100	6.0	87	2.7	70	1.7	7	4.0	1	2.3
	30	2.8	156	6.0	100	3.0	100	1.4	100	4.0	20	2.3
	50	2.7	200	5.5	180	5.0	150	1.3	165	4.0	30	2.5
	93	3.0	222	4.2	200	4.5	185	2.9	175	4.2	100	2.6
	100	3.8	243	3.7	275	3.0	200	2.6	200	4.1	180	2.7
	140	5.0	246	4.2	300	3.2	262	2.9	245	4.1	200	2.9
	200	2.8	250	4.0	330	3.8	266	4.7	300	3.8	300	3.0
	245	3.9	300	3.6	355	3.3	278	3.7	320	3.8	400	3.4
	300	3.0	345	3.3	380	3.5	280	4.0		450	3.4	220
	350	4.4	365	2.9	400	3.3	300	3.3		250	3.8	300
	400	4.3	390	2.9	420	3.0	315	3.3		400	3.4	325
	450	4.5	400	3.1	450	3.5	320	3.4		250	3.8	400
							400	3.6		450	3.6	400
												400
												3.5

Serial No.	133	134	135	136	137	138	139	140	141	142	143	144
Date:	40.4.69	20.4.69	21.4.69	21.4.69	21.4.69	21.4.69	22.4.69	22.4.69	22.4.69	22.4.69	22.4.69	23.4.69
Time:	0830	1230	1630	2030	0750	1700	2030	0030	0430	0830	1230	1600
Latitude:	47°18'N	47°19'N	47°40'N	47°45'N	47°43'N	47°39'N	48°05'N	48°21'N	48°28'N	48°36'N	48°44'N	48°53'N
Longitude:	170°01'E	170°53'E	171°42'E	172°13'E	172°59'E	173°58'E	174°42'E	175°40'E	176°28'E	177°29'E	178°23'E	179°26'E
Ref.Temp.°C:	3.4	2.9	3.6	3.3	3.3	3.3	3.4	3.2	3.4	3.4	3.7	4.5
	<u>Depth</u>	<u>Temp.</u>	<u>Depth</u>	<u>Temp.</u>	<u>Depth</u>	<u>Temp.</u>	<u>Depth</u>	<u>Temp.</u>	<u>Depth</u>	<u>Temp.</u>	<u>Depth</u>	<u>Temp.</u>
	0	2.7	0	2.9	0	3.0	0	2.8	0	3.0	0	3.8
	100	2.6	100	5.4	22	3.0	2	2.9	63	3.0	100	2.8
	160	2.6	160	5.3	58	3.1	68	2.8	100	3.2	147	2.8
	200	3.5	181	5.9	62	2.8	73	2.7	162	3.2	153	3.2
	300	3.7	200	5.8	100	2.7	100	2.7	175	3.9	200	3.3
	400	3.7	218	5.8	148	2.8	160	2.7	183	3.7	300	3.5
	450	3.7	230	5.0	153	3.5	174	3.2	200	3.7	400	3.5
			244	5.7	200	3.5	200	3.2	300	3.8	450	3.4
			260	5.6	270	3.5	300	3.8	400	3.9		285
			300	5.7	300	3.6	342	3.7	450	3.9		190
			313	5.7	358	3.7	350	3.9				200
			316	5.6	361	4.0	360	3.7				285
			400	5.4	400	3.8	400	4.2				300
			450	5.2			416	4.2				300
												4.1
												4.4
												4.5

Continued . . .

Table 5 - cont'd.

Serial No.	145	146	147	148	149	150	151	152	153	154	155	156
Date:	23.4.69	23.4.69	23.4.69	23.4.69	23.4.69	23.4.69	23b.4.69	23b.4.69	23b.4.69	24.4.69	24.4.69	24.4.69
Time:	2000	2400	0400	0800	1200	2000	0400	0800	1200	1600	1930	2330
Latitude:	49°02'N	49°06'N	49°14'N	49°19'N	49°23'N	49°32'N	50°17'N	50°15'N	50°14'N	50°11'N	50°08'N	50°03'N
Longitude:	179°26'W	179°22'W	178°32'W	177°51'W	177°19'W	176°15'W	174°55'W	174°05'W	173°12'W	172°02'W	170°46'W	169°25'W
Ref.Temp.°C:	3.8	3.8	4.0	3.8	3.6	3.7	3.9	3.5	3.8	4.0	3.9	3.7
	<u>Depth</u>	<u>Temp.</u>	<u>Depth</u>	<u>Temp.</u>	<u>Depth</u>	<u>Temp.</u>	<u>Depth</u>	<u>Temp.</u>	<u>Depth</u>	<u>Temp.</u>	<u>Depth</u>	<u>Temp.</u>
	0	3.4	0	3.3	0	3.3	0	3.3	0	3.5	0	3.5
	2	3.5	44	3.3	70	3.0	58	3.3	36	3.3	70	3.3
	15	3.4	57	3.4	100	3.0	60	3.1	38	3.4	70	3.0
	100	3.3	76	3.2	110	3.0	100	3.0	66	3.4	100	3.2
	153	3.4	100	3.2	149	3.5	127	2.9	70	3.2	160	3.5
	170	4.0	144	3.2	150	3.9	150	3.5	82	3.2	180	3.3
	180	4.1	165	4.2	162	3.8	200	3.4	88	3.0	200	3.5
	200	4.0	200	4.2	170	4.7	250	3.5	100	3.0	250	3.6
	295	3.7	271	4.3	200	4.3	300	3.7	140	3.0	287	3.6
			276	4.1	250	4.2	342	3.7	157	3.5	300	3.9
			300	4.1	300	4.5			200	3.5	315	3.7
			325	4.1	400	5.5			248	3.5	400	4.1
			400	4.3	450	5.5			300	3.9		
			460	4.4					400	4.0		

Serial No.	157	158	159	160	161	162	163	164	165	166	167	168
Date:	24.4.69	24.4.69	24.4.69	25.4.69	25.4.69	25.4.69	25.4.69	25.4.69	25.4.69	26.4.69	26.4.69	26.4.69
Time:	0330	0820	1130	1630	1830	2230	0230	0630	1030	1430	1800	2200
Latitude:	50°07'N	50°00'N	50°00'N	50°00'N	50°00'N	50°00'N	50°02'N	50°02'N	50°02'N	50°02'N	50°02'N	50°05'N
Longitude:	169°17'W	167°32'W	166°35'W	164°46'W	164°06'W	162°46'W	162°15'W	160°66'W	159°56'W	158°42'W	157°24'W	156°06'W
Ref.Temp.°C:	4.3	4.5	4.4	4.0	4.2	4.3	4.6	4.4	4.4	4.4	4.2	4.4
	<u>Depth</u>	<u>Temp.</u>	<u>Depth</u>	<u>Temp.</u>	<u>Depth</u>	<u>Temp.</u>	<u>Depth</u>	<u>Temp.</u>	<u>Depth</u>	<u>Temp.</u>	<u>Depth</u>	<u>Temp.</u>
	0	4.0	0	3.9	0	3.9	0	3.4	0	3.8	0	3.9
	3	3.7	10	3.9	8	3.9	15	3.5	2	3.8	30	4.2
	100	3.7	12	3.8	9	3.8	20	3.6	50	3.6	32	4.3
	144	4.3	100	3.8	17	3.7	40	3.5	100	3.6	50	4.2
	160	4.0	130	3.8	100	3.8	100	3.5	110	3.6	100	4.2
	200	4.0	152	4.0	122	3.9	120	4.2	130	4.5	140	4.3
	250	3.8	165	4.0	125	4.0	200	3.6	200	3.7	200	4.1
	300	3.9	200	3.6	140	4.0	250	3.5	230	3.6	250	4.0
	350	3.8	255	3.3	182	3.5	300	3.6	300	3.6	300	4.0
	400	3.8	300	3.4	200	3.5	370	3.6	350	3.7	400	3.9
	450	3.8	380	3.5	300	3.5	400	3.7	400	3.6	340	3.9
			400	3.5	400	3.7	450	3.7	340	3.6		
			450	3.6	450	3.7						

Continued

Serial No.	169	170	171	172	173	174	175	176	177	178	179	180	181
Date:	26.4.69	26.4.69	26.4.69	27.4.69	27.4.69	27.4.69	27.4.69	27.4.69	27.4.69	28.4.69	28.4.69	28.4.69	28.4.69
Time:	0200	0600	1000	1400	1800	2200	0200	0600	1000	1345	1730	2130	0130
Latitude:	50°05'N	50°03'N	50°03'N	50°03'N	50°03'N	49°58'N	49°58'N	49°58'N	49°56'N	50°00'N	50°00'N	49°59'N	49°55'N
Longitude:	155°24'W	154°05'W	153°03'W	151°54'W	150°32'W	149°22'W	148°31'W	147°12'W	146°10'W	145°02'W	145°10'W	144°04'W	143°11'W
Ref. Temp. °C:	4.7	4.5	4.6	4.3	4.3	4.3	5.1	4.8	5.2	5.2	5.1	5.5	5.8
	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>
	0 4.3	0 4.2	0 4.2	0 3.9	0 4.0	0 3.9	0 4.2	0 4.5	0 4.7	0 4.8	0 4.8	0 5.6	0 5.3
	63 4.3	55 4.2	61 4.2	71 3.9	52 4.0	60 3.8	60 4.0	2 4.3	32 4.7	60 4.8	56 4.7	5 5.5	100 4.7
	100 3.9	65 4.0	62 4.0	73 3.8		100 3.4	100 3.8	28 4.3	35 4.8	100 4.5	75 4.5	55 5.5	125 4.2
	140 3.9	100 3.9	75 3.9	100 3.8		102 3.3	110 3.7	40 4.5	100 4.2	110 4.2	100 4.4	100 4.3	140 4.3
	155 4.3	120 4.0	100 3.9	120 3.8		110 3.8	150 3.8	60 4.5	105 3.8	128 4.2	108 4.1	130 4.3	200 3.8
	180 4.4		135 3.9	150 4.0		200 3.7	200 3.7	94 3.8	110 3.9	130 4.7	200 3.7	200 3.8	300 3.8
	200 4.2		140 4.3	200 4.0		285 3.7		100 3.8	200 3.7	200 3.8	300 3.7	300 3.8	400 3.7
	210 4.2		197 4.4	300 4.0		290 4.3		113 4.0	300 3.7	300 3.7	400 3.7	400 3.8	450 3.7
	240 3.9		200 4.3	400 3.9		300 4.1		180 3.8	400 3.6	400 3.7	450 3.8	450 3.7	
	300 3.8		245 3.9	460 3.9		400 3.8		200 4.2	450 3.6	450 3.8			
	400 3.8		300 3.8			450 3.8		250 5.3					
	450 3.7		400 3.9					300 5.3					
								310 4.7					
								320 4.9					

Serial No.	182	183	184	185	186	187	188	189	190	191	192	193	194
Date:	28.4.69	28.4.69	29.4.69	29.4.69	29.4.69	29.4.69	29.4.69	29.4.69	30.4.69	30.4.69	30.4.69	30.4.69	30.4.69
Time:	0530	0930	1300	1630	2030	0030	0430	0800	1130	1500	1900	2100	0300
Latitude:	49°49'N	49°44'N	49°40'N	49°34'N	49°28'N	49°28'N	49°20'N	49°14'N	49°06'N	49°02'N	48°55'N	48°51'N	48°42'N
Longitude:	141°42'W	140°32'W	139°05'W	137°38'W	136°18'W	135°29'W	133°52'W	132°57'W	131°22'W	130°10'W	128°34'W	127°59'W	126°35'W
Ref. Temp. °C:	5.7	5.7	5.9	6.5	6.6	6.9	6.8	6.9	8.2	8.0	7.8	7.6	8.3
	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>	<u>Depth</u> <u>Temp.</u>
	0 5.4	0 5.4	0 5.4	0 6.2	0 6.5	0 6.7	0 6.7	0 7.1	0 7.8	0 7.9	0 7.7	0 7.6	0 9.2
	10 5.5	20 5.4	18 6.0	3 6.0	2 6.3	10 6.5	50 6.5	3 7.1	50 7.4	2 7.8	2 7.9	8 7.5	2 9.1
	45 5.7	23 5.3	40 6.4	30 6.0	90 6.0	75 6.3	78 6.5	5 6.9	90 6.3	9 7.7	3 7.8	11 7.4	8 8.1
	80 5.3	46 5.3	60 6.4	53 5.9	100 5.7	90 6.8	90 6.0	80 6.8	100 6.8	10 6.8	6 7.9	40 7.4	16 8.1
	90 5.2	57 5.0	63 6.3	85 5.6	110 5.4	100 6.8	100 6.0	92 6.3	110 7.7	45 8.0	52 7.8	65 7.2	20 8.5
	92 5.0	90 5.0	92 6.4	96 5.1	140 6.0	200 6.3	110 6.0	100 6.3	130 8.0	50 7.5	68 7.7	70 6.3	30 8.4
	100 4.8	95 4.5	100 6.0	100 5.2	160 6.0	300 5.9	111 6.1	105 6.4	200 7.2	80 7.0	76 7.1	80 6.5	60 8.4
	200 4.5	100 4.5	101 5.9	120 5.6	200 5.5	400 5.4	129 6.1	180 6.1	300 6.1	100 7.1	100 7.1	100 7.7	66 8.7
	300 4.3	153 4.5	122 6.0	150 5.3	280 4.5	450 5.3	130 6.0	200 5.8	318 6.0	125 7.2		120 7.8	80 8.9
	400 4.2	200 4.0	140 6.0	170 5.4	300 4.3		200 5.5	241 5.4	342 7.8	200 6.4		200 7.3	100 8.7
	450 4.1	300 3.9	151 6.8	200 5.0	400 4.1		300 4.5	250 6.1	380 7.8	250 5.8		210 7.0	200 7.5
		400 3.7	200 6.7	300 4.2	455 4.0		400 4.2	260 6.1	396 9.0	300 5.5		230 7.0	300 6.5
		460 3.7	300 6.0	400 3.8			450 4.2	300 5.5	400 8.9	306 5.1		300 6.3	400 5.6
			330 5.9	450 3.7				400 5.5	418 8.8	350 5.0		350 5.3	450 5.5

Table 6. Total daily radiation (lys/day) and hours of daylight.

Date	Station No.	Radiation	Hr. min.
<u>Westbound</u>			
March 18	TP 1	116	12.00
19	TP 2	233	12.00
20	TP 3	356	12.00
21	TP 4	220	12.15
22	TP 5	100*	12.15
23	TP 6	292	12.15
24	TP 7	190	12.25
25	TP 8	330	12.25
27	TP 9	310	12.35
28	TP 10	270*	12.35
29	TP 11	242	12.30
30	TP 12	436	12.30
31	TP 13	280	12.35
April 1	TP 14	missing	12.35
2	TP 15	192	12.40
3	TP 16	missing	12.40
4	TP 17	310	12.40
<u>Eastbound</u>			
April 16	TP 24	303	13.15
17	TP 25	390	13.20
18	TP 26	285	13.25
19	TP 27	290	13.35
20	TP 28	117	13.35
21	TP 29	100	13.55
22	TP 30	150	14.00
23(1)	TP 31	154	14.15
23(2)	TP 32	345	14.15
24	TP 33	425	14.15
25	TP 34	315	14.15
26	TP 35	590	14.25
27	TP 36	620	14.25
28	TP 37	580	14.25
29	TP 38	250	14.35
30	TP 39	357	14.35

*Total radiation extrapolated from incomplete record.

Table 7. Extinction coefficient and Secchi depth

Date	Station	Extinction coefficient (4300A, \log_{10} 0 to 20 m)	Secchi depth (m)
<u>Westbound</u>			
18.3.69	TP 1	0.066	12
19.3.69	TP 2	0.041	17
20.3.69	TP 3	0.023	20
21.3.69	TP 4	0.030	20
22.3.69	TP 5	0.042	17
23.3.69	TP 6	0.045	17
24.3.69	TP 7	0.044	18
25.3.69	TP 8	0.041	17
28.3.69	TP 10	0.039	18
30.3.69	TP 12	0.039	19
31.3.69	TP 13	0.041	18
<u>Eastbound</u>			
16.4.69	TP 24	0.050	12
17.4.69	TP 25	0.045	15
18.4.69	TP 26	0.033	20
19.4.69	TP 27	0.031	21
20.4.69	TP 28	0.034	19
22.4.69	TP 30	0.028	22
24.4.69	TP 33	0.042	18
25.4.69	TP 34	0.041	17
27.4.69	TP 36	0.027	17
28.4.69	TP 37	0.036	18
29.4.69	TP 38	0.041	-
30.4.69	TP 39	0.043	-

Table 8. Chlorophyll a profiles with depth.

Westbound

Date	18.3.69	19.3.69	20.3.69	21.3.69
Station	TP 1	TP 2	TP 3	TP 4
Depth (m)	Chl <u>a</u> (mg/m ³)	Chl <u>a</u> (mg/m ³)	Chl <u>a</u> (mg/m ³)	Chl <u>a</u> (mg/m ³)
0	1.62	0.75	0.39	0.47
5	1.76	0.48	0.46	0.43
10	0.92	0.63	0.31	0.48
20	1.02	0.69	0.48	0.47
30	1.02	0.64	0.35	0.27
50	0.86	0.67	0.41	0.44
75	0.84	0.66	0.41	0.41
100	-	0.54	0.23	0.14
150	-	0.01	0.01	0.01

Cont'd ...

Table 8 continued

Westbound

Date	22.3.69	23.3.69	24.3.69
Station	TP 5	TP 6	TP 7
Depth (m)	Chl <u>a</u> (mg/m ³)	Chl <u>a</u> (mg/m ³)	Chl <u>a</u> (mg/m ³)
0	0.52	0.49	0.68
5	0.48	0.49	0.62
10	0.46	0.44	0.62
20	0.49	0.43	0.58
30	0.51	0.47	0.61
50	0.51	0.44	0.59
75	0.43	0.39	0.59
100	0.29	0.10	0.35
150	0.05	0.07	0.04

Cont'd ...

Table 8 continued

Westbound

Date	25.3.69		28.3.69		30.3.69	
Station	TP 8		TP 10		TP 12	
Depth	Chl _a	Depth	Chl _a	Depth	Chl _a	
(m)	(mg/m ³)	(m)	(mg/m ³)	(m)	(mg/m ³)	
0	0.61	0	0.55	0	0.48	
5	0.51	4	0.45	5	0.48	
10	0.59	8	0.46	10	0.52	
20	0.58	17	0.55	20	0.55	
30	0.56	25	0.55	30	0.57	
50	0.60	41	0.44	50	0.51	
75	0.29	62	0.55	75	0.52	
100	0.26	82	0.55	100	0.45	
150	0.09			150	0.29	

Cont'd ...

Table 8 continued

Westbound

Date	31.3.69	2.4.69		4.4.69
Station	TP 13	TP 15		TP 17
Depth	Chl _a	Chl _a	Depth	Chl _a
(m)	(mg/m ³)	(mg/m ³)	(m)	(mg/m ³)
0	0.81	1.60	0	1.60
4.5	0.82		5	1.66
9	0.81		10	1.67
18	0.62		20	1.22
26	0.77		30	1.24
44	0.76		50	0.86
65	0.79		75	0.89
87	0.76		100	0.99
131	0.28		150	0.81

Cont'd ...

Table 8 continued

<u>Eastbound</u>					
Date	16.4.69		17.4.69		18.4.69
Station	TP 24		TP 25		TP 26
Depth	Chl _a	Depth	Chl _a	Chl _a	
(m)	(mg/m ³)	(m)	(mg/m ³)	(mg/m ³)	
0	2.84	0	1.13	0.62	
4.5	2.50	5	1.17	0.85	
9	2.48	10	1.27	0.84	
18	2.50	20	1.24	0.75	
27	2.65	30	1.14	0.70	
45	2.62	50	1.17	0.59	
68	0.93	75	0.29	0.47	
90	0.67	100	0.29	0.26	
135	0.47	150	0.26	0.01	

Cont'd ...

Table 8 continued

<u>Eastbound</u>			
Date	19.4.69	20.4.69	22.4.69
Station	TP 27	TP 28	TP 30
Depth	Chl <u>a</u>	Chl <u>a</u>	Chl <u>a</u>
(m)	(mg/m ³)	(mg/m ³)	(mg/m ³)
0	0.43	0.42	0.70
5	0.44	0.45	0.52
10	0.44	0.46	0.54
20	0.44	0.47	0.55
30	0.44	0.47	0.54
50	0.44	0.42	0.54
75	0.44	0.40	0.46
100	0.41	0.40	0.41
150	0.41	-	0.38

Cont'd ...

Table 8 continued

<u>Eastbound</u>			
Date	23(1).4.69	24.4.69	25.4.69
Station	TP 31	TP 33	TP 34
Depth	Chl <u>a</u>	Chl <u>a</u>	Chl <u>a</u>
(m)	(mg/m ³)	(mg/m ³)	(mg/m ³)
0	0.63	0.72	0.65
5	0.59	0.75	0.69
10	0.62	0.69	0.68
20	0.62	0.71	0.71
30	0.61	0.69	0.74
50	0.59	0.68	0.49
75	0.48	0.64	0.46
100	0.29	0.55	0.20
150	0.17	0.20	0.15

Cont'd ...

Table 8 continued

<u>Eastbound</u>			
Date	26.4.69	27.4.69	28.4.69
Station	TP 35	TP 36	TP 37
Depth	Chl <u>a</u>	Chl <u>a</u>	Chl <u>a</u>
(m)	(mg/m ³)	(mg/m ³)	(mg/m ³)
0	0.29	0.45	0.43
5	0.26	0.47	0.41
10	0.20	0.43	0.46
20	0.27	0.48	0.49
30	0.17	0.46	0.49
50	0.21	0.44	0.37
75	0.16	0.42	0.36
100	0.18	0.29	0.16
150	0.19	0.29	-

Cont'd ...

Table 8 continued

<u>Eastbound</u>		
Date	29.4.69	30.4.69
Station	TP 38	TP 39
Depth	Chl <u>a</u>	Chl <u>a</u>
(m)	(mg/m ³)	(mg/m ³)
0	0.56	0.61
5	0.51	0.56
10	0.57	0.60
20	0.51	0.64
30	0.65	0.58
50	0.70	0.55
75	0.29	0.44
100	0.15	0.12
150	0.11	0.10

Table 9. Primary production profiles with depth and daily production per unit area.

Station	Depth (m)	Production		
		mgC/m ³ /hr	mgC/m ² /hr	mgC/m ² /day
TP01	0	1.26	8.9	148
	1	1.61		
	3	0.41		
	10	0.41		
	17	0.11		
TP02	0	0.93	16.6	276
	1	1.47		
	4	1.04		
	14	0.63		
	21	0.21		
TP03	0	0.16	14.6	242
	7	0.51		
	22	0.48		
	40	0.12		
TP04	0	0.56	11.0	183
	2	0.46		
	5	0.36		
	16	0.31		
	25	0.29		
	35	0.23		
TP05	0	0.56	4.6	77
	1	0.50		
	4	0.40		
	14	0.10		
	21	0.02		
	25	0.02		
TP06	0	0.47	5.6	94
	1	0.48		
	4	0.42		
	13	0.22		
	20	0.08		
	22	0.07		
TP07	0	0.88	15.6	260
	1	1.21		
	4	0.93		
	12	0.63		
	20	0.31		
	23	0.25		

Continued

Table 9 - cont'd.

Station	Depth (m)	Production		
		mgC/m ³ /hr	mgC/m ² /hr	mgC/m ² /day
TP08	0	0.66	13.0	216
	1	0.66		
	4	0.80		
	12	0.30		
	21	0.45		
	24	0.24		
TP10	0	0.44	15.6	260
	1	0.80		
	4	0.81		
	14	0.66		
	21	0.38		
	25	0.36		
TP12	0	0.36	14.6	243
	1	0.61		
	4	0.60		
	14	0.58		
	21	0.53		
	25	0.25		
TP13	0	0.29	12.4	206
	4	0.72		
	14	0.35		
	21	0.68		
	25	0.38		
	TP15	0		
TP17	0	0.47	22.5	375
	1	1.92		
	4	1.50		
	14	0.61		
	21	0.47		
	25	0.42		
TP24	0	1.84	37.0	615
	1	3.17		
	4	3.18		
	12	1.45		
	16	1.10		
	22	2.94		
TP25	0	1.46	25.7	430
	1	2.03		
	4	1.55		
	13	0.64		
	20	0.57		
	24	0.21		

Continued

Table 9 - cont'd.

Station	Depth (m)	Production		
		mgC/m ³ /hr	mgC/m ² /hr	mgC/m ² /day
TP26	0	0.88	22.0	365
	2	1.00		
	6	1.47		
	17	0.22		
	25	0.39		
	30	0.10		
TP27	0	0.39	7.8	130
	2	0.53		
	5	0.42		
	13	0.27		
	25	0.15		
	30	0.29		
TP28	0	0.61	13.0	216
	2	0.26		
	4	0.45		
	15	0.72		
	19	0.48		
	27	0.30		
TP30	0	1.14	18.0	300
	2	0.69		
	5	0.68		
	19	0.76		
	27	0.24		
	32	0.70		
TP31	0	1.23		
TP33	0	0.94	8.8	147
	1	1.29		
	4	0.73		
	12	0.20		
	21	0.08		
	25	0.00		
TP34	0	0.85	6.2	104
	1	0.27		
	4	0.49		
	12	0.28		
	20	0.00		
	25	0.00		

Continued . . .

Table 9 - cont'd.

Station	Depth (m)	Production		
		mgC/m ³ /hr	mgC/m ² /hr	mgC/m ² /day
TP35	0	0.98	4.2	70
	1	0.44		
	4	0.43		
	12	0.00		
	20	0.00		
	25	0.00		
TP36	0	0.30	10.5	174
	2	0.57		
	5	0.74		
	17	0.24		
	25	0.07		
	30	0.01		
TP37	0	0.52	6.8	114
	2	0.61		
	5	0.54		
	17	0.16		
	25	0.18		
	30	0.06		
TP38	0	1.26	11.2	186
	1	1.37		
	4	1.23		
	14	0.14		
	21	0.11		
	25	0.11		
TP39	0	1.28	15.8	263
	1	1.12		
	4	1.60		
	14	0.20		
	21	0.29		
	25	0.08		

Table 10. Nutrient profiles with depth.

Station	Depth (m)	Date (local)	Position		Nitrate	Silicate	Phosphate
			Latitude	Longitude			
					μg. at./l		
TP1	0	18-3-69	49°00.5'N	130°4.2'W	7.4	15.1	0.97
	5				7.3	14.9	0.97
	10				7.3	15.2	0.97
	20				7.2	15.1	1.02
	30				7.2	14.9	1.09
	50				7.7	16.8	1.06
	75				7.2	16.2	1.18
	100				9.3	18.5	1.25
TP2	0	19-3-69	49°24.6'	136°58'	10.3	20.7	0.72
	5				10.2	20.7	0.79
	10				10.3	20.9	0.83
	20				10.2	20.9	0.87
	30				10.3	20.9	0.95
	50				10.3	20.9	0.91
	75				10.4	20.9	0.95
	100				10.7	22.2	0.89
TP3	0	20-3-69	49°46'	143°41.6'	17.3	32.9	1.04
	5				10.1	30.3	1.18
	10				11.4	30.2	1.18
	20				11.8	30.2	1.27
	30				12.2	30.2	1.23
	50				12.0	31.4	1.08
	75				12.5	32.2	1.31
	100				12.5	32.0	1.37
TP4	0	21-3-69	50°00'	150°02'	12.4	32.0	1.37
	5				28.8	56.9	1.86
	10				10.9	32.3	1.18
	20				11.1	31.8	1.19
	30				11.3	32.0	1.23
	50				11.3	32.3	1.31
	75				11.6	32.1	1.16
	100				12.2	32.8	1.23
TP5	0	22-3-69	50°00'	156°48'	12.2	31.6	1.16
	5				12.2	31.6	1.16
	10				12.3	33.5	1.14
	20				29.9	75.9	1.86
	30				15.9	34.8	1.53
	49				16.0	34.5	1.58
	73				15.9	34.5	1.54
	97				16.0	34.8	1.53
	146				15.9	34.5	1.54
					15.9	34.5	1.54
					17.0	37.6	1.58
					28.9	66.5	2.07

Continued

Station	Depth (m)	Date (local)	Position		Nitrate	Silicate $\mu\text{g. at./l}$	Phosphate
			Latitude	Longitude			
TP6	0	23-3-69	49°40.5'N	163°50'W	13.1	36.0	1.22
	5				14.5	35.9	1.27
	10				15.6	37.0	1.32
	20				15.6	36.0	1.42
	30				15.5	36.7	1.42
	50				15.5	36.1	1.37
	75				15.7	38.0	1.32
	100				15.8	37.3	1.25
	150				20.9	50.0	1.41
TP7	0	24-3-69	49°54'	170°31'	16.6	39.4	1.38
	5				16.4	38.7	1.39
	10				16.4	37.7	1.40
	20				16.0	39.0	1.34
	30				16.8	42.8	1.17
	50				17.1	44.8	1.19
	75				16.8	42.1	1.22
	100				17.1	42.8	1.21
	150				22.0	50.2	1.70
TP8	0	25-3-69	49°22'N	176°28'W	19.0	46.7	1.19
	5				18.5	46.5	1.64
	10				18.3	45.0	1.71
	20				--	46.3	1.60
	30				19.9	49.4	1.59
	50				20.0	47.7	1.58
	75				20.3	48.2	1.66
	100				20.5	--	1.66
	150				24.0	61.6	1.71
TP10	0	28-3-69	48°22'N	175°53'E	19.6	53.4	1.56
	4				19.9	53.8	1.51
	8				19.9	53.8	1.51
	17				19.7	53.9	1.51
	25				19.4	53.9	1.61
	41				19.5	53.9	1.61
	62				19.4	53.8	1.57
	82				19.5	53.9	1.57
	150				24.0	61.6	1.71
TP12	0	30-3-69	45°45'	164°53'	19.4	48.1	1.53
	5				19.4	47.6	1.49
	10				19.3	47.2	1.49
	20				19.2	47.2	1.54
	30				18.8	48.3	1.62
	50				18.7	46.7	1.64
	75				19.1	46.7	1.60
	100				18.9	49.0	1.61
	150				18.8	46.4	1.50

Continued

Station	Depth (m)	Date (local)	Position		Nitrate	Silicate $\mu\text{g. at./l}$	Phosphate
			Latitude	Longitude			
TP13	0	31-3-69	43°33.5'N	157°56'E	20.2	48.7	1.43
	5				20.2	47.0	1.50
	9				20.3	47.2	1.49
	17				20.3	46.6	1.46
	26				20.0	46.1	1.51
	43				20.0	46.2	1.51
	65				19.8	48.1	1.44
	86				19.8	46.5	1.51
	128				20.5	49.1	1.52
TP17	0				1.6	8.8	0.04
	5				1.6	6.9	0.09
	10				1.9	4.4	0.16
	19				1.6	4.9	0.08
	28				1.4	9.4	0.04
	47				1.4	9.7	0.04
	71				1.2	4.1	0.11
	95				--	3.9	0.11
	142				1.4	4.2	0.27
TP24	0	16-4-69	41°38'	146°45'	9.2	23.8	0.47
	5				8.8	23.7	0.46
	9				8.0	23.8	0.43
	18				9.4	24.5	0.46
	27				8.8	23.7	0.44
	45				11.9	28.7	0.54
	68				13.4	31.4	0.56
	90				15.2	32.4	0.47
	135				12.2	29.3	0.52
TP25	0	17-4-69	41°37.5'	152°24.5'	9.8	31.5	0.52
	5				9.5	31.5	0.46
	10				9.8	31.8	0.53
	20				9.8	31.3	0.48
	30				9.6	31.3	0.46
	50				10.8	32.3	0.53
	75				13.1	37.4	0.55
	100				13.9	40.0	0.64
150	15.1	40.0	0.80				
TP26	0	18-4-69	43°30'	157°25'	17.9	53.0	0.85
	5				18.8	52.9	0.88
	10				18.8	53.1	0.87
	20				18.8	53.1	0.86
	30				18.3	52.7	0.91
	50				18.3	52.7	0.92
	75				18.9	52.9	0.90
	100				18.8	53.4	0.91
150	25.0	70.1	1.20				

Continued

Station	Depth (m)	Date (local)	Position		Nitrate	Silicate $\mu\text{g. at./l}$	Phosphate
			Latitude	Longitude			
TP27	0	19-4-69	45°17'N	162°26'E	14.5	38.8	0.74
	5				11.0	37.6	0.46
	10				14.9	37.8	0.77
	20				15.3	37.3	0.77
	30				15.3	38.5	0.76
	49				15.3	38.5	0.77
	73				15.5	38.5	--
	97				16.3	38.3	--
TP28	146	20-4-69	46°58'	168°01'	15.4	38.0	--
	0				23.2	57.1	1.04
	5				23.7	58.8	1.02
	10				23.7	58.8	1.12
	20				23.2	58.8	1.01
	30				22.6	56.5	1.14
	50				23.1	57.7	1.13
	75				23.2	58.5	1.08
TP30	100	22-4-69	48°21'	175°40'	22.9	58.5	1.08
	150				23.5	59.9	1.03
	0				21.4	53.2	1.10
	5				21.4	53.0	1.10
	10				20.9	55.4	1.09
	20				20.6	52.6	1.10
	30				21.6	55.6	1.15
	50				21.6	53.6	1.10
TP31	75	23-4-69	49°06'N	179°22'E	21.3	53.5	1.07
	100				21.1	52.7	1.07
	150				21.5	52.5	1.04
	0				22.1	56.9	0.90
	5				21.2	56.5	0.96
	10				21.2	55.5	0.92
	20				21.1	53.1	1.00
	30				20.7	54.6	0.98
TP33	49	24-4-69	50°03'N	169°25'W	20.7	51.9	0.94
	73				20.8	55.5	0.98
	97				20.9	52.9	0.97
	146				21.4	56.8	1.01
	0				17.9	38.1	0.95
	5				17.8	38.1	0.92
	10				18.0	38.1	0.91
	20				17.9	38.7	0.91
	30	17.8	38.5	0.91			
	50	17.7	38.5	0.91			
	75	17.8	40.0	0.89			
	100	18.0	37.5	0.96			
	150	20.2	45.3	1.05			

Continued

Station	Depth (m)	Date (local)	Position		Nitrate	Silicate $\mu\text{g. at./l}$	Phosphate
			Latitude	Longitude			
TP34	0	25-4-69	50°00'N	162°46'W	13.4	35.8	0.78
	5				12.2	35.0	0.76
	10				16.7	36.0	0.74
	20				16.2	35.6	0.75
	30				15.5	36.1	0.73
	49				15.5	36.5	0.71
	73				15.4	36.2	0.73
	97				15.1	35.8	0.71
	146			22.1	49.9	0.88	
TP35	0	26-4-69	50°05'	156°06'	16.7	30.6	0.90
	5				16.7	30.9	0.89
	10				16.4	31.0	0.86
	20				16.2	32.0	0.85
	30				15.9	30.7	0.92
	49				16.2	31.4	0.88
	73				16.5	33.2	0.88
	97				16.8	33.7	0.91
	147			16.6	33.8	1.08	
TP36	0	27-4-69	49°57.5'	149°22'	14.4	32.5	0.46
	5				14.3	31.4	0.49
	10				14.5	31.8	0.50
	20				14.4	31.7	0.49
	30				14.4	31.7	0.59
	50				14.4	33.1	0.53
	75				15.1	34.1	0.55
	100				16.7	35.6	0.51
	150			14.5	32.3	0.43	
TP37	0	28-4-69	49°58.5'	144°04'	10.4	24.9	0.66
	5				10.7	24.9	0.68
	10				10.5	24.3	0.71
	20				11.3	24.9	0.70
	30				11.1	25.4	0.77
	50				11.6	25.6	--
	75				12.0	29.3	0.82
	100				14.6	29.9	0.88
	150			11.5	26.0	0.71	
TP38	0	29-4-69	49°28'	136°18'	8.1	15.4	0.68
	5				7.9	15.3	0.60
	10				8.0	15.3	0.63
	20				7.9	15.3	0.67
	30				8.0	15.7	0.62
	50				8.2	15.4	0.63
	75				8.3	16.0	0.64
	100				9.9	18.1	0.63
	150			19.9	36.5	1.23	

Continued

Station	Depth (m)	Date (local)	Position		Nitrate	Silicate µg. at./l	Phosphate
			Latitude	Longitude			
TP39	0	30-4-69	48°59.5'N	128°33.5'W	5.4	10.4	0.51
	5				5.6	10.8	0.51
	10				5.6	11.3	0.50
	20				5.6	11.2	0.54
	30				5.2	11.1	0.48
	50				5.9	11.6	0.55
	75				5.4	16.8	0.77
	100				6.0	23.8	0.93
	150				23.6	33.6	1.09

Table 11. Microbiological profiles with depth.

Westbound

Depth (m)	Station											
	TP01	TP02	TP03	TP04	TP05	TP06	TP07	TP08	TP10	TP12	TP13	TP17
<u>Heterotrophic bacteria (clumps/10ml)</u>												
2	109	3	2	7	5	1	6	4	0	2	9	92
5	129	6	3	3	2	2	3	4	1	3	3	28
10	86	14	4	5	2	5	5	0	0	1	1	87
15	12	8	0	2	24	2	3	4	1	3	4	77
25	51	4	2	2	14	2	2	0	1	0	7	58
<u>Yeasts (clumps/100ml)</u>												
2	3	0	5	8	0	4	7	8	1	0	3	2
5	1	0	0	3	2	1	1	0	0	1	2	3
10	2	6	1	3	0	0	1	3	4	1	4	5
15	5	1	3	1	1	1	0	2	5	1	2	5
25	5	0	2	3	0	0	2	2	0	0	2	4
<u>Glucose uptake ($\mu\text{g C/m}^3$ per day)</u>												
2	88	80	68	81	89	81	84	92	94	109	107	136
5	75	61	89	84	95	27	53	64	119	136	118	47
10	98	103	92	71	83	85	61	90	128	177	112	129
15	79	58	111	77	96	75	41	33	101	119	145	53
25	93	84	44	37	113	71	69	67	133	111	81	139

Continued

Table 11 - cont'd.

Eastbound

Depth (m)	Station												
	TP24	TP25	TP26	TP27	TP28	TP30	TP33	TP34	TP35	TP36	TP37	TP38	TP39
<u>Heterotrophic bacteria (clumps/10ml)</u>													
2	3	0	0	1	1	1	1	0	2	0	2	2	1
5	5	11	1	5	1	4	0	1	1	3	1	8	8
10	9	9	0	8	0	1	1	1	1	1	2	3	5
15	5	0	1	3	3	2	0	4	0	1	2	1	4
25	25	1	2	7	1	1	0	1	1	1	0	2	1
<u>Total bacteria (clumps x 10³/ml)</u>													
2	2.3	1.2	4.7	2.1	1.2	3.6	1.8	2.7	2.1	0.91	6.9	1.7	1.7
5	3.1	2.2	4.3	1.6	1.7	2.2	2.6	2.2	1.4	2.5	4.0	3.1	8.3
10	5.3	2.7	3.0	3.1	4.7	3.1	2.1	3.3	2.3	3.0	5.7	2.1	5.6
15	6.6	4.0	3.6	4.9	1.4	4.0	2.3	2.1	2.7	2.7	2.3	3.3	9.6
25	4.4	3.1	4.0	3.4	3.0	6.0	5.1	3.0	2.2	2.2	2.1	3.8	6.0
<u>Microbial aggregates having diameter more than 5 μ(x 10³ clumps/ml)</u>													
2	0.52	0.78	1.6	0.39	0.26	0.91	0.91	0.52	0.39	0.52	0.91	0.26	0.26
5	0.65	0.26	2.5	1.0	0.39	0.39	0.78	0.65	0.91	0.91	2.1	1.0	0.39
10	0.65	1.2	1.4	0.78	1.6	0.91	0.91	0.39	0.39	0.78	1.0	0.39	0.91
15	1.6	1.8	1.0	1.4	0.39	0.91	0.91	0.78	0.78	0.39	0.65	0.65	0.52
25	1.2	1.0	1.6	1.0	0.65	1.2	0.52	1.0	0.52	0.78	0.78	0.65	2.2
<u>Microbial aggregates/total bacteria (%)</u>													
2	22	67	33	19	22	25	50	19	19	57	13	15	15
5	21	12	58	67	23	18	30	29	64	37	52	33	5
10	12	43	48	25	33	29	44	12	17	26	18	19	16
15	24	45	29	29	27	23	39	38	29	14	28	20	5
25	26	33	39	31	21	20	10	35	24	35	38	17	37

Table 12. Microzooplankton - continuous sampling (organisms/m³).

Date	Local time	Peridinium	Ceratum furca	Ceratum tripos	Tintinnid	Globigerina	Radiolarian	Pseudocalanus sp.				Metridia sp.		Calanus sp.			Oithona sp.				Harpacticoid	Miscellaneous	
								Egg	Nauplii	Copepodite	VI	Nauplii	Copepodite	Egg	Nauplii	C. plumchrus.	Egg	Nauplii	Copepodite	VI			
18.3.69	0030	2,400	2,400	2,400		780				240	120	120			60	420	1,620	60	120				
18.3.69	0140	2,400	2,400	tr.	432	2,112				144	96					144	144	960	48	288	E 48		
18.3.69	0600	6,055	6,055	tr.	1,610	6,300	70				105	70				140	70	1,960	4,585	280	1,470	E 140	
18.3.69	1100	2,030	2,030	tr.	630	4,270							70				70		3,220	310	420		
18.3.69	1600	3,850	3,850	tr.	280	3,640	140			280	280		280		280	560	70	910	2,520	280	770		
18.3.69	1800	tr.	42,840	tr.	420	3,360	420			770	420	385	560			70	35	4,480	7,560	420	980		
19.3.69	0000	tr.	38,500	tr.	420	3,780	280				140	140	140			140	70	70	1,820	5,670	70	490	
19.3.69	0400	16,800	16,800	tr.		15,540	140				140					280	70		6,300	630	560		
19.3.69	0700	8,027	8,027	8,027		9,520	350			1,260	280	245	210	210	70	140	210		630	7,980	455	560	
19.3.69	1008	5,950	5,950	5,950		9,170	70			70									3,220	210	140		
19.3.69	1410	3,290	3,290	3,290		11,130	210				70	70		105			245		3,185	175	175		
19.3.69	1700	1,657	1,657	1,657		3,133	35				18	35	26				9		438		26		
19.3.69	2354	1,563	1,563	1,563	18	2,608	70				18		9	18					651	35	61		
20.3.69	0400	6,825	6,825	tr.	70	8,750	350			70	105		35	315				1,225	3,920	280	770		
20.3.69	1100	5,880	5,880	tr.		9,800	560									70			4,480	140	700		
20.3.69	1500	tr.	5,740	tr.		3,920	70												1,085	18	35		
20.3.69	2115	3,990	3,990	3,990		9,380	280			35	70	35	35			105		1,575	2,415	175	595		
21.3.69	0210	1,734	1,734	tr.		2,788	34				34				17		51	1,071	918	17	306		
21.3.69	0700	322	322	tr.	28	2,310	56			14				14				630	280	28	112		
21.3.69	1700	578	tr.	tr.		4,080	102			34	34			136				884	408	68	221		
21.3.69	2110	1,020	tr.	tr.		8,568	68			17	34	68		51		102	17	799	1,360	181	697		
22.3.69	0150	690	690	tr.		6,026	230			100	69			69				92	81	1,426	1,012	219	782
22.3.69	0545	1,190	tr.	tr.		5,950					70			35		70	140		315	1,085	385	455	
22.3.69	1007	748	748	tr.		10,140	163				65	33		98		33	33	49	228	1,495	114	163	

Continued

Table 12 cont'd.

Date	Local time	Peridinium	Ceratum furca	Ceratum tripos	Tintinnid	Globigerina	Radiolarian	Pseudocalanus sp.				Metridia sp.		Calanus sp.			Oithona sp.				Harpacticoid	Miscellaneous
								Egg	Nauplii	Copepodite	VI	Nauplii	Copepodite	Egg	Nauplii	C. plumchrus	Egg	Nauplii	Copepodite	VI		
22.3.69	1350	1,104	tr.	tr.	46	9,246	138		23	46	92		23	92		621	874	207	460			
22.3.69	1730	420	tr.			5,040	182							21	21	91	336	56	161			
22.3.69	2200	53	53			7,035	63			28				126			602	154	231			
23.3.69	0000	51				3,264	34		9		17			9	55	153	179	47	77			
23.3.69	0500	280	tr.			9,240	70		140		35			35	70	315	910	210	525			
23.3.69	0610	714	714			3,738	53	42		47						378	578	194	326			
23.3.69	0930	561	561	tr.		7,786	272						17	17		102	867	119	289			
23.3.69	1400	153	153			8,500	119				17		51	85	34		561	170	119			
23.3.69	1800	tr.	408			9,656	680							17			782	102	272			
23.3.69	2215	136	136			5,916	527				17			51			816	153	170			
24.3.69	0200	136				6,664	204		17					51		153	697	68	136			
24.3.69	0600	34	34	34		4,811	425							17	9		391	51	94			
24.3.69	1000	34	34			4,820	102										264	34	34			
24.3.69	1400	34				4,114	136	50	17		9		50	34		153	400	9	136			
24.3.69	1800	26				1,054	425		5		5			10			151	41	48			
24.3.69	2200	616	tr.			9,464	448		56	28	28		84	28			1,428	420	308			
25.3.69	0200	204				5,024	408						17		9		476	102	179			
25.3.69	0600	23	23			4,118	188		8								285	45	120			
25.3.69	1030	255				3,876	204		34				9	9			323	34	94			
25.3.69		240				3,240	200		10		30			10			190	10	20			
25.3.69	1800	51				1,663	617		5					5			209	24	48			
25.3.69	2200					14	2										1					
26.3.69	0600	204	tr.		17	1,921	340										825	34	68			
26.3.69	1000	528	tr.	tr.		1,761	1,116		15					12			441	114	42	24		

Continued . . .

Table 12 cont'd.

Date	Local time	Peridinium	Ceratum furca	Ceratum tripos	Tintinnid	Globigerina	Radiolarien	Pseudocalanus sp.				Metridia sp.		Calanus sp.			Oithona sp.				Harpacticoid	Miscellaneous	
								Egg	Nauplii	Copepodite	VI	Nauplii	Copepodite	Egg	Nauplii	C. plumchrus	Egg	Nauplii	Copepodite	VI			
28.3.69	0600	476	476	tr.		4,624	1,088	34	34					68	34	34	728	2,720	442	442	102		
28.3.69	1000	714	714	tr.		5,066	1,088	34						102				2,312	238	340			
28.3.69	1400	521	521	521		5,304	816				68		34	68				1,564	272	204	34		
28.3.69	1800	164	164	164		3,417	561							17					451	102	68		
28.3.69	2200	373	373	373		5,768	1,008		28		28			56	28			1,596	280	280			
29.3.69	0300	816	tr.	tr.		2,618	510		17					17	51				935	119	187		
29.3.69	0700	1,380	tr.	tr.		3,036	437	23											1,127	115	138	23	
29.3.69	1000	884	tr.	tr.		4,182	1,020	34			17			34	34				1,581	238	306	17	
29.3.69	1400	249	249	249		3,876	1,292				34						374	2,210	374	408			
29.3.69	1800	227	227	227		3,553	748								34				867	102	238		
29.3.69	2200	238	238	238		5,423	1,360								34	17			1,326	170	255	17	
30.3.69	0200	521	521	521		5,168	1,394			34					170				2,924	476	612	34	
30.4.69	0600	221	221	tr.		5,389	493							68	17				2,074	306	204		
30.3.69	1000	442	442	tr.		9,316	1,020		102					102		34			3,094	408			
30.3.69	1400	408	408	408		3,264	442				34				136				2,142	136	136	34	
30.3.69	1800	353	353	353		4,416	322	184	46	46	552	46	46	1,242	92		736	5,520	230	552			
30.3.69	2200	548	548	548	105	3,815	70	140	105	350	175				1,190		1,960	5,705	490	1,260			
31.3.69	0100	2,310	tr.	tr.		8,960	630	210	140					350		280	70	1,470	5,530	1,190	1,610		
31.3.69	0500	1,610	tr.	tr.	70	5,040	140	140	280					560		70	1,610	525	3,150	5,600	805	1,820	
31.3.69	0900	2,450		tr.		5,250	560		70	140				210		560	70	4,830	8,750	1,050	3,150		
31.3.69	1400	1,960		tr.	280	10,430	1,750		420					140		770		2,800	5,180	910	2,170		
31.3.69	1700	1,960		tr.	70	8,890	1,190	70	420	420				350		140	490	140	4,060	6,370	1,120	2,590	
31.3.69	2200	1,260				5,040	490		210	315	105			210		175	123	1,505	5,180	438	1,225		
1.4.69	0200	70	70	70	35	2,485	105	35	105		70			105		70	140	210	1,715	245	560		

Continued

Table 12 cont'd.

Date	Local time	Peridinium	Ceratiium furca	Ceratiium tripos		Globigerina	Radiolarian	Pseudocalanus sp.				Metridia sp.		Calanus sp.			Oithona sp.				Harpacticoid	Miscellaneous
				Egg	Nauplii			Copepodite	VI	Nauplii	Copepodites	Eggs	Nauplii	C. plumchrus	Egg	Nauplii	Copepodite	VI				
1.4.69	0700	199	199	199	46	3,220	46	46	23	161	23	69	138	253	92	1,081	2,990	345	667			
1.4.69	1015	91	91	91	102	3,774	170			102			34	272	68	374	2,890	340	578			
1.4.69	1700	123	123			4,970	105	70		70		35	210	175		700	3,570	315	805			
1.4.69	1700	139	139	139	132	3,432	132		132	154		110	88	242	66	352	3,762	330	968			
1.4.69	2300	68		68		2,618	68	34	238	782	136	102	34	68		646	7,140	918	1,122			
2.4.69	0300	68	68			2,414	68	34	68	527	306	136		170	153	646	3,842	510	442			
2.4.69	0700	113	113	113	136	3,502		102	272	731	272	170	238	238	102	1,428	5,372	629	1,326			
2.4.69	1100	170		170	34	3,264	68	170	204	782	170	136	272	748	238	1,564	4,556	816	1,088	68		
2.4.69	1500	28				1,260	14		252	252	238	42	14	14	77	98	420	147	294			
2.4.69	2000	56	56	56		1,440	96	120	1,272	832	240	120	72	48	256	768	1,704	568	1,200	72		
3.4.69	0750			34		1,870	34	68	2,414	799	136	136	102	238	34	1,564	3,162	799	1,598	34		
3.4.69	1200	4				113			49	6	11	4	4	4		53	63	6	29			
3.4.69	1715	64		64		864			944	192	64	128	192	128	64	320	1,168	256	384			
3.4.69	2200	57	57	57		714	68	34	2,142	510	204	204	272	68	68	1,530	2,754	578	578			
4.4.69	0200	315	315			350	140		2,065	280	140		280	140		2,520	3,955	420	630	140		
4.4.69	0430	420	420						2,800	1,260		3,640	2,240		280	2,520	7,280	1,820	1,400			
4.4.69	0600	233	233	233		630	35	70	1,698	350	35	70	105			1,225	2,293	490	490	35	E 35	
4.4.69	1100	210				1,190	280		2,205	665	70	70		350	70	2,030	4,725	950	1,330			
4.4.69	1200	125	125	125		748	68		816	119		68		68		68	1,292	221	204			
10.4.69	1400	169	169	169		1,334	46		2,047	460	138	46		276		92	2,875	460	552			
10.4.69	1730	128	128	128		1,050	105	350	140	543	105	70	175	245	35	1,715	3,710	543	245	35	A 35	
10.4.69	2130	747	747	747		560		1,400	560	1,400	420	140	420		140	1,960	13,720	560	700		T 140	
11.4.69	0300	2,147	2,147	2,147		560		280	6,720	6,160	560		280	280		2,520	16,520	4,800	1,680		C 280	

Continued

Table 12 cont'd.

Date	Local time	Peridium	Ceratum furca	Ceratum tripos	Tintinnid	Globigerina	Radiolarian	Pseudocalanus sp.				Metridia sp.		Calanus sp.			Oithona sp.				Harpacticoid	Miscellaneous
								Egg	Nauplii	Copepodite	VI	Nauplii	Copepodite	Egg	Nauplii	C. plumchrus	Egg	Nauplii	Copepodite	VI		
11.4.69	0530	1,750		1,750		280			140	1,400				140			10,360	1,120	1,260			C 280
11.4.69	1005	3,360		3,360		3,360			672	3,024	672			672			4,704	10,416	1,344			E 1344
11.4.69	1350	63		63		497			35	217	18						126	217	18	140		
11.4.69	1730	140				280		4,620		770	3,080	210					2,100	980	210	1,190		
11.4.69	2200	280				980		280	560	770	560				350		1,540	1,960	350	1,260		
16.4.69	0210	3,640				1,960	70	140	1,050		350	280	280	280	560	490	2,310	560	980	70		
16.4.69	0600	5,110		70		560	70		140	70		280	560	420			4,060	1,890	3,010			
16.4.69	0940	280				1,540		210	420		280	210	70	630	140	7,350	11,410	1,890	2,940	70		
16.4.69	1500	20,720				1,680	560	1,120					1,120	2,240		3,920	7,252		2,800			
16.4.69	1730	154				6,440	140	280	980		280	700	700	1,120	140	5,880	5,460	3,360	4,060			
16.4.69	2130	3,500				1,400	70		210	70		840		840	70	490	6,300	1,540	1,680	140		
17.4.69	0300	230				1,334	184		506	644	138	184	46	1,380	92		5,474	1,196	1,564	46		
17.4.69	1010	373	373	373		5,740	140		140	140		280	420	560	140	14,140	12,180	1,680	5,600			
17.4.69	1415			1,120		4,480	280					280		1,400	140	7,560	33,040	3,640	6,160			
17.4.69	1625		140	140		2,240	280	980	560	2,030	560	420	280	1,400		12,880	13,440	3,010	3,640			
17.4.69	1735	420				2,380			3,640	910	560	420	140	840	140	4,060	4,620	2,310	3,780			
17.4.69	1808	420				2,660			420	980	700			700		4,060	9,380	420	2,100			
17.4.69	1841	840				5,040			280					560	280	840	21,560	3,080	4,200			
17.4.69	1912	280				2,100								140		6,160	6,860	560	2,660			
17.4.69	1943	70	140	70		1,330	140	210	210	210	210	70		280		2,870	5,810	1,120	2,940			
17.4.69	2055			140		3,360	280			350		140	140	1,680		7,700	9,100	1,820	3,640			
17.4.69	2126		140			2,520			140	140	280			560		2,940	4,340	420	2,520			
18.4.69	0130	240	60	180		2,820	60		180	240	60	180			60	4,020	5,940	900	1,680	60		
18.4.69	0410	280	280			2,520			280	140		560	140				10,220	3,360	1,960			

Continued

Table 12 cont'd.

Date	Local time	Peridium	Ceratiium furca	Ceratiium tripos	Tintinnid	Globigerina	Radiolarian	Pseudocalanus sp.				Metridia sp.		Calanus sp.			Oithona sp.				Harpacticoid	Miscellaneous
								Egg	Nauplii	Copepodite	VI	Nauplii	Copepodite	Egg	Nauplii	C. plumchrus	Egg	Nauplii	Copepodite	VI		
18.4.69	0441	280		280		1,260		140	280	560		280		280		2,800	6,440	1,400	1,960	140		
18.4.69	0512	420				1,260				210	840	210		350		1,120	6,090	1,190	910			
18.4.69	0543					2,660		140	420	420		140		280		7,840	7,280	2,100	2,240	140		
18.4.69	0613	280	280			3,360			420	420	140	280		420		3,920	7,420	1,680	3,080			
18.4.69	0645	420	560	280		2,940	140	140		140		420	140	700	140	5,460	8,820	2,100	1,680			
18.4.69	0716	980	980			4,480	560		560	560				560		1,960	9,240	2,240	3,360			
18.4.69	1107	280				2,590	280	140	140			70		70	350	490	5,390	420	1,400			
18.4.69	1530	564				18,236	564		376			188		376		3,948	8,460	376	3,196			
18.4.69	1845	846				6,862	470		188	188		282		282		1,786	7,990	940	3,384			
18.4.69	2215	1,960				6,510	140		140		70	70		350		840	7,000	1,960	1,820			
19.4.69	0200	1,750				3,430	350		210	70	70	280		280		2,660	5,600	700	1,750			
19.4.69	0530	560				2,100	70			70		140		70		70	3,080	140	840			
19.4.69	1015	4,060		tr.		8,820	700					280	140	420	700	11,760	980	1,820				
19.4.69	1400	3,500		tr.		11,340	700	140	140							4,340	560	1,540				
19.4.69	1730	3,640				5,880	210		70	70		210		350		4,620	350	630				
19.4.69	2200	5,180				7,560	840	140		140				140		10,500	840	1,820				
20.4.69	0235	3,080				5,390	350				35	35		35		3,010	245	525	35			
20.4.69	0530	2,397				4,183	141			47					47	1,739	287	752				
20.4.69	1017	2,100				3,990	805			70					35	2,170	245	700				
20.4.69	1400	700				3,710	280					35				1,645	245	525				
20.4.69	1730	630	tr.			2,296	161		35					18		1,250	123	175				
20.4.69	2200	770				3,290	455		105	35		35		35	35	2,555	280	105				
21.4.69	0200	1,260				10,640	770	70		70	140					3,920	140	770				

Continued . . .

Table 12 cont'd.

Date	Local time	Peridium	Ceratum furca	Ceratum tripos	Tintinnid	Globigerina	Radiolarian	Pseudocalanus sp.				Metridia sp.		Calanus sp.			Oithona sp.				Harpacticoid	Miscellaneous
								Egg	Nauplii	Copepodite	VI	Nauplii	Copepodite	Egg	Nauplii	C. plumchrus	Egg	Nauplii	Copepodite	VI		
21.4.69	0530	280	280			5,600	560		70	70		140		140				5,250	560	980		
21.4.69	1015	840			70	3,850	140								70	560		5,600	280	1,260		
21.4.69	1400	1,120				3,955	350					35	35					2,870	630	350		
22.4.69	0530	770				6,230	560			70	35			140	35			3,325	490	910		
22.4.69	1015	350				3,640	630	70							70			3,430	280	350		
22.4.69	1400	630				5,530	840						70	70	70			4,830	350	630		
22.4.69	1730	560				4,585	385							70				2,730	140	455		
22.4.69	2215	700				6,930	630				70							4,480	420	560		
23.4.69	0230	840				5,460	630			70								4,970	490	350		
23.4.69	0520	2,020				5,670	700			70								5,180	280	630		
23.4.69	1000	980				6,440	1,120											5,390	350	490		
23.4.69	1400	840				7,980	525											2,485		280		
23.4.69	1740	1,400				2,520	140			35				305		175		3,955	105	280		
23.4.69	2320	1,120				2,282	147			35				35	35			1,757	112	175		
23.4.69	0240	700				3,045	70			70				70				2,310	70	420		
23.4.69	0530	700				3,500	105			35		35		70				2,800	210	245		
23.4.69	0945	282				2,397	118							165				1,998	47	212		
23.4.69	1250	700				2,954	147							35	35			2,142	112	105		
23.4.69	1730	910				1,750	105	105										2,380	105	210		
23.4.69	2205	595				2,835	35							105	70			2,205	245	385		
24.4.69	0200	770				3,535	35							105				2,044	70	185		
24.4.69	0515	385				2,625	144			18		18						1,138	18	35		
24.4.69	1050	28				1,574	55									21		557	24	24		
24.4.69	1500	21				1,211	35											203				
24.4.69	1740	35				1,295	53											492	18	70		
24.4.69	2145	21				2,072	46		7			7						693	35	53		
25.4.69	0535	21				1,876	42							42	63			1,631	245	133		
25.4.69	0640	84				3,234	84			14								966	84			

Continued

Table 12 cont'd.

Date	Local time	Peridinium	Ceratum furca	Ceratum tripos	Tintinnid	Globigerina	Radiolarian	Pseudocalanus sp.				Metridia sp.		Calanus sp.			Oithona sp.				Harpacticoid	Miscellaneous	
								Egg	Nauplii	Copepodite	VI	Nauplii	Copepodite	Egg	Nauplii	C. plumchrus	Egg	Nauplii	Copepodite	VI			
25.4.69	1700	138				4,301	138			46			46		23			1,472	69	92			
25.4.69	2200	420				4,043	70								18			928	18	70			
26.4.69	0200	88				2,258	53						18					613	18	35			
26.4.69	0540	80				2,896							16		48			928	96	96			
26.4.69	1030	188				3,008	24						24		24			2,139	94	353			
26.4.69	1500	2,800				12,670	350	70	70	140			70	70			1,400	5,810	910	980		E 70	
26.4.69	1640	108				3,132	36						36		36	36	684	2,736	216	432			
26.4.69	2200	210				3,255	70	105					70		35			2,590	350	525			
27.4.69	0200	72				5,184	72	72	72						72			4,752	144	432			
27.4.69	0600	18				1,530	54											1,620	126	108			
27.4.69	1000	324				3,708	108		72				36		72			3,204	468	756			
27.4.69	1400	1,242				5,796	276		92				46		184		414	4,416	598	690			
27.4.69	1730	896				4,872	112		168				168	56	224	56	224	8,288	1,120	1,512			
27.4.69	2140	560				6,580	560		140					140				13,440	1,120	2,100		P 140	
28.4.69	0200	665	665			7,070	490						70	70				9,030	1,120	980			
28.4.69	0720	564	564			5,546	376		94				94		94		1,410	9,024	1,692	3,102			
28.4.69	1000	1,050	1,050			8,540	420							140				9,800	280	840			
28.4.69	1725	1,400				7,980	560		420	140	420		140					4,340	8,120	980	2,800		
28.4.69	2200	2,390	10,000			6,440	210		70						70			3,220	5,660	630	3,010		
29.4.69	0300	4,550	4,550			3,500								140	140			6,090	2,940	350	1,680		
29.4.69	0530	5,460	5,460			8,680		280										11,430	11,060	1,400	4,480		
29.4.69	0925	2,147	2,147	2,147		7,560		1,120	140						420			15,260	5,600	840	5,880		
29.4.69	1620		7,632	7,632		3,168	144	1,872	3,024	2,034	1,296		4,464		864			20,412	6,768	576	2,880		
29.4.69	2200		8,190	8,190		4,060		3,220	840	3,360	3,780		1,120		140	280		13,860	6,580	1,120	3,360		
30.4.69	0200		1,960	1,960		2,520	1,400	2,240	560	1,680	3,360		1,680		1,120			7,560	10,920	840	6,160		E 290 P 560
30.4.69	0530	1,400	1,400	2,100		1,120	140	420	980	2,800	1,960		1,540		420			13,860	9,380	840	4,200		
30.4.69	1000		18,480	18,480		7,560	280	560	1,680	1,120	280		2,800		2,520			7,560	21,480	1,400	5,320		
30.4.69	1700	9,707	9,707	9,707	840	5,600	560	1,680	1,680		560		2,520		280	840		22,680	22,960	840	4,200		

A = annelid
C = cladocera.

E = euphausiid eggs
I = oikopleura

P = pteropod

Table 13. Microzooplankton - 20 m oblique tow during midday (Number/m³)

Date	Peridinium	Ceratiium furca	Cerattium tripos	Tintinnid	Globigerina	Radiolarian	Pseudocalanus sp				Metridia sp		Calanus sp			Oithona sp				Harpacticoid	Miscellaneous	
							Egg	Nauplii	Copepodite	VI	Nauplii	Copepodite	Egg	Nauplii	C. plumchrus	Egg	Nauplii	Copepodite	VI			
18.3.69					1,740	90						15	75	195				75	285	645		T 15
19.3.69	5,380	5,380	5,380		9,540	180		420	180				60	1,680	60			4,020	780	1,800		
20.3.69	390	390			2,990	20		40	10				250	40			90	790	220	310		
21.3.69	260	260	260		8,820	150				60				330				1,080	120	930		
22.3.69	38	38			1,770	45				30				60				250	60	330		
23.3.69	330	330	330		7,980	120				30				30			540	1,470	450	1,260		
24.3.69	15				2,700	120				15	15			45	15			105	75	75		
25.3.69					4,125	195								30	30			165	105	90		
28.3.69			10		1,370	170												620	130	70		
30.3.69	1,170				3,510	540								150	30			2,250	570	1,050	90	
31.3.69	540				7,800	660				180	510			270	90	1,800	7,440	2,760	3,900	90		
14.4.69	128		128		135	45		488	330	90	45			15				893	390	360		
16.4.69	30				360			105	75	420	255			300	90	1,050	1,590	345	1,710			
17.4.69	60		60		600				105	30				60	30	1,470	3,450	645	1,230			T 60
18.4.69	150				1,350	120		30		30				90	30			1,320	270	600		
19.4.69	195		195		990	120								60				1,920	270	360		
20.4.69	15				810	45					15							435	135	120		
22.4.69					600	60												210	38	8		
23.4.69					1,290	165					15							1,230	180	150		
24.4.69					489	33		2						1				124	19	14		
25.4.69					264	24								9				270	24	18		
26.4.69					870	30								15				630	180	105		
27.4.69	81				429	30												399	99	39		
28.4.69	30		30		3,510	240								90				5,490	840	1,500		
29.4.69	3,760	3,760	3,760		1,740	120			210	480	120			840		2,040	4,560	330	1,140			
30.4.69	1,820	1,820	1,820		1,020	60		540	120	360	960			600		2,700	2,580	180	1,320			

Table 14. Microzooplankton - surface tow during darkness (Number/m³).

Date	Peridinium	Ceratum furca	Ceratum tripos	Tintinnid	Globigerina	Radiolarian	Pseudocalanus sp				Metridia sp		Calanus sp			Oithona sp				Harpacticoid	Miscellaneous	
							Egg	Nauplii	Copepodite	VI	Nauplii	Copepodite	Egg	Nauplii	C. plumchrus	Egg	Nauplii	Copepodite	VI			
18.3.69					286			33	231	715				66	33			66	858			
19.3.69	450	450	450		3,100			250	150	100	250			575			550	50	100			
20.3.69	1,133	1,133	1,133		5,700			150	100					100		450	2,400	100	750			
21.3.69	217	217	217		18,650	300		75			150		100	175	150		950	350	850			
23.3.69	120	120			10,560	240											1,680	800	720			
24.3.69	50				3,625	150								15			180	40	115			
25.3.69					3,695	215									15		30		15			
28.3.69	150	150			5,650	550								150			2,000	150	700			
30.3.69	663		663		4,200	175		100	25	50	300			275	75		1,325	450	800			
1.4.69	800				3,400	200		175			125		50	100	50		2,700	450	900			
3.4.69	100		100		1,350	50		326	163	275	250			225		450	1,088	238	350	25		
16.4.69	233	233	233		2,300			400	1,150	300	700			200	500	200	2,700	14,400	1,750	4,100		
17.4.69	350				2,350	100		50	525	100				50	250	100	900	3,950	725	1,550	50	T 50
18.4.69	250				1,900	25					25			50	25		400	150	275			
19.4.69	140				895	80				15							580	40	125			
20.4.69	30				1,390	80		4	13	1	3			1	2	4	172	46	55			
22.4.69	33				1,474	44				2					2		257	26	29			
23.4.69	5				485	30		8			8			65	8		265	70	60			
24.4.69					830	29				5					6		80	35	6			
25.4.69					280	5											30		5			
26.4.69	13		13		102	4					2				2		15	145	17	29		
27.4.69	250				2,200	75												1,350	125	225		
28.4.69	838	838			3,225	50				100	75			25	100		1,200	250	300			
29.4.69		738	738		500	25	225	100	263	975	50				25		900	450	88	325		

Table 15. Microzooplankton - 300 m oblique tow during darkness (Number/m³).

Date	Local time	Peridinium	Ceratiium furca	Ceratiium tripos	Tintinnid	Globigerina	Radiolarian	Pseudocalanus sp				Metridia sp		Calanus sp			Oithona sp				Harpacticoid	Miscellaneous	
								Egg	Nauplii	Copepodite	VI	Nauplii	Copepodite	Egg	Nauplii	C. plumchrus	Egg	Nauplii	Copepodite	VI			
16.4.69	1957	22		22		462				44	176		44	22	44	44	22	462	1,188	308	462	44	
17.4.69	2012	66		66		704			22	66	33	88			22	66	44		946				
18.4.69	2010	616				1,650	66					22			22	22		176	1,012	528	396	22	T 22
19.4.69	2015	440				1,122	132		22	22			22		22	22		330	1,012	660	198	22	
20.4.69	2024	33		33		801	68		22	22					22				343	209	88		
22.4.69	2007	198				1,210	132			22					22				660	264	88		
23 ² .4.69	2006	17				99	4		9	4		1	2	1		2	1		132	48	19		
25.4.69	2042	22				1,188	44								22			286	660	616	88		
26.4.69	2049	308	22			1,870	22		22	22		22			22	22		198	1,166	770	220	198	
27.4.69	2023	396	396			3,652	44								44				2,948	1,320	132	264	
28.4.69	2027	396	396			3,718	88			22					22				1,694	770	550	88	
29.4.69	2052	2,816	2,816	2,816		5,632			264	704	176	176	440	88	616	88		1,584	4,224	2,376	2,024	88	

Table 17. Zooplankton - 20 m oblique tow during midday (mg wet wt/m³).

Station	1	2	3	4	5	6	7	8	10	12	13	17	24	25	26	27	28	30	31	33	34	35	36	37	38	39	
Wet weight (mg/m ³)	4	4	4	4	14	4	4	4	4	4	22	14	356	308	48	11	4	8	82	67	129	26	8	252	390	289	
<u>Species</u>																											
Aglantha			+																								
Calanus pacificus	+												+	+													
C. plumchrus	+	+	+	+	+	+	+	+	+	+	+		+	+	+	+	+	+	+	+	+	+					+
C. cristatus					+								+	+					+	+	+	+	+	+	+	+	+
Eucalanus bungii			+																								
Scolecithricella				+																							
Acartia	+				+																						
Parathemisto pacifica			+	+	+	+	+	+	+	+	+		+	+	+	+	+	+						+	+		+
Euprimno																						+	+				
Euphausiid furcilia													+	+													
Euphausiid, adult					+											+			+		+						+
Sagitta elegans		+	+	+	+		+	+	+		+		+		+	+		+	+	+	+			+	+	+	+
Limacina helicina	+		+	+	+	+	+		+		+		+	+	+	+	+	+	+	+	+	+	+	+	+		
Clione limacina																			+								
Tropical species												+															

Table 18. Zooplankton - Surface tow with standard Miller net during darkness (mg wet wt/m³).

Station	1	2	3	4	6	7	8	10	12	14	16	24	26	27	28	30	32	33	34	35	36	37	38	
Wet weight (mg/m ³)	22	6	8	144	142	100	25	100	6	67	13	133	75	8	50	17	8	8	1400	8	42	7	7	
<u>Species</u>																								
Foraminifera																+		+						
Aglantha			+					+		+		+	+			+					+			
Siphonophore																								+
Pleurobrachia	+																							
Beroe									+	+									+					
Tomopteris				+						+		+												
Typhloscolex mulleri													+											
Calanus pacificus										+								+			+			
C. plumchrus	+		+		+	+	+		+	+		+	+	+	+	+	+	+	+	+	+	+	+	+
C. cristatus	+				+	+	+	+		+		+	+	+	+	+	+				+	+		
Eucalanus bungii																+								
Pseudocalanus minutus	+																	+						+
Metridia pacifica			+	+		+	+			+			+	+				+	+		+			+
Parathemisto pacifica		+		+	+	+	+	+	+	+		+		+	+			+	+		+	+	+	+
Euphausia pacifica			+	+	+	+		+		+		+	+	+	+	+	+					+		
Thysanoessa spinifera																					+			
T. longipes									+	+											+	+	+	+
Limacina helicina	+	+	+						+	+		+												+
Clione limacina				+		+	+	+							+			+						
Euclio sp										+		+												
Sagitta elegans	+	+	+	+	+	+		+		+		+	+		+	+	+				+	+	+	+
Oikopleura		+		+												+								
Doliolid											+													
Tropical species											+													

Table 19. Zooplankton - 300 m oblique tow with Miller net during darkness
(mg wet wt/m³)

Station	24	25	26	27	28	30	32	33	34	35	36	37	38
Wet weight (mg/m ³)	53	108	105	60	180	392	153	?	176	161	91	116	84
<u>Species</u>													
Radiolaria					+	+					+		
Aglantha				+		+				+		+	+
Siphonophore			+		+				+			+	
Tomopteris	+		+		+	+	+		+	+	+		+
Ostracod		+	+	+	+	+	+		+	+	+	+	+
Calanus pacificus													+
C. plumchrus	+	+	+	+		+	+	+		+	+		+
C. cristatus	+	+	+	+	+	+	+	+	+	+	+	+	+
Eucalanus bungii	+	+	+	+	+	+	+			+	+	+	+
Gaidius	+	+	+	+	+	+	+		+	+		+	
Euchaeta	+	+	+	+	+	+	+		+		+	+	
Metridia pacifica	+	+		+	+	+	+	+	+	+	+	+	+
Pleuromamma abdominalis	+	+	+	+	+	+	+	+	+	+	+	+	+
Heterorhabdus											+	+	
Candacia columbia	+	+	+		+	+	+			+			
Isopod								+	+				
Cyphocaris	+	+		+					+			+	+
Phronima												+	
Parathemisto pacifica	+	+	+	+	+		+			+	+	+	
Euprimno										+			
Scina	+		+	+									+
Euphausia pacifica	+	+	+	+	+	+	+	+	+	+	+	+	+
Thysanoessa spinifera													+
T. longipes	+	+	+		+		+	+	+	+	+	+	+
Tessarabrachion oculatus					+						+	+	+
Limacina helicina	+		+		+	+	+	+	+	+	+	+	
Clione limacina						+							
Atlanta		+											
Eukrohnia hamata	+	+	+	+	+	+	+	+	+	+	+	+	+
Sagitta elegans	+	+	+	+	+	+	+	+	+	+	+	+	+
S. scrippsae	+	+					+					+	+
Oikopleura		+	+	+	+	+	+		+	+			+
Salp					+								
Fish (larvae or juveniles)	+				+								
Juvenile squid	+	+							+		+	+	

Table 21. Zooplankton - 300 m oblique I-K trawl during darkness (mg wet wt/m³).

Station	1	2	4	6	7	8	10	12	14	16	24	25	26	27	28	30	32	33	34	35	36	37	38	
Total volume water sampled (m ³ x 10 ⁻³)	12.5	17.7	13.3	7.3	9.3	9.0	12.5	10.2	8.9	10.0	18.4	10.6	6.6	6.5	6.5	7.7	8.1	7.3	8.1	8.0	7.9	9.2	7.3	
Zooplankton (wet wt mg/m ³)	29	13	11	33	48	27	15	35	52	8	42	34	74	79	50	41	74	107	16	36	36	22	16	
Species																								
Aglantha			+				+						+	+	+		+	+	+		+	+		
Medusae			+	+		+	+					+	+	+	+	+	+	+	+	+	+	+	+	+
Periphylla periphylla	+	+	+	+	+	+	+				+	+	+	+		+	+					+	+	+
Siphonophore			+							+	+	+	+		+	+	+					+	+	+
Beroe cucumis		+	+		+	+		+			+	+	+		+	+	+	+	+	+	+			+
Ctenophore sp	+	+						+		+		+	+				+							+
Tomopteris												+					+		+				+	
Galanus plumchrus											+						+							
C. cristatus	1	+	1	+	2	1	+	1	+	+	5	2	2	4	4	14	2	17	+	3	+	+	+	2
Eucalanus attenuatus											+													
E. bungii			+	+				+	+	+	+	+	+	+	+	+	+				+	+	+	1
Gaidius																	+		+	+				
Aetideidae										+														
Euchaeta					+				+	+	+	+	+	1	+	+	+		+			+	+	
Centrograptilus porcellus											+													
Metridia pacifica																	+		+					
Pleuromamma abdominalis																	+				+			
Candacia											+				+		+							
Gnathophausia	+	+		+	+	+	+							+	+	+								
Cyphocaris challengerii	+	+	+	+	+	+	+	+	+		+	+	+		+	+	+	+	+	+	+	+	+	+
Phronima sp										+														
P. sedentaria	+		+			+	+	+	+		+	+	+		+							+	+	+
Paraphronima		+	+	+											+	+	+						+	
Hyperia			+		+	+	+	+	+	+			+	+	+	+	+	+	+	+	+	+	+	+
Parathemisto pacifica		+					+		+						+	+					+	+	+	
Euprimno	+	+	+	+	+	+	+		+		+	+	+	+	+	+	+	+	+	+	+	+	+	+
Scina						+					+	+	+	+	+								+	+
Gammaridae	+							+																
Boreomyia kincaidii							+																	
Meterythrope robusta													+											
Thysanopoda subaequalis										+														
Euphausia pacifica	12	10	8	22	31	16	11	28	42		18	29	57	60	40	10	67	71	11	28	30	19	7	
E. similis										+														
E. gibboides										+														
E. recurva										+														
E. hemigibba										+														
Thysanoessa spinifera	12	1	1			+					+					+						3	1	+
T. longipes		1	+	9	11	+	2	1	1			+	+	+	+	+	+	+	+	+	+	2	+	
T. inapinata								2	1		+	+	+	+				+				+		
T. gregaria									+		4	+												
Tessarabrachion oculatus	+	+	+	+			+	+	1	+	2	+	+	+	+	+	+	+	+	+	+	1	+	
Nematoscelis gracilis										+														
N. difficilis			+							+			+											
Nematobrachion flexipes	+									+														
N. boopsis													+											
Stylocherion maximum						+		+	1		+	+	+	+	+	+	+				+	+	+	
Brachyuran larvae	+		+	+		+					+				+									
Eukrohnia hamata								+	+				+				+					+	+	
Sagitta sp										+														
S. elegans			+	+	1		+				2	+	2		1	4	+	3	+	+	+	+	+	
S. scrippsae	2	+		+	2	9	1	+	5	+	9	2	7	8	3	9	4	9	+	3	+	+	+	4
S. hexaptera										+														
Limacina helicina											+		+		+	+		+	+	+			+	
Clione limacina						+									+						+			
Euclio pyramidatum		+		+	+	+		+	+	+	+	+	+			+								
Euclio sp											+													
Carinaria japonica											+													
Pterotrachea scutata											+													
P. hippocanthus											+													
Squid larvae	+				+				+							+		+	+	+	+	+		
Oikopleura																	+							
Doliolid				+							+	+	+									+	+	
Salp		+	+					+	+	+	+	+	+						+	+	+			
Thalia											+													
Pyrosoma											+													
Fish larvae					+							+		+					+		+			

Table 22. Fish collected in surface I-K trawl during darkness (Number/1000 m³)

Station	1	2	3	4	6	7-10	8	10	12	14	25	27	28	30	32	33	34	35	36	37	38
<u>Species</u>																					
<u>Tarletonbeania crenularis</u>	17.3	4.17	0.17	0.17	5.5	6.5	4.5							6.0	0.5	0.25			0.4	0.2	2.5
<u>Myctophum californiense</u>										0.2	0.5										
<u>Hexagrammos stelleri</u>	5.0	0.67		0.17	0.75	0.17	0.25			1.0	0.17				0.5			0.25			1.5
<u>Pleurogrammus monopterygius</u>		0.33	0.83	2.17	0.75	3.67	1.0	0.17	0.33				3.0	12.0	3.0	2.75	4.25	9.75	1.2		
LIPARIDAE																			0.2		
<u>Hemilepidotus jordani</u>	1.0	0.17			5.5	6.83	1.25	0.67	0.83	0.4		0.75	13.83	10.5	5.5		3.5	0.75	0.4		
<u>Bathymaster signatus</u>					1.75	6.5	4.0	0.17					4.5	3.0	0.25		1.75		0.2		
<u>Ammodytes hexapterus</u>						0.17															

Table 23. Fish collected - 300 m oblique 1-K trawl during darkness. (Number/tow, fork length in mm).

Station	Tow no.	Species	Volume water sampled (m ³ x 10 ⁻³)	Number caught	Mean length (mm)	Range of sizes (mm)
1	1K-1	<i>Bathylagus pacificus</i>	12.5	1	34	-
		<i>Electrona arctica</i>		3	24.3	23-25
		<i>Chauliodus macouni</i>		2	45.5	43-48
		<i>Tactostoma macropus</i>		10	147.9	70-178
		<i>Tarletonbeania crenularis</i>		12	26.6	24-28
		<i>Diaphus theta</i>		8	52.5	42-58
		<i>Stenobranchius leucopsarus</i>		36	33.8	22-104
2	1K-3	<i>Bathylagus borealis</i>	17.7	1	151	-
		<i>Bathophilus flemingi</i>		1	142	-
		<i>Tactostoma macropus</i>		1	290	-
		<i>Electrona arctica</i>		2	21	20-22
		<i>Diaphus theta</i>		2	50.5	50-51
		<i>Stenobranchius leucopsarus</i>		14	57.4	21-118
		<i>Microstomus pacificus</i>		1	31	-
4	1K-6	<i>B. milleri</i> or <i>alascanus</i>	13.3	1	178	-
		<i>Chauliodus macouni</i>		4	72.8	49-87
		<i>Electrona arctica</i>		4	41.8	35-48
		<i>Diaphus theta</i>		1	92	-
		<i>Stenobranchius leucopsarus</i>		6	51.5	37-80
6	1K-8	<i>Chauliodus macouni</i>	7.3	2	72	67-77
		<i>Electrona arctica</i>		9	38.1	27-50
		<i>Diaphus theta</i>		1	75	-
		<i>Tarletonbeania crenularis</i>		1	60	-
		<i>Stenobranchius leucopsarus</i>		21	44.7	22-123
		<i>Hemilepidotus jordani</i>		1	18	-
7	1K-11	<i>Chauliodus macouni</i>	9.2	1	70	-
		<i>Tactostoma macropus</i>		2	149.5	145-154
		<i>Electrona arctica</i>		12	30.6	20-47
		<i>Diaphus theta</i>		1	69	-
		<i>Stenobranchius leucopsa</i>		4	44	41-49

Continued

Table 23 - cont'd.

Station	Tow no.	Species	Volume water sampled ($m^3 \times 10^{-3}$)	Number caught	Mean length (mm)	Range of sizes (mm)
8	1K-13	<i>Gonostoma gracile</i>	9.0	3	89.7	83-94
		<i>Electrona arctica</i>		17	31.4	20-41
		<i>Tarletonbeania crenularis</i>		20	47.0	36-60
		<i>Diaphus theta</i>		3	71.7	58-82
		<i>Stenobrachius leucopsarus</i>		4	38	24-60
		<i>Scopelarchus linguidens</i>		1	8.5	-
		<i>Nemichthys avocetta</i>		1	335	-
		<i>Pachystomias microdon</i>		1	126	-
		<i>Bathymaster signatus</i>		1	37	-
10	1K-15	<i>Tarletonbeania crenularis</i>	12.5	3	32.7	26-44
		<i>Diaphus theta</i>		2	56.5	55-58
		<i>Stenobrachius leucopsarus</i>		10	34.8	21-92
		<i>Hemilepidotus jordani</i>		1	18	-
		Liparidae (<i>Nectoliparis</i> - new sp)		1	20	-
		<i>Bathymaster signatus</i>		1	36	-
12	1K-17	<i>Tactostoma macropus</i>	10.2	3	99	79-135
		<i>Electrona arctica</i>		23	32.1	22-55
		<i>Diaphus theta</i>		6	76.5	40-90
		<i>Stenobrachius leucopsarus</i>		29	49.8	24-118
		<i>Scopelarchus linguidens</i>		2	81.5	76-87
14	1K-19	<i>Bathylagus pacificus</i>	8.9	2	55	44-66
		<i>Gonostoma gracile</i>		8	55.8	39-71
		<i>Electrona arctica</i>		7	51.3	45-56
		<i>Tarletonbeania crenularis</i>		2	30.5	29-32
		<i>Myctophum californiense</i>		2	76	74-78
		<i>Diaphus theta</i>		20	62	38-93
		<i>Stenobrachius leucopsarus</i>		8	68.8	40-98
		<i>Notoscopelus elongatus</i>		1	126	-
		<i>Notoscopelus resplendens</i>		1	60	-

Continued

Table 23 - cont'd.

Station	Tow no.	Species	Volume water sampled ($m^3 \times 10^{-3}$)	Number caught	Mean length (mm)	Range of sizes (mm)
16	1K-21	Bathylagus sp (transparent)	10.0	1	25	-
		Argyropelecus sp (larval)		2	20.5	19-22
		Gonostoma gracile		4	37.3	30-52
		Tactostoma sp (larval)		3	23.7	19-30
		Diaphus sp		5	32.4	20-61
		Lampanyctus pyrosobolus		2	22.5	20-25
		L. punctatissimus		12	32.3	25-79
		SUDIDAE		1	36	-
		LOPHOTIDAE (larval)		1	30	-
		Leptocephalus (larval)		1	63	-
		Scopelarchus linguidens		3	29.3	26-33
		Mopus japonicus (larval)		2	22	-
		CARANGIDAE		4	18.5	18-19
		PLEURONECTIDAE (larval)		1	23	-
24	1K-23	Bathylagus sp	18.4	4	29.3	19-52
		Gonostoma gracile		9	64.3	42-78
		Electrona arctica		3	35	25-50
		Diaphus protoculus		7	78.7	29-91
		Stenobranchius leucopsarus		3	64.7	30-88
		Lampanyctus steinbecki		2	63.5	30-97
		Psychrolutes sp (new sp?)		1	42	-
25	1K-25	Aristostomias scintillans	10.6	1	80	-
		Gonostoma gracile		30	67.5	36-83
		Bathylagus sp		3	39.3	33-46
		Tarletonbeania crenularis		1	36	-
		Diaphus protoculus		20	61.7	23-93
		Stenobranchius leucopsarus		2	79	62-96
		Lampanyctus steinbecki		4	61	57-68
		Myctophum californiense		1	86	(-)

Continued . . .

Table 23 - cont'd.

Station	Tow no.	Species	Volume water sampled ($m^3 \times 10^{-3}$)	Number caught	Mean length (mm)	Range of sizes (mm)
26	1K-27	Gonostoma gracile	6.6	4	78.8	73-83
		Electrona arctica		18	25.8	24-46
		Diaphus protoculus		1	86	-
		Stenobranchius leucopsarus		1	61	-
27	1K-29	Gonostoma gracile	6.5	3	83	78-86
		Electrona arctica		14	31.5	22-43
		Diaphus protoculus		3	73.7	57-86
		Stenobranchius leucopsarus		5	26.8	23-31
		Hemilepidotus jordani		1	21	-
28	1K-31	Electrona arctica	6.5	3	30.3	22-46
		Stenobranchius leucopsarus		9	46.6	26-70
		Bathymaster signatus		1	31	-
30	1K-33	Electrona arctica	7.7	16	27.4	22-34
		Diaphus theta		1	78	-
		Diaphus protoculus		1	74	-
		Stenobranchius leucopsarus		13	44.9	26-96
		Melamphaes cavernosus		1	60	-
32	1K-35	Bathylagus milleri (?borealis)	8.1	1	38	-
		Myctophid (larval)		1	20	-
		Electrona arctica		5	23.2	20-30
		Diaphus protoculus		1	79	-
		Stenobranchius leucopsarus		3	31.3	25-42
		Hemilepidotus jordani		4	18.5	16-21
33	1K-37	Diaphus theta	7.3	1	77	-
		Stenobranchius leucopsarus		14	35.9	22-66
		Nectoliparis (?) pelagicus (?new sp)		1	28	-

Continued . . .

Table 23 - cont'd.

Station	Tow no.	Species	Volume water sampled ($m^3 \times 10^{-3}$)	Number caught	Mean length (mm)	Range of sizes (mm)
34	1K-39	Diaphus protocus	8.1	1	81	-
		Stenobrachius leucopsarus		30	41.4	22-49
35	1K-41	Bathylagus milleri (?borealis)	8.0	1	36	-
		Electrona arctica		1	37	-
		Stenobrachius leucopsarus		4	36.5	23-47
36	1K-43	Electrona arctica	7.9	1	30	-
		Stenobrachius leucopsarus		12	35.7	21-71
37	1K-45	Chauliodus macouni	9.2	2	67.5	67-68
		Electrona arctica		4	30	24-36
		Diaphus theta		1	51	-
		Stenobrachius leucopsarus		4	35.8	23-50
38	1K-47	Tactostoma macropus	7.3	1	169	-
		Electrona arctica		4	25	24-26
		Diaphus theta		1	58	-
		Tarletonbeania crenularis		3	38	29-52
		Stenobrachius leucopsarus		3	53.3	25-98

Table 24. List of Cephalopods (Identifications by Dr. W. G. Fields, University of Victoria).

Date	Station	Specimen	mm	
			TL	MW
March 19	TP-02	Gonatopsis borealis	45	7.5
	"	" "	41	7.5
	"	" "	39	7
	"	" "	33	6.5
	"	" "	27	6
	"	Gonatus (n. sp.) No. 1	40	8
	"	Japetella sp.	21	10
	"	" "	10.5	6
	"	" "	15	7.5
March 21	TP-04	Gonatopsis borealis	34	7
	"	Gonatus (n. sp.) No. 2	55	10
	"	Crystalloteuthis behringiana	14	6
March 23	TP-06	Gonatopsis sp. (Fragment)	15	-
	"	Crystalloteuthis behringiana	23	7
	"	Taonius pavo	24	7
	"	Octopus sp. (Post-larva)	23	8
	"	Japetella sp.	9	5.5
	"	"	7	3
March 24	TP-07	Gonatus (n. sp.) No. 1	73	10
	"	Gonatus (n. sp.) No. 2	86	22
	"	Crystalloteuthis behringiana	20	8
	"	Taonius pavo	36	7
	"	" "	43	7
	"	Japetella sp.	37	18
	"	"	14	7
March 25	TP-08	Gonatopsis borealis	26	6
	"	" "	18	4
	"	" "	25	5
	"	Gonatus (n. sp.) No. 1	52	8
	"	Crystalloteuthis behringiana	18	8
	"	" "	19	8.5
	"	" "	11	-
	"	Taonius pavo	126	16
	"	5 Larvae (squid)	6	3
	"	Japetella sp.	14.5	7
	2 Cephalopod hooks	5	3	
March 28	TP-10	Gonatopsis borealis	36	5.5
	"	" "	24	5.5
	"	Family Gonatidae (post-larva)	28.5	8

Table 24 continued

Date	Station	Specimen	mm	
			TL	MW
March 28	TP-10	Crystalloteuthis behringiana	20	7
	"	Taonius pavo	36	7
	"	" "	33	8
	"	Octopus sp. (Larva)	15	5
March 30	TP-12	Gonatopsis borealis	40	7
	"	Gonatus (n. sp.) No. 1	81	8
	"	Berryteuthis (n. sp.)	123	16
	"	Family Gonatidae	42	6
	"	Sub-family Taoniinae (Cranchiid)	47	9
April 3	TP-16	Onychoteuthis banksii	19	4
	"	" "	15	3.5
April 16	TP-24	Family Gonatidae (Larva)	20.5	7
		" " "	15	6
April 17	TP-25	Family Gonatidae (Larva)	11	4
April 18	TP-26	Gonatopsis borealis	40	8
	"	Sub-family Taoniinae (Larva)	6.5	3.5
April 19	TP-27	Family Gonatidae (Larva)	14	4
	"	" " "	12	3.5
	"	" " "	17	6
	"	" " (Fragment)	18	5
	"	Japetella sp.	14	10
April 20	TP-28	Gonatopsis borealis	31	5.5
	"	Family Gonatidae (Larva)	35	6
	"	" " "	32	8
	"	Chiroteuthis veranyi	330	24
	"	Japetella sp.	68	28
April 22	TP-30	Gonatopsis borealis	16	4
	"	Chiroteuthis sp. (Fragment)	440	-
	"	Crystalloteuthis behringiana	27	8
	"	" "	24	8
	"	" "	20	7
	"	" "	23	7
	"	Sub-family Taoniinae	29	9
	"	" "	51	12
	"	" " (Larva)	10.5	5
	"	Octopus sp. (Larva)	28	9
	"	Japetella sp.	14	7

Table 24 continued

Date	Station	Specimen	mm	
			TL	MW
April 23b	TP-32	Gonatopsis borealis	18	4
	"	Family Gonatidae (Larva)	18	5
	"	Crystalloteuthis behringiana	16	6.5
	"	Sub-family Taoniinae	29	9
	"	" "	26	7
	"	Taonius pavo	44	7
	"	Larva (Squid)	5	2.5
April 24	TP-33	Japetella sp.	11	6
	"	"	7	4.5
	"	"		
April 24	TP-33	Family Gonatidae (Larva)	25	6
	"	Taonius pavo	25	4
	"	Sub-family Taoniinae (Larva)	9	3.5
April 25	TP-34	Gonatopsis borealis	33	5.5
	"	Octopus sp. (Larva)	10	4
	"	" "	22	8
April 26	TP-35	Gonatus (n. sp.) No. 2	24	4
	"	Octopus sp. (Larva)	8	4
April 27	TP-36	Family Gonatidae (Larva)	19	5
	"	Crystalloteuthis behringiana	19	8
	"	" "	14	6
	"	Japetella sp.	13	7
April 28	TP-37	Gonatopsis borealis	57	9
	"	" "	40	6
	"	Taonius pavo	39	8
	"	" "	41	8
	"	Octopus sp. (Larva)	19	5.5

Table 25. List of stations with pelagic shrimp species, (Identifications and counts by R.A. Wasmer, Oregon State University).

Station	Species	Number present
1	<u>Bentheogennema n. sp.</u>	1
	<u>Sergestes similis</u>	71
	<u>Hymenodora frontalis</u>	1
2	<u>Sergestes similis</u>	34
	<u>Notostomous japonicus</u>	1
4	<u>Sergestes similis</u>	7
	<u>Hymenodora frontalis</u>	2
6	<u>Sergestes similis</u>	85
	<u>Notostomous japonicus</u>	4
7	<u>Sergestes similis</u>	73
8	<u>Bentheogennema borealis</u>	1
	<u>Sergestes similis</u>	44
10	<u>Bentheogennema borealis</u>	5
	<u>Sergestes similis</u>	11
12	<u>Sergestes similis</u>	12
	<u>Acanthephyra quadrispinosa</u>	1
14	<u>Gennadas incertus</u>	1
	<u>Gennadas propinquus</u>	1
	<u>Sergestes similis</u>	9
	<u>Acanthephyra quadrispinosa</u>	2
16	<u>Gennadas incertus</u>	6
	<u>Gennadas propinquus</u>	2
	<u>Sergestes similis</u>	1
	<u>Sergestes (Sergia) prehensilis?</u>	7
	<u>Sergestes (Sergia) sp.</u>	1
	<u>Acanthephyra quadrispinosa</u>	2
	<u>Oplophorus spinosus</u>	2
24	<u>Gennadas incertus</u>	8
	<u>Gennadas parvus</u>	2
	<u>Gennadas propinquus</u>	1
	<u>Sergestes similis</u>	21
	<u>Acanthephyra quadrispinosa</u>	1

Table 25 continued

Station	Species	Number present
25	<u>Gennadas incertus</u>	9
	<u>Gennadas parvus</u>	1
	<u>Gennadas tinayrei</u>	1
	<u>Sergestes similis</u>	11
	<u>Acanthephyra quadrispinosa</u>	4
26	<u>Hymenodora frontalis</u>	1
27	<u>Sergestes similis</u>	2
28	<u>Sergestes similis</u>	7
	<u>Hymenodora frontalis</u>	1
30	<u>Sergestes similis</u>	13
32	<u>Sergestes similis</u>	10
	<u>Hymenodora frontalis</u>	2
33	<u>Sergestes similis</u>	54
34	<u>Sergestes similis</u>	25
36	<u>Sergestes similis</u>	12
37	<u>Sergestes similis</u>	13
38	<u>Sergestes similis</u>	33