OCEANOGRAPHICAL OBSERVATIONS
IN THE INDIAN OCEAN IN 1963
H.M.A.S. *DIAMANTINA*
Cruise Dm 3/63

OCEANOGRAPHICAL CRUISE REPORT NO. 25

DIVISION OF FISHERIES AND OCEANOGRAPHY
COMMONWEALTH SCIENTIFIC AND INDUSTRIAL
RESEARCH ORGANIZATION, AUSTRALIA 1965

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H.M.A.S. DIAMANTINA

Cruise Dm3/63

(Seasonal Biological Cruise No. 6)

COMMONWEALTH SCIENTIFIC AND INDUSTRIAL RESEARCH ORGANIZATION,

AUSTRALIA

MELBOURNE, 1965

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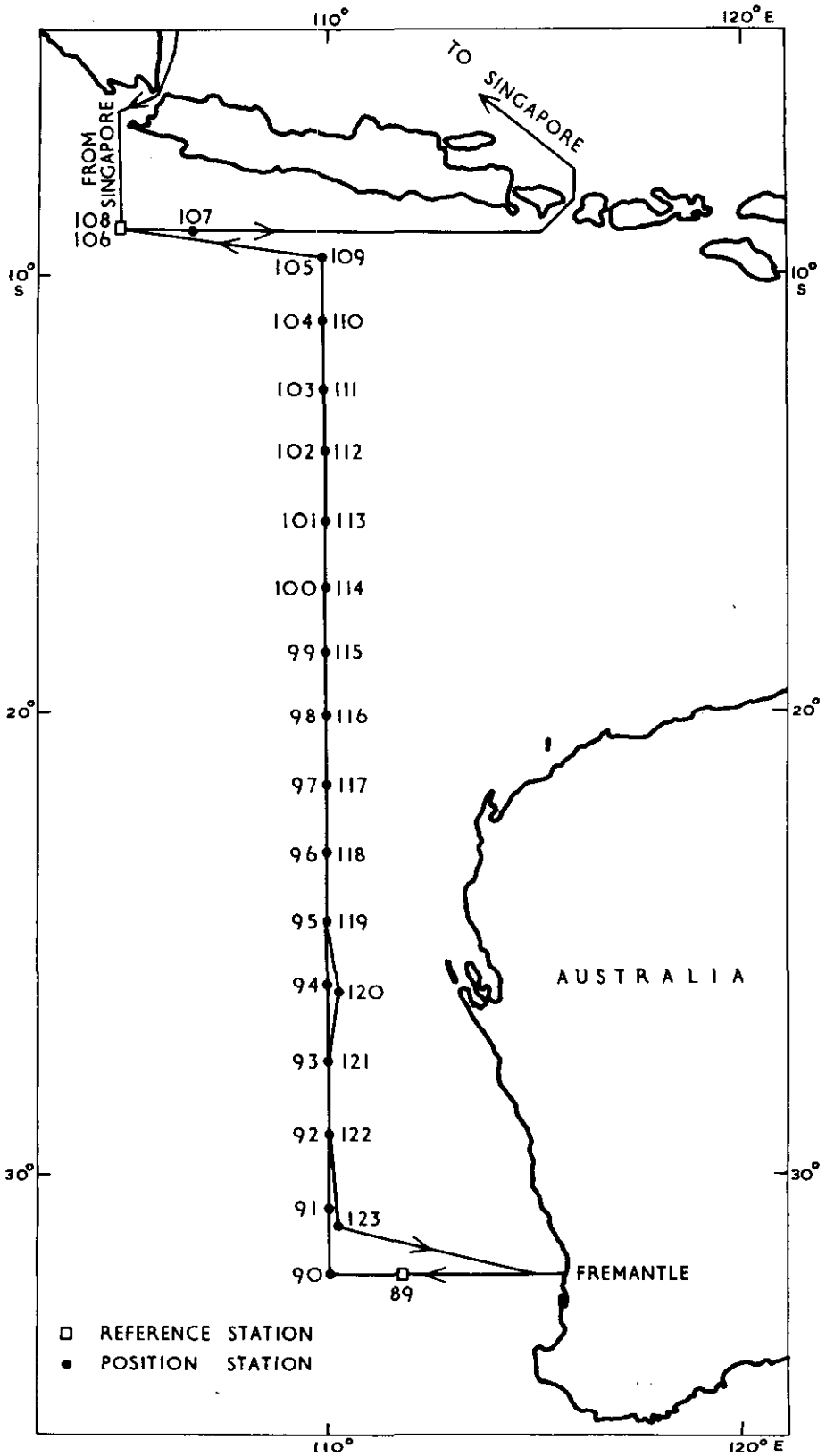
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OCEANOGRAPHICAL CRUISE REPORT

NO. 25

Oceanographical Observations in the Indian Ocean in 1963

H.M.A.S. *Diamantina*

Cruise Dm3/63

July 9 - August 11, 1963

I. INTRODUCTION

This report records the data for the third cruise in 1963 of H.M.A.S. *Diamantina*, Royal Australian Navy frigate, in the Indian Ocean; this cruise is the sixth of the seasonal biological cruises.

Objectives

These were - to determine zooplankton biomass, primary production, pigments, particulate carbon, and micronekton abundance along the 110°E. meridian and to examine the environmental factors likely to influence these biological properties, and the inter-relations of these properties with particular reference to the dynamics of production; and to investigate long and short wave radiation.

Itinerary

The cruise commenced at Fremantle on July 9, occupied SCOR-UNESCO Reference Station 1, and then a series of stations north along the 110°E. meridian to SCOR-UNESCO Reference Station 2, proceeded through Sunda Strait to Singapore and then back along the same route to Fremantle (Fig. 1).

Scientific Personnel

B.Newell (Cruise Leader)
A.Heron
J.Prothero
B.Scott
J.Stevenson, CSIRO, Division of Meteorological Physics
J.Faget, Institut Francais d'Oceanie, Noumea

The analyses of hydrological samples were done in the ship's laboratory by Mr Prothero. Nitrate analyses were done at Cronulla by Mr Klye. The primary production samples were taken and incubated aboard by Mr Scott who also made the counts at Cronulla. The samples for pigment determination were taken aboard by Mr Prothero, and the analyses were done at Cronulla by Mr Wootton. The zooplankton samples were weighed at Cronulla under the direction of Mr Tranter. Micronekton samples were weighed at Noumea. The data were processed under the direction of Mr Hedge, by Mrs Bailey, Miss Hammond, Mrs Sander and Miss Wanstall. The track chart was prepared for publication by Mr Breach and Mrs Cozens.

II. WORK ACCOMPLISHED

Thirty-five stations were worked (Dm3/89/63-Dm3/123/63). Bathythermograph casts were made at 32 stations. Subsurface hydrology samples were collected at 33 stations; primary production and pigment samples were collected at 35 stations; particulate carbon samples were collected at 12 stations; zooplankton samples were collected at 31 stations; micronekton samples were collected at 15 stations.

TABLE 1

WORK DONE AT EACH STATION

Stn No.	BT	Hydrology 1	Hydrology 2	Prim.Prod. 1	Prim.Prod. 2	Prim.Prod. 3	Part. Carbon	Pig-ments	Zooplankton 1	Zooplankton 2	Micro-nekton
89	+	5000		+				+			
90	+	5000		+			+	+	+	+	
91	+			+			+	+	+	+	+
92	+	4000		+			+	+	+	+	
93	+		+	+			+	+	+	+	+
94	+	3500		+	+		+	+	+	+	
95	+		+	+			+	+	+	+	+
96	+	4500		+	+		+	+	+	+	
97	+		+	+			+	+	+	+	+
98	+	4000		+	+		+	+	+	+	
99	+		+	+			+	+	+	+	+

Stn No.	BT	Hydrology 1	Hydrology 2	Prim.Prod. 1	Prim.Prod. 2	Prim.Prod. 3	Part. Carbon	Pig-ments	Zooplankton 1	Zooplankton 2	Micro-nekton
100	+	4500		+	+		+	+	+	+	
101	+		+	+			+	+	+	+	+
102	+	4500		+	+			+	+	+	
103	+		+	+				+	+	+	+
104	+	4500		+	+			+	+	+	
105	+		+	+				+	+	+	+
106		5500		+				(+)			
107				+	+	+		+	+	+	
108	+	5000		+				(+)			
109	+	1300		+	+			+	+	+	
110	+		+	+				+	+	+	+
111	+	4500		+	+			+	+	+	
112	+		+	+				+	+	+	+
113	+	5000		+	+			+	+	+	
114	+		+	+				+	+	+	+
115	+	4500		+	+			+	+	+	
116	+		+	+				+	+	+	+
117	+	4500		+	+			+	+	+	
118	+		+	+				+	+	+	+
119	+	4000		+	+			+	+	+	
120	+		+	+				+	+	+	+
121	+	5000		+	+			+	+	+	
122	+		+	+				+	+	+	+
123		4000		+				+			

BT — Bathythermograms

Hydrology
1 Surface to depth (m)
2 Surface to 500 m only for temperature and salinity

Prim.Prod. — Primary Production
1 Artificial constant light incubation
2 Simulated *in situ* incubation
3 *In situ* incubation

Part.Carbon — Particulate Carbon

Zooplankton
1 Indian Ocean Standard net
2 Clarke-Bumpus horizontal tows

Micronekton — Midwater trawl

III. METHOD OF COLLECTION AND ANALYSIS OF SAMPLES

1. Physics

Temperature.- Water temperatures were taken with deep-sea reversing thermometers; protected thermometers with a range of -2° to 30°, and unprotected thermometers with a range of -2° to 30° or -4° to 60°. The accuracy of the temperatures is considered to be ± 0.03°. The readings are recorded in degrees Celsius.

Bathythermograms.- A 900 ft bathythermograph was used at the stations indicated in Table 1. A photograph of each slide is filed at Cronulla.

Thermometric Depth.- Depth calculations were made by the method described by Pollak (1950), and are considered accurate to ± 15 m at depths greater than 1000 m and to 1% above that depth.

Sigma-t.- Sigma-t values were calculated by computer, using the Table of σ_t given by La Fond (1951).

2. Chemistry

Salinity.- Salinity was measured on board with an inductive salinometer (Brown and Hamon 1961).

Dissolved Oxygen.- The standard Winkler method (Jacobsen, Robinson and Thompson 1950) was used with potassium iodate as the iodometric standard. Samples were collected in 275-300 ml capacity bottles and 100 ml duplicate aliquots were titrated to a starch end point. Values are given as ml/l. Duplicate titrations agreed to better than 0.03 ml/l of oxygen.

Oxygen Saturation.- Oxygen percentage saturation values were calculated by computer using the equation of Richards and Corwin (1956).

Inorganic Phosphate.- The method of Atkins (1923) was used with 1 ml molybdate reagent (300 ml 10% ammonium molybdate and 100 ml 50% sulphuric acid) and 0.1 ml 1% stannous chloride diluted afresh from a 40% stock solution in

hydrochloric acid, which was kept under paraffin. The reagents were automatically dispensed by a piston dispenser.

Standard phosphate solutions were made up in distilled water. At air temperatures less than 25° analyses were carried out in batches of 10; readings were begun within 10 minutes of adding reagents, and completed within 10 minutes. At air temperatures greater than 25° batches of 6 were analysed; readings were begun within 5 minutes of adding reagents and completed within 7 minutes. Each batch was compared with a distilled water blank and a 0.65 µg at./l standard in a HILGER Spekker absorptiometer using 4 cm cells and ILFORD 608 filters. Each day a complete calibration was made using standards up to 3.25 µg at./l. Results are given as µg at./l without any correction for salt error and are precise to ± 10% for values less than 0.5 µg at./l and ± 5% for higher values. If it is wished to correct for salt effects, the results given should be multiplied by 1.15.

Total Phosphorus.- 100 ml samples were drawn from the Nansen bottles into 150 ml Pyrex conical flasks, 0.2 ml of 72% perchloric acid was added and digestion at 200°-250° carried out immediately on a sand tray. After evaporation of water, heating was continued until fuming of the salt residue commenced. The samples were then allowed to cool and 100 ml of distilled water and 2 drops of 2% phenolphthalein were added. If alkaline, perchloric acid was added until a slight acidity persisted. The flasks were allowed to stand for about 24 hours to allow the salts to dissolve. Phosphate was then determined as described above for inorganic phosphate. Results are given as µg at./l, without salt correction. If it is wished to correct for salt effects, the results given should be multiplied by 1.15.

Nitrate.- After collection, water samples were stored in plastic bottles and preserved with 2 drops of saturated $HgCl_2$. Nitrate was determined at Cronulla by the strychnidine method (Rochford 1947). The reagent was prepared by the addition of 0.64 g strychnidine to a litre of nitrate-free sulphuric acid. 5 ml of this reagent were added, with minimum agitation, to 5 ml seawater or standard nitrate solution. The standards were made up in a mixture of equal volumes of artificial seawater and nitrate-free sulphuric acid. The standards and samples were shaken to distribute

the reagent, and the colour developed for 2 hours. The solutions were read in a UNICAM SP 600 spectrophotometer at a wavelength of 530 mμ using a 5 mm cell. Samples with an absorbance greater than that of the standard corresponding to 14,4μg at./l were diluted with artificial seawater - sulphuric acid mixture before reading. Results are given in μg at./l.

Particulate Carbon.- Six litres of seawater, collected by a plastic sampler (Jitts 1964) were filtered through a Whatman GF/C glass fibre filter 25 mm in diameter. The filters were returned to Cronulla for particulate carbon estimation by the method of Dal Pont and Newell (1963). The column average was calculated according to Humphrey (1960).

3. Primary Production

Water samples were aliquots of those taken in the twin 6 l. plastic sampler for pigment measurements. The samples were poured into 300 ml Pyrex bottles and incubated (1) in a constant artificial light of 1100 ft candles, (2) in a simulated in situ incubator, or (3) in situ. Geiger counting was done on board with a windowless counter. The details of the methods are given in Dyson et al. (1965).

4. Pigments

Water samples were taken with a plastic sampler and filtered within one or two hours through HA Millipore filters. The filters were placed in glass tubes and stored in metal desiccators over silica gel. The analyses were carried out at Cronulla using the method given by Humphrey (1960), except that 4 cm cells were used in a UNICAM SP 600 spectrophotometer and 9 ml 90% acetone were used for extraction.

5. Zooplankton

Sampling consisted of

(a) Vertical hauls through the upper 200 m with the Indian Ocean Standard Net (IOSN)

(b) Horizontal tows within the 200 m-0 stratum with Clarke-Bumpus Samplers (CBS)

(a) Vertical Hauls 200-0 m: The IOSN was used in the standard manner (Currie 1963) except that a heavier (100 lb) weight was attached to keep the net under control; this was replaced with a 30 lb weight during washing operations. No flowmeter was used. Wire angle averaged 20° and never exceeded 40°. The length of wire paid out to place the net at 200 m varied from 200-260 m with a mean of 214 m.

Samples were removed from the net in the following manner. The plankton bucket was detached and the contents poured into a larger container and the bucket replaced. The net was lowered into the water up to the ring and raised again, and the washings collected as before. Remnants still adhering to the codend were washed into the bucket by slopping water from the outside. Finally the net was lowered into the water and washed through without the bucket attached.

Sampling was in duplicate, the one haul immediately following the other. One sample is lodged with the Indian Ocean Biological Centre, Cochin, India; the other is at Cronulla.

(b) Horizontal Tows: Four CBS were towed simultaneously at approximately 200, 100, 50 and 0 m. The duration of the tow was approximately 45 minutes. The wire angle was kept within the limits 45°-60°, the ship's speed being 2-3 kt. Depth recorders (Hamon, Tranter and Heron 1963) were attached. These record both the depth range and the modal depth. CBS were washed by hand in the laboratory and the entire catch removed.

Storage of Samples

Samples were concentrated in the shipboard laboratory and stored in plastic bottles. Neutralized formalin was added to a final concentration of 10%.

Biomass Determination

Biomass was determined at Cronulla approximately one month after the end of the cruise. Each sample was strained off in a weighing dish and allowed to drain (weighing dishes with a base of 7 cm^2 and 80 meshes per inch gauze were used for CB samples, and ones with a base of 25 cm^2

and 60 meshes per inch gauze were used for IOSN samples. The drained sample was then washed several times in 50% alcohol to remove extraneous water and allowed to drain on an absorbent cloth which was repeatedly wrung dry. When the samples began to show signs of friability the weighing dish was carefully dried and the sample weighed. The entire operation took 5-10 minutes depending on the size of the sample. Samples containing large quantities of gelatinous material took longer. The routine procedure was to weigh the entire catch, and where exceptionally large organisms occurred (weighing more than half the rest of the catch), to make a second weighing without these.

Estimation of Volume Filtered

In estimating volume filtered by the IOSN it was assumed that 1 metre of wire out results in 1 m^3 of water filtered (the mouth area of the net being 1 m^2). Estimates of volume filtered by CBS are based on flowmeter readings referred to calibrations made before and after the cruise (Tranter 1962).

6. Micronekton

The micronekton programme, more correctly termed the midwater trawl programme, consisted of oblique tows through the upper 200 m layer with a 5 ft Isaacs-Kidd midwater trawl. The tows were made at every night station. The programme was conducted, in the field and in the laboratory, by the staff of the Laboratoire d'Oceanographie of the Institut Francais d'Oceanie.

On the Ship

(a) The gear: This consisted of a 5 ft Isaacs-Kidd midwater trawl, scaled down from the 6 ft trawl (King and Iversen 1962; Aron 1960). No flowmeter was used.

(b) Handling: The trawl was fitted with a depth recorder (Hamon, Tranter and Heron 1963) and lowered from the stern while the ship's speed was 2 kt. When the trawl was clear of the ship, speed was increased to 5 kt and the wire was paid out at 40-50 m per minute under a constant and minimum tension. After 600 m of wire had been paid out the ship's speed was reduced to 3 kt and further adjusted according to

the reading of a tension gauge. A final 100 m was then paid out making the total 700 m. After 5 minutes the wire was retrieved at a winch speed of 9 m/min. The average time at which the tows were made was 10 p.m. The paying-out period averaged 15 minutes and the retrieval period 80 minutes.

(c) Collecting and storing the samples: The net was washed from outside into the bucket which was then removed from the net. The net was checked for organisms caught in the meshes (e.g. Leptocephali); these were removed. The samples were stored in 10% neutralized formalin, in plastic jars; larger organisms were stored separately.

In the Laboratory

Samples were sorted by taxa 1-2 months after collection. The wet volumes were measured by displacement and counts of sub-samples were made. The taxa could be pooled into 4 main categories:

1. Gelatinous organisms (Medusae, Salps, Siphonophores) - no counts were made, the components being very often broken.

2. Planktonic organisms of relatively small size - no counts were made, the components being too numerous.

3. Macroplanktonic organisms - counts were made for each of the following components and in some cases for genus: Annelids, Pteropods, Heteropods, Chaetognaths, Amphipods, Stomatopods, Carids, Penaeids, Mysids, Euphausiids, Phyllosomas.

4. Micronektonic organisms - counts were made for each of the following components: Fishes, Fish larvae, Leptocephali, Cephalopods. Counts were made by species and by size for the fishes.

The categories 3 and 4 which predominate in midwater trawl samples are not clearly distinguished. Detailed results will be published separately; average conversion factors, determined for each taxa or category, were used to convert from wet volume to dry weight (the dry weight was obtained by keeping the sample at 60°, in an oven, until

the weight remained constant, usually 24 hours). A table of these conversion factors is given along with the data.

The categories 1 and 2 are comparable to the organisms obtained by the usual conical plankton net. Results are expressed in dry weight per average tow (using the general average conditions for all stations - 15 minutes for paying out, 5 minutes for horizontal tow, 78 minutes for retrieval). Results are then directly comparable.

From the above data it is possible to convert to absolute terms by a method already used by King and Iversen (1962) and Aron (1960). Assuming that (a) the speed of the trawl was known, (b) the trawl was working during paying out and retrieval in a manner proportional to the ship's speed, (c) all the water passing through a definite section of the net was filtered and (d) all the organisms passing through this section were caught, then the front end surface can be used to calculate the minimum value filtered. This gives the following results:

Assumed maximum volume of water filtered per average tow
$= 1.929\ m^2 \times 10{,}000\ m = 19{,}290\ m^3$

Assumed minimum volume of water filtered per average tow
$= 0.197\ m^2 \times 10{,}000.m = 1{,}970\ m^3$

From these estimates of maximum and minimum volume filtered it would be possible to convert the data (p.141) to mg/m^3 (minimal and maximal estimates).

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IV. DATA SHEETS AND TABLES

The data were listed on an I.B.M. 1401. An explanation of the headings for each set of data sheets is given at the beginning of the relevant part.

DATA

PART 1

HYDROLOGY

DEEP STATIONS

EXPLANATION OF HEADINGS

Part 1 — Hydrology - Deep Stations

STATION — Gives the station identification, for example, Dm3/89/63 signifies the 89th station worked by Diamantina in 1963, on her 3rd cruise for that year

DATE — Given as day/month/year

TIME — Given in Zone Time, and is the time at the beginning of the first cast. The code letter used for the time zone (Table 2) follows the time

TABLE 2

CODE FOR TIME ZONES

Longitude Exceeding	Up to but not exceeding	Time Zone (hrs)	Code
07°30'E.	22°30'E.	-1	A
22°30'E.	37°30'E.	-2	B
37°30'E.	52°30'E.	-3	C
52°30'E.	67°30'E.	-4	D
67°30'E.	82°30'E.	-5	E
82°30'E.	97°30'E.	-6	F
97°30'E.	112°30'E.	-7	G
112°30'E.	127°30'E.	-8	H
127°30'E.	142°30'E.	-9	I
142°30'E.	157°30'E.	-10	K
157°30'E.	172°30'E.	-11	L
172°30'E.	180°	-12	M
180°	172°30'W.	+12	Y
172°30'W.	157°30'W.	+11	X
157°30'W.	142°30'W.	+10	W
142°30'W.	127°30'W.	+9	V
127°30'W.	112°30'W.	+8	U
112°30'W.	97°30'W.	+7	T
97°30'W.	82°30'W.	+6	S
82°30'W.	67°30'W.	+5	R

Longitude Exceeding	Up to but not exceeding	Time Zone (hrs)	Code
67°30'W. -	52°30'W.	+4	Q
52°30'W. -	37°30'W.	+3	P
37°30'W. -	22°30'W.	+2	O
22°30'W. -	07°30'W.	+1	N
07°30'W. -	07°30'E.	0	Z

LATITUDE LONGITUDE	Given in degrees and minutes
SONIC DEPTH	Given in metres, measured at standard sound velocity of 800 fm (1463 m) per second
AIR TEMP. WET DRY	Air temperatures recorded from wet and dry bulb thermometers in °C
WIND DIR. SP.	Wind direction and speed are coded using Tables 8 and 9 in U.S. Hydrogr. Office (1955)
ANEM. HEIGHT	The average height of the anemometer above sea level, given in metres
CLOUD TYPE AMT.	Cloud type and amount are coded using Tables 2 and 3 in U.S. Hydrogr. Office (1955)
VIS.	Visibility is coded using Table 4 in U.S. Hydrogr. Office (1955)
SEA DIR. AMT.	Sea direction and amount are coded using Tables 5 and 8 in U.S. Hydrogr. Office (1955)
SWELL DIR. AMT.	Sea swell direction and amount are coded using Tables 6 and 8 in U.S. Hydrogr.Office (1955)
ATMOS. PRESSURE	Atmospheric pressure given in millibars

WIRE ANGLES CAST 1 CAST 2	Wire angles are measured at the surface and expressed in degrees for each cast. An asterisk indicates that the wire angle was not measured
CAST	The cast number corresponding to the wire angle is shown
DEPTH	Actual sampling depth, given in metres
TEMP.	Sea temperatures recorded in °C
SALINITY	Given in parts per thousand
SIGMA-T	Sigma-t to 2 decimal places
OXYGEN	Given in ml/l
OXYGEN % SAT.	Oxygen percentage saturation
INORG. P, TOTAL P and NITRATE	Given in µg at./l
***	Indicates no data available

STATION	DATE	TIME	LATITUDE	LONGITUDE
OM 3/ 89/63	10/ 7/63	1015 H	32 00 S	111 50 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	WIRE ANGLES CAST2
5029	12.2	16.1	27	05	16	6	6	7	27	3	26	4	1015.0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	16.55	35.754	26.21	5.29	99	0.10	0.47	00.4
2	22	***	35.772	***	5.39	***	0.25	***	***
2	45	16.54	35.758	26.21	5.39	101	0.15	0.47	00.3
2	66	16.35	35.744	26.25	5.40	101	0.18	***	***
2	90	16.31	35.713	26.24	5.33	99	0.19	0.50	00.4
2	135	15.79	35.653	26.31	5.33	98	0.33	***	00.6
2	180	14.02	35.401	26.51	5.38	95	0.39	0.67	02.6
2	270	11.68	35.088	26.73	5.48	92	0.69	0.95	06.6
2	451	9.72	34.798	26.86	5.53	89	0.93	1.21	12.6
2	630	8.62	34.642	26.91	5.35	83	1.18	1.38	18.8
2	810	6.31	34.462	27.10	4.57	67	1.67	1.93	25.5
2	970	4.28	***	***	4.38	***	1.67	1.93	29.1
2	1130	3.69	34.521	27.46	3.65	51	1.87	2.15	***
1	1339	3.20	34.532	27.51	3.66	50	2.07	2.37	38.2
1	1803	2.61	34.669	27.67	3.62	48	2.04	2.24	38.2
1	2267	2.26	34.741	27.76	3.84	51	2.18	2.68	38.4
2	2820	1.89	***	***	3.77	50	2.13	2.52	38.4
2	3930	1.35	34.755	27.84	4.14	53	1.97	2.19	36.5
1	3194	1.66	34.740	27.81	4.07	53	1.96	2.28	33.8
1	4121	1.25	34.731	27.83	4.36	56	2.03	2.13	36.1
1	4584	1.15	34.728	27.84	4.50	58	1.96	2.38	37.4

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/ 90/63	11/ 7/63	0800 H	31 57 S	110 00 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	WIRE ANGLES CAST2
5066	11.7	15.6	06	05	16	5	8	8	06	1	27	1	1012.1	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	18.29	35.695	25.74	5.10	99	0.26	0.41	00.0
2	25	18.29	35.705	25.75	5.10	99	0.22	***	***
2	50	17.64	35.757	25.95	5.08	97	0.24	0.47	00.0
2	74	17.29	35.772	26.05	5.05	96	0.26	***	***
2	99	16.44	35.710	26.20	5.14	96	0.27	0.51	00.3
2	148	14.15	35.433	26.50	5.16	92	0.31	***	01.9
2	198	12.47	35.204	26.67	5.45	93	0.59	0.58	04.1
2	296	10.73	34.951	26.80	5.54	91	0.76	1.04	08.0
2	489	9.39	34.733	26.86	5.24	83	0.95	1.37	14.5
2	678	8.30	34.599	26.93	5.21	81	1.22	1.77	19.0
2	858	5.79	34.421	27.14	4.49	65	1.75	***	26.1
2	1026	4.28	34.419	27.31	4.03	56	1.98	2.62	31.8
2	1182	3.79	34.489	27.42	3.64	50	2.03	2.79	33.5
1	1398	3.23	34.568	27.54	3.50	47	2.26	2.41	34.5
1	1865	2.58	34.723	27.72	3.50	47	2.19	2.38	34.9
1	2332	2.17	34.729	27.77	3.82	54	2.18	2.60	34.9
1	2805	1.86	34.735	27.79	3.96	52	2.08	2.39	33.7
1	3295	1.58	34.731	27.81	4.16	54	2.21	2.68	33.3
1	3790	1.32	34.725	27.82	4.32	56	2.08	2.34	28.0
1	4288	1.23	34.719	27.82	4.40	56	2.08	2.06	34.1
1	4786	1.12	34.717	27.83	4.55	58	2.09	2.29	32.8

STATION	DATE	TIME	LATITUDE	LONGITUDE
OM 3/ 92/63	12/ 7/63	0730 H	29 00 S	110 00 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	WIRE ANGLES CAST2
5486	15.0	17.8	28	03	16	5	2	8	28	1	30	1	1010.6	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	19.19	35.688	25.51	4.71	93	0.24	0.17	00.3
2	25	19.20	35.696	25.54	5.05	100	0.22	***	***
2	50	19.18	35.712	25.53	5.05	99	0.24	0.17	00.0
2	75	18.89	35.787	25.66	5.01	98	0.28	***	***
2	100	18.74	35.803	25.71	5.04	98	0.34	0.23	00.0
2	150	18.00	35.841	25.93	5.05	97	0.30	***	00.0
2	200	15.61	35.663	26.36	5.03	92	0.45	0.36	01.3
2	300	12.68	35.309	26.71	5.36	92	0.58	0.71	02.9
2	500	9.22	34.735	26.89	5.46	86	1.05	1.34	11.5
2	700	6.71	34.476	27.08	4.60	69	1.57	1.69	22.9
2	900	4.37	34.448	27.34	3.86	54	1.96	1.71	30.5
1	1070	3.83	34.566	27.48	3.35	46	2.38	2.03	32.9
1	1265	3.42	34.570	27.52	3.38	46	2.04	2.19	32.9
1	1460	3.02	34.621	27.62	3.34	45	2.15	***	36.0
1	1946	2.40	34.709	27.74	3.65	49	2.10	2.51	36.0
1	2432	2.01	34.727	27.77	3.72	49	2.12	2.39	32.4
1	2919	1.71	34.727	27.81	4.00	53	2.02	2.26	33.1
1	3406	1.46	34.721	27.81	4.12	53	2.02	2.18	32.2
1	3892	1.27	34.719	27.82	4.27	55	2.00	2.28	32.2

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/ 93/63	12/ 7/63	1945 H	27 30 S	110 00 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	WIRE ANGLES CAST2
5624	15.6	17.2	27	03	16	6	2	7	27	2	28	1	1011.6	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	20.41	35.559	25.11	***	***	***	***	***
1	22	20.42	35.561	25.09	***	***	***	***	***
1	44	20.38	35.574	25.11	***	***	***	***	***
1	66	20.25	35.693	25.23	***	***	***	***	***
1	87	19.75	35.731	25.39	***	***	***	***	***
1	131	19.08	35.798	25.62	***	***	***	***	***
1	176	18.21	35.865	25.89	***	***	***	***	***
1	263	15.70	35.700	26.37	***	***	***	***	***
1	438	10.60	35.064	26.91	***	***	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/ 94/63	13/ 7/63	0745 H	25 50 S	110 00 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	WIRE ANGLES CAST2
3795	15.6	19.4	24	03	16	8	3	8	24	2	25	4	1013.4	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	21.05	35.463	24.84	4.73	96	0.17	0.38	00.5
2	25	21.03	35.460	24.85	4.82	98	0.21	***	***
2	50	21.04	35.481	24.86	4.84	98	0.18	0.38	00.3
2	75	21.06	35.467	24.84	4.73	96	0.18	***	***
2	100	20.81	35.538	24.97	4.48	91	0.21	0.40	***
2	150	19.29	35.733	25.52	4.36	86	0.36	***	01.7
2	200	17.57	35.826	26.02	4.49	86	0.39	0.46	01.1
2	300	14.46	35.537	26.52	4.87	87	0.57	0.63	03.5
2	500	9.85	34.845	26.87	5.35	86	0.92	1.03	13.1
1	683	8.23	34.624	26.96	4.89	76	1.31	1.52	19.7
1	879	5.55	34.545	27.29	3.31	48	2.02	2.41	34.0
1	1074	4.67	34.620	27.43	2.71	38	2.16	2.52	38.4
1	1269	3.94	34.604	27.50	2.86	39	2.04	2.46	39.1
1	1464	3.38	34.634	27.57	3.11	42	2.22	2.32	39.1
1	1953	2.46	34.725	27.73	3.46	46	2.03	2.33	40.1
1	2440	1.99	34.756	27.79	3.66	48	1.96	2.07	39.3
1	2929	1.71	34.757	27.82	3.89	51	1.96	2.16	37.4
1	3417	1.41	34.750	27.85	4.00	52	1.96	2.18	37.4

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/ 95/63	13/ 7/63	1945 H	24 30 S	110 00 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	WIRE ANGLES CAST2
4206	15.6	18.9	24	04	16	*	0	8	24	2	23	4	1018.8	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	21.19	35.421	24.77	***	***	***	***	***
1	24	21.18	35.421	24.78	***	***	***	***	***
1	48	21.05	35.435	24.82	***	***	***	***	***
1	72	20.85	35.533	24.95	***	***	***	***	***
1	97	20.61	35.635	25.09	***	***	***	***	***
1	145	19.38	35.728	25.49	***	***	***	***	***
1	194	18.32	35.813	25.82	***	***	***	***	***
1	290	15.57	35.287	26.08	***	***	***	***	***
1	484	9.71	34.811	26.89	***	***	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/ 96/63	14/ 7/63	0730 H	23 00 S	110 00 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	WIRE ANGLES CAST2
4984	15.6	19.5	14	04	16	6	2	8	14	2	99	9	1016.5	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	23.17	35.046	23.93	4.60	97	0.13	0.45	00.2
2	25	23.10	35.027	23.94	4.64	98	0.11	***	***
2	50	22.54	35.235	24.26	4.51	94	0.13	0.49	00.5
2	75	22.33	35.293	24.36	4.58	95	0.15	***	***
2	100	21.53	35.470	24.72	4.38	90	0.21	0.57	00.7
2	150	19.72	35.495	25.22	3.95	78	0.41	***	03.8
2	200	18.60	35.708	25.67	4.30	84	0.28	0.69	02.3
2	300	15.15	35.548	26.37	4.71	85	0.41	0.77	03.1
2	500	9.68	34.819	26.88	5.26	84	0.94	1.33	11.3
2	700	7.15	34.543	27.05	4.45	67	1.51	1.79	23.8
2	900	5.34	34.586	27.32	2.57	37	2.19	2.39	34.0
2	1100	4.76	34.647	27.44	2.41	34	2.31	2.78	36.7
1	1281	4.12	34.631	27.50	2.64	37	2.13	2.55	38.2
1	1478	3.48	34.647	27.58	2.85	39	1.94	2.84	37.4
1	1971	2.52	34.714	27.72	3.30	44	1.90	2.49	35.9
1	2464	2.04	34.727	27.77	3.51	46	1.88	2.55	35.9
1	2957	1.71	34.728	27.81	3.87	50	1.79	2.34	35.9
1	3450	1.41	34.723	27.81	4.08	53	1.76	2.37	***
1	3943	1.28	34.719	27.82	4.17	54	2.01	2.37	35.3
1	4436	1.22	34.720	27.82	4.31	55	1.99	2.43	36.1

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/ 98/63	15/ 7/63	0730 H	20 00 S	110 00 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	WIRE ANGLES CAST2
4206	21.1	22.5	10	02	16	2	3	8	10	1	19	1	1014.5	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	24.19	34.913	23.53	4.63	99	0.21	0.35	00.3
2	24	24.13	34.944	23.57	4.63	99	0.20	***	***
2	48	23.98	35.033	23.68	4.63	99	0.25	0.48	00.5
2	73	22.75	34.969	24.02	3.66	77	0.32	***	***
2	97	21.50	35.028	24.39	3.36	69	0.53	0.95	06.9
2	146	19.64	35.265	25.07	3.41	67	0.60	***	07.3
2	195	18.10	35.423	25.58	3.53	68	0.60	0.92	07.4
2	292	15.63	35.606	26.31	4.58	84	0.57	0.96	04.3
2	487	9.47	34.768	26.87	5.30	84	0.97	1.52	14.1
2	682	6.99	34.617	27.14	3.30	49	1.87	2.05	32.9
2	877	5.55	34.630	27.35	2.05	30	2.39	2.81	38.6
1	1024	5.01	34.636	27.40	2.23	32	2.40	2.57	41.8
1	1219	4.28	34.641	27.50	2.39	34	2.24	2.43	41.6
1	1415	3.66	34.664	27.57	2.72	37	2.30	2.52	37.4
1	1904	2.54	34.731	27.73	3.22	43	2.31	2.35	39.2
1	2392	2.04	34.734	27.77	3.43	45	2.07	2.17	38.0
1	2881	1.71	34.737	27.80	3.70	48	2.11	2.13	35.7
1	3370	1.39	34.729	27.83	4.03	52	2.04	2.22	37.2
1	3859	1.18	34.727	27.83	4.14	53	1.95	2.08	35.5

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/ 99/63	15/ 7/63	2000 H	18 30 S	110 00 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	WIRE ANGLES CAST2
4892	21.9	24.4	03	03	16	*	0	8	03	1	19	1	1014.0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	25.45	34.422	22.78	***	***	***	***	***
1	24	25.41	34.560	22.92	***	***	***	***	***
1	49	25.37	34.594	22.93	***	***	***	***	***
1	73	25.13	34.743	23.14	***	***	***	***	***
1	97	24.03	34.849	23.53	***	***	***	***	***
1	146	20.84	34.914	24.48	***	***	***	***	***
1	194	18.11	35.188	25.40	***	***	***	***	***
1	292	15.35	35.463	26.26	***	***	***	***	***
1	486	9.29	34.806	26.93	***	***	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/100/63	16/ 7/63	0718 H	17 00 S	110 00 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	WIRE ANGLES CAST2
5486	21.7	25.6	06	02	16	8	1	8	06	1	15	1	1015.5	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	26.18	34.222	22.40	4.49	99	0.11	0.53	00.2
2	24	26.21	34.202	22.38	4.51	100	0.15	***	***
2	48	26.08	34.333	22.52	4.43	98	0.11	0.49	00.3
2	72	25.21	34.700	23.06	4.09	89	0.27	***	***
2	96	23.58	34.763	23.60	3.50	74	0.53	0.81	02.9
2	119	22.24	34.869	24.06	3.06	63	0.76	***	***
2	143	21.16	34.919	24.40	2.98	61	0.78	***	07.9
2	191	19.08	35.239	25.19	3.35	65	0.70	1.20	07.6
2	239	16.66	35.381	25.90	3.58	67	0.80	***	***
2	286	14.06	35.160	26.32	3.34	59	1.02	1.70	13.9
2	382	11.15	35.005	26.77	4.21	70	1.15	***	***
2	477	9.04	34.760	26.94	4.39	69	1.25	1.90	19.9
2	668	6.72	34.662	27.21	2.50	37	1.97	3.54	34.0
2	859	5.70	34.670	27.35	1.96	28	2.21	2.82	37.4
1	990	5.21	34.677	27.41	2.00	28	2.32	2.99	35.1
1	1178	4.55	34.672	27.49	2.17	31	2.33	3.31	38.9
1	1366	3.93	34.844	27.69	***	***	***	***	***
1	1836	2.76	34.743	27.72	2.97	40	***	2.72	38.4
1	2306	2.17	34.765	27.79	3.19	42	2.19	3.40	39.1
1	2777	1.80	34.761	27.81	3.44	45	2.11	3.19	38.0
1	3246	1.47	34.750	27.84	3.66	48	2.05	2.92	38.0
1	3716	1.30	34.741	27.83	3.88	50	2.10	2.99	38.0
1	4186	1.20	34.742	27.84	3.90	50	2.02	2.62	38.2

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/101/63	16/ 7/63	2015 H	15 30 S	110 00 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	WIRE ANGLES CAST2
5669	23.3	26.1	06	03	16	*	0	8	08	1	11	1	1013.0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	26.21	34.221	22.39	***	***	***	***	***
1	24	26.16	34.168	22.37	***	***	***	***	***
1	47	26.09	34.199	22.41	***	***	***	***	***
1	71	26.19	34.374	22.51	***	***	***	***	***
1	94	23.35	34.732	23.64	***	***	***	***	***
1	141	19.56	34.972	24.87	***	***	***	***	***
1	188	17.32	35.093	25.52	***	***	***	***	***
1	282	12.27	34.826	26.42	***	***	***	***	***
1	470	9.39	34.783	26.90	***	***	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/102/63	17/ 7/63	0755 H	14 00 S	110 00 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	WIRE ANGLES CAST2
5806	23.3	26.1	07	04	16	8	1	8	07	2	08	1	1012.8	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	26.25	34.181	22.35	4.45	98	0.07	0.28	00.2
2	25	26.18	34.146	22.35	4.51	99	0.13	***	***
2	50	26.08	34.383	22.55	4.57	101	0.12	0.39	00.0
2	75	26.08	34.512	22.68	4.47	99	0.14	***	***
2	100	24.79	34.843	23.30	4.37	95	0.21	0.29	00.7
2	125	22.88	34.935	23.95	3.83	81	0.48	***	***
2	150	20.47	34.835	24.52	2.98	60	0.76	***	***
2	200	16.28	34.600	25.39	2.60	48	1.17	1.35	16.7
2	250	14.90	34.745	25.81	2.18	39	1.31	***	***
2	300	13.04	34.780	26.23	2.37	41	1.33	1.65	19.8
2	400	10.69	34.860	26.74	3.23	53	1.40	***	***
2	500	8.99	34.742	26.93	3.70	58	1.41	1.82	22.7
2	700	6.82	34.655	27.19	2.11	31	2.14	2.35	29.2
2	900	5.49	34.641	27.35	2.04	29	2.25	2.49	36.1
1	1087	4.61	34.634	27.45	2.18	30	2.25	2.65	36.5
1	1285	4.07	34.658	27.52	2.32	32	2.29	2.65	39.1
1	1482	3.55	34.688	27.61	2.57	36	2.27	2.41	30.1
1	1977	2.60	34.746	27.75	3.13	42	2.11	2.53	36.6
1	2471	2.08	34.755	27.79	3.39	44	2.18	2.47	35.7
1	2965	1.65	34.742	27.82	3.74	49	2.05	2.41	35.7
1	3460	1.36	34.745	27.83	3.96	51	2.11	2.35	34.6
1	3954	1.28	34.733	27.83	4.09	53	2.02	2.53	34.6
1	4448	1.19	34.743	27.84	4.23	54	1.97	2.62	28.1

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/103/63	17/ 7/63	1955 H	12 30 S	110 00 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	WIRE ANGLES CAST2
5394	22.2	26.1	07	04	16	8	1	8	07	2	08	4	1010.3	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	26.86	34.321	22.26	***	***	***	***	***
1	24	26.93	34.294	22.22	***	***	***	***	***
1	48	26.91	34.296	22.23	***	***	***	***	***
1	72	26.92	34.317	22.24	***	***	***	***	***
1	95	26.88	34.346	22.27	***	***	***	***	***
1	143	***	34.740	***	***	***	***	***	***
1	191	19.42	34.556	24.59	***	***	***	***	***
1	286	12.71	34.558	26.12	***	***	***	***	***
1	477	8.51	34.638	26.93	***	***	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/104/63	18/ 7/63	0730 H	11 00 S	110 00 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	WIRE ANGLES CAST2
4901	22.1	26.1	08	04	16	8	1	8	09	2	09	1	1010.8	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	26.24	34.126	22.31	4.51	100	0.08	0.41	00.0
2	23	26.11	34.091	22.33	4.38	96	0.08	***	***
2	47	26.19	34.091	22.32	4.45	99	0.11	0.47	00.0
2	70	26.20	34.092	22.32	4.42	98	0.15	***	***
2	94	24.66	34.542	23.11	3.06	66	0.62	0.91	03.7
2	117	22.05	34.546	24.38	2.93	55	0.71	***	***
2	140	20.27	34.546	24.38	2.74	55	0.93	***	***
2	187	16.30	34.616	25.40	2.58	47	1.16	1.70	13.0
2	234	13.30	34.663	26.08	2.43	42	1.41	***	***
2	280	11.18	34.622	26.46	2.22	36	1.61	2.11	22.6
2	374	***	34.676	***	2.38	***	1.65	***	***
2	467	8.47	34.653	26.95	***	***	1.65	1.82	28.1
2	653	7.08	34.660	27.16	1.95	29	2.15	2.91	33.3
2	840	5.57	34.632	27.33	1.87	27	2.14	3.04	33.3
1	1051	4.80	34.641	27.43	2.18	31	2.28	3.04	32.3
1	1249	4.19	34.666	27.52	2.23	31	2.29	2.81	35.2
1	1446	3.73	34.716	27.61	2.44	33	2.29	3.70	35.4
1	1940	2.65	34.764	27.75	2.99	40	2.41	2.61	34.0
1	2433	2.07	34.771	27.80	3.33	44	2.12	2.67	35.0
1	2927	1.67	34.758	27.82	3.62	47	2.12	2.91	32.9
1	3421	1.34	34.746	27.83	3.78	49	2.06	2.81	31.7
1	3915	1.18	34.748	27.85	4.06	52	1.99	2.78	30.6
1	4408	1.18	34.748	27.85	4.18	54	1.93	3.66	30.2

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/105/63	18/ 7/63	1930 H	09 30 S	110 00 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	WIRE ANGLES CAST2
1500	22.9	26.7	11	04	16	5	2	8	11	2	10	1	1011.1	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	25.11	34.036	22.59	***	***	***	***	***
1	23	24.60	33.953	22.69	***	***	***	***	***
1	46	22.93	34.076	23.27	***	***	***	***	***
1	70	20.31	34.337	24.19	***	***	***	***	***
1	93	17.53	34.572	25.07	***	***	***	***	***
1	139	14.57	34.685	25.84	***	***	***	***	***
1	186	12.43	34.646	26.25	***	***	***	***	***
1	278	10.63	34.743	26.66	***	***	***	***	***
1	464	8.84	34.731	26.95	***	***	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/106/63	19/ 7/63	2150 H	09 00 S	105 00 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	WIRE ANGLES CAST2
5742	23.1	26.1	10	05	16	*	0	8	10	4	10	6	1009.0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	26.05	33.877	22.18	4.46	98	0.15	0.37	00.0
2	24	26.07	33.813	22.13	4.42	97	0.10	***	***
2	49	25.05	34.247	22.77	3.56	77	0.41	0.64	01.7
2	73	22.72	34.342	23.53	3.06	63	0.71	***	***
2	97	19.80	34.515	24.46	2.76	54	0.85	1.07	09.1
2	122	16.19	34.530	25.36	2.72	50	1.15	***	***
2	146	14.76	34.552	25.69	2.63	47	1.19	***	***
2	195	12.25	34.565	26.22	2.33	39	1.57	1.92	19.9
2	244	11.01	34.689	26.55	1.98	32	1.69	***	***
2	293	10.50	34.816	26.74	1.76	28	1.75	2.13	27.0
2	391	9.58	34.851	26.92	1.89	30	1.75	***	27.7
2	488	9.03	34.876	27.03	1.57	24	1.91	2.27	30.0
2	685	7.35	34.797	27.23	1.46	22	2.13	2.33	33.1
2	880	5.76	34.699	27.36	1.82	26	2.13	2.33	34.6
2	1075	4.75	34.697	27.48	1.99	28	2.15	2.94	34.6
2	1271	4.50	34.785	27.58	2.01	28	2.25	2.86	36.5
1	1475	3.89	34.770	27.63	2.18	30	2.27	2.57	36.7
1	1965	2.55	34.760	27.75	2.93	39	2.17	2.33	35.6
1	2454	2.03	34.752	27.79	3.33	44	2.05	2.39	35.0
1	2944	1.71	34.743	27.81	3.58	47	1.96	***	35.7
1	3433	1.47	34.737	27.82	3.83	49	1.92	2.37	33.3
1	3923	1.19	34.728	27.83	4.02	52	1.92	2.17	31.0
1	4412	1.15	34.728	27.83	3.94	50	1.89	2.33	***
1	4902	1.22	34.726	27.83	4.21	54	1.87	2.30	32.5
1	5391	1.25	34.728	27.83	4.21	54	1.63	2.39	32.5

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/108/63	2/ 8/63	0130 H	09 00 S	105 00 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	WIRE ANGLES CAST2
5394	21.1	25.0	10	03	16	8	1	7	10	1	08	1	1010.5	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	24.83	34.393	22.95	4.69	101	0.10	0.72	00.3
2	24	24.85	34.410	22.95	4.63	100	0.17	***	***
2	48	24.94	34.487	22.98	4.47	97	0.17	0.78	00.5
2	71	23.13	34.528	23.55	3.01	63	0.68	***	***
2	95	20.02	34.552	24.43	2.57	51	0.94	1.27	11.9
2	119	17.00	34.565	25.19	2.62	49	1.18	***	***
2	143	15.30	34.635	25.64	2.45	44	1.28	***	***
2	191	12.82	34.563	26.10	2.44	42	1.57	1.79	20.9
2	239	11.15	34.569	26.43	2.32	38	1.67	***	***
2	286	10.90	34.793	26.65	1.73	28	1.69	1.82	22.0
2	382	9.79	34.841	26.88	1.86	30	1.75	***	***
2	478	8.74	34.785	27.01	1.85	29	1.85	2.22	31.1
2	669	7.11	34.742	27.22	1.66	25	2.08	2.60	34.0
2	860	5.86	34.691	27.34	1.83	26	2.11	2.84	33.1
2	1051	4.60	34.643	27.46	2.26	32	2.22	3.03	35.4
2	1242	4.47	34.727	27.54	2.12	30	2.21	2.31	35.7
1	1361	3.99	34.711	27.58	2.47	34	2.11	2.60	35.6
1	1817	2.83	34.752	27.72	2.92	39	2.05	2.58	33.1
1	2291	2.25	34.752	27.78	3.32	44	2.16	2.78	33.7
1	2773	1.81	***	***	3.58	***	2.01	3.70	34.4
1	3262	1.57	34.740	27.81	3.89	50	2.05	2.55	34.4
1	3755	1.24	34.726	27.83	4.11	53	1.98	2.57	33.3
1	4250	1.20	34.726	27.83	4.36	56	1.98	2.58	32.7
1	4747	1.20	34.729	27.84	4.39	57	1.93	2.55	32.1

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/109/63	3/ 8/63	0915 H	09 30 S	110 00 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	WIRE ANGLES CAST2
1426	23.3	25.6	09	03	16	8	1	8	10	2	12	1	1010.8	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	24.33	34.169	22.93	4.89	105	0.17	0.62	00.0
1	25	23.34	34.308	23.32	3.30	69	0.23	***	***
1	49	21.04	34.322	23.98	3.19	64	0.60	0.95	07.4
1	74	19.17	34.564	24.66	2.68	52	0.96	***	***
1	98	15.72	34.633	25.54	2.57	47	1.25	1.30	16.5
1	123	14.61	34.621	25.78	2.63	47	1.27	***	***
1	147	13.52	34.710	26.08	2.54	44	1.37	***	***
1	196	11.67	34.640	26.39	2.43	40	1.57	1.68	24.1
1	245	10.23	34.595	26.61	2.34	38	1.59	***	***
1	295	9.35	34.635	26.79	2.26	36	1.65	1.74	28.4
1	393	8.54	34.738	27.01	1.95	31	1.59	***	***
1	491	7.56	34.690	27.11	1.84	28	1.70	1.95	34.0
1	687	6.55	34.674	27.24	1.99	29	1.87	2.26	35.9
1	883	5.20	34.650	27.39	2.04	29	1.96	2.61	37.8
1	1079	4.36	34.654	27.49	2.30	32	2.08	2.55	36.9
1	1275	3.98	34.685	27.56	2.31	32	2.18	2.58	38.2

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/110/63	3/ 8/63	2000 H	11 00 S	110 00 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	WIRE ANGLES CAST2
4846	22.2	25.6	11	02	16	8	1	8	11	1	10	1	1009.8	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	25.31	***	***	***	***	***	***	***
1	21	25.27	***	***	***	***	***	***	***
1	42	25.18	***	***	***	***	***	***	***
1	64	23.81	***	***	***	***	***	***	***
1	84	21.75	***	***	***	***	***	***	***
1	127	16.89	***	***	***	***	***	***	***
1	170	14.34	***	***	***	***	***	***	***
1	255	11.43	***	***	***	***	***	***	***
1	425	8.32	***	***	***	***	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/111/63	4/ 8/63	0810 H	12 30 S	110 00 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	WIRE ANGLES CAST2
4572	22.8	26.1	11	03	16	8	2	8	11	2	11	1	1011.5	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	25.71	34.091	22.45	4.53	99	0.23	0.52	00.0
2	21	25.62	34.075	22.47	4.65	102	0.27	***	***
2	41	25.35	34.041	22.52	4.62	100	0.23	0.75	00.0
2	61	25.31	34.033	22.53	4.60	100	0.26	***	***
2	82	25.24	34.024	22.55	4.55	99	0.26	0.95	00.0
2	103	25.18	34.023	22.56	4.52	98	0.37	***	***
2	123	22.95	34.511	23.59	3.21	67	0.72	***	***
2	163	19.67	34.589	24.55	2.79	55	0.95	1.62	10.7
2	204	16.20	34.720	25.50	2.57	47	1.10	***	***
2	244	14.71	34.847	25.93	2.64	47	1.33	1.76	16.4
2	325	11.33	34.725	26.53	2.54	42	1.57	***	***
2	406	9.77	34.721	26.79	2.64	42	1.68	2.03	24.7
2	568	7.68	34.642	27.06	2.20	33	1.97	2.26	28.2
2	730	6.15	34.624	27.25	2.03	29	2.10	2.20	33.1
1	1008	4.85	34.621	27.41	2.03	29	2.46	2.67	35.4
1	1195	4.27	34.628	27.48	2.26	31	2.49	2.59	35.6
1	1383	3.74	34.663	27.58	2.49	35	2.33	2.66	34.0
1	1852	2.60	34.731	27.72	2.93	39	2.19	2.58	34.0
1	2321	2.13	34.741	27.77	3.28	43	2.24	2.73	33.5
1	2790	1.73	34.739	27.80	3.69	48	2.12	2.73	33.5
1	3259	1.40	34.725	27.81	3.95	51	2.03	2.49	31.6
1	3728	1.28	34.724	27.82	4.17	54	2.11	2.38	31.0
1	4197	1.20	34.733	27.83	4.22	54	1.96	2.20	32.5

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/112/63	5/ 8/63	2000 H	14 00 S	110 00 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	WIRE ANGLES CAST2
5596	22.2	26.1	11	03	16	*	0	8	11	2	12	1	1012.0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	26.01	34.254	22.48	***	***	***	***	***
1	24	26.00	34.259	22.49	***	***	***	***	***
1	48	25.83	34.252	22.53	***	***	***	***	***
1	72	25.83	34.266	22.54	***	***	***	***	***
1	96	***	34.434	***	***	***	***	***	***
1	144	20.91	34.699	24.30	***	***	***	***	***
1	192	16.91	34.632	25.27	***	***	***	***	***
1	288	13.46	34.870	26.21	***	***	***	***	***
1	481	8.67	34.709	26.96	***	***	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/113/63	5/ 8/63	0730 H	15 30 S	110 00 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	WIRE ANGLES CAST2
5559	22.2	26.7	10	03	16	*	0	8	07	2	11	1	1015.9	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	25.77	34.205	22.52	4.59	101	0.12	0.29	00.0
2	23	25.77	34.185	22.50	4.62	101	0.29	***	***
2	45	25.77	34.188	22.53	4.65	102	0.26	0.41	00.0
2	68	25.76	34.185	22.53	4.56	100	0.30	***	***
2	90	25.73	34.235	22.55	4.50	99	0.23	0.53	00.0
2	113	23.97	34.525	23.30	3.61	77	0.64	***	***
2	135	22.24	34.654	23.90	3.25	67	0.68	***	***
2	181	18.86	34.667	24.82	2.67	52	0.99	1.15	11.4
2	226	17.03	34.981	25.50	2.87	54	1.07	***	***
2	271	14.71	34.948	26.01	2.87	51	1.06	1.31	15.5
2	342	***	34.911	***	3.19	***	1.46	***	***
2	452	9.74	34.771	26.83	3.73	60	1.40	1.57	19.6
2	632	7.38	34.629	27.09	2.85	43	2.11	2.01	27.6
2	813	5.98	34.636	27.29	2.01	29	2.24	2.46	33.3
2	994	5.13	34.629	27.38	2.13	30	2.29	2.49	34.8
2	1174	4.41	34.637	27.47	2.29	32	2.31	2.44	35.9
1	1437	3.68	34.670	27.57	2.64	36	2.31	2.40	29.8
1	1919	2.60	34.721	27.72	3.14	42	2.26	2.49	34.4
1	2402	2.16	34.732	27.76	3.39	45	2.24	2.26	35.9
1	2885	1.77	34.754	27.81	3.65	48	2.12	2.25	32.3
1	3368	1.47	34.725	27.81	4.03	52	2.12	2.46	31.7
1	3850	1.27	34.715	27.82	4.12	53	2.09	2.58	37.1
1	4333	1.23	34.715	27.82	4.35	56	2.17	2.72	25.0
1	4816	1.20	34.717	27.82	4.39	56	2.00	2.52	31.0

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/114/63	5/ 8/63	1930 H	17 00 S	110 00 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	WIRE ANGLES CAST2
5486	21.1	25.0	13	04	16	*	0	8	13	2	13	*	1014.5	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	25.49	34.397	22.75	***	***	***	***	***
1	25	25.52	34.397	22.74	***	***	***	***	***
1	50	25.50	34.397	22.75	***	***	***	***	***
1	75	25.45	34.459	22.81	***	***	***	***	***
1	100	23.53	34.668	23.54	***	***	***	***	***
1	150	20.90	34.907	24.46	***	***	***	***	***
1	200	17.64	34.883	25.28	***	***	***	***	***
1	300	14.74	35.313	26.28	***	***	***	***	***
1	500	9.02	***	***	***	***	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/115/63	6/ 8/63	0730 H	18 30 S	110 00 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	WIRE ANGLES CAST2
4846	20.0	23.3	16	04	16	8	2	8	16	2	15	1	1016.4	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	24.89	34.592	23.08	4.67	101	0.21	0.44	00.0
2	24	24.88	34.585	23.07	4.55	98	0.23	***	***
2	48	24.20	34.728	23.39	4.57	98	0.23	0.51	00.0
2	72	24.17	34.783	23.44	4.70	101	0.22	***	***
2	97	24.05	34.826	23.51	4.57	98	0.26	0.51	00.0
2	121	23.06	34.952	23.89	3.93	83	0.36	***	***
2	145	21.83	35.088	24.34	3.62	74	0.64	***	***
2	193	19.17	35.078	25.05	2.95	58	0.69	1.00	09.2
2	241	17.77	35.504	25.73	3.79	72	0.76	***	***
2	289	15.90	35.462	26.14	4.04	74	0.71	0.98	05.1
2	386	12.32	35.188	26.69	4.91	84	0.74	***	***
2	482	9.81	34.819	26.86	5.14	83	1.00	1.04	06.7
2	675	6.56	34.552	27.14	3.61	53	1.90	2.13	29.0
2	868	5.50	34.639	27.35	2.12	30	2.17	2.36	37.5
1	921	5.29	34.646	27.38	2.00	28	2.35	2.48	36.0
1	1088	4.63	34.641	27.45	2.17	30	2.34	2.59	35.3
1	1261	4.06	34.652	27.52	2.34	32	2.21	2.33	37.9
1	1720	3.10	34.693	27.65	2.84	38	2.21	2.39	38.7
1	2198	2.27	34.726	27.75	3.26	43	2.28	2.61	36.8
1	2685	1.85	34.728	27.78	3.57	47	2.11	2.50	36.8
1	3173	1.51	34.721	27.82	3.84	50	2.03	2.54	31.2
1	3664	1.33	34.718	27.81	4.03	52	2.10	2.42	31.8
1	4156	1.22	34.718	27.82	4.13	53	2.00	2.31	35.4

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/116/63	6/ 8/63	1945 H	20 00 S	110 01 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	WIRE ANGLES CAST2
4023	18.3	23.3	14	04	16	8	3	8	14	2	14	1	1016.0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	23.70	34.868	23.64	***	***	***	***	***
1	25	23.66	34.888	23.67	***	***	***	***	***
1	50	23.10	34.927	23.86	***	***	***	***	***
1	75	22.54	35.084	24.14	***	***	***	***	***
1	100	21.17	35.152	24.57	***	***	***	***	***
1	150	19.77	35.326	25.08	***	***	***	***	***
1	200	18.59	35.515	25.53	***	***	***	***	***
1	300	14.73	35.461	26.41	***	***	***	***	***
1	500	9.51	34.774	26.87	***	***	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/117/63	7/ 8/63	0800 H	21 30 S	110 00 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	WIRE ANGLES CAST2
4938	17.2	21.1	14	05	16	8	3	8	14	2	15	4	1015.5	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	23.12	35.037	23.94	4.76	100	0.25	0.47	00.9
2	25	23.10	35.041	23.95	4.78	101	0.23	***	***
2	50	22.31	35.113	24.23	4.81	100	0.25	0.62	00.0
2	75	22.02	35.240	24.41	4.38	91	0.37	***	***
2	100	21.78	35.329	24.54	4.47	92	0.36	0.56	00.4
2	150	20.19	35.564	25.15	4.25	85	0.48	***	***
2	200	18.51	35.759	25.74	4.40	85	0.52	0.67	01.7
2	300	14.77	35.560	26.47	4.97	89	0.63	0.90	02.5
2	500	9.43	34.757	26.87	5.31	85	1.06	1.24	13.0
2	700	7.00	34.566	27.09	3.72	56	1.75	1.97	22.0
2	900	5.43	34.601	27.33	2.39	34	2.18	2.22	32.4
1	1004	4.92	***	***	2.85	***	2.25	2.38	36.2
1	1192	4.37	34.634	27.47	2.39	33	2.19	2.61	35.6
1	1384	3.78	34.647	27.55	2.61	36	2.21	2.36	35.6
1	1872	2.61	34.714	27.71	3.21	43	2.09	2.53	32.4
1	2368	2.14	34.723	27.77	3.32	44	2.11	2.41	34.3
1	2866	1.74	34.728	27.79	3.70	48	2.07	2.26	34.3
1	3368	1.41	34.727	27.82	3.99	51	2.05	2.13	35.0
1	3868	1.25	34.717	27.82	4.24	54	1.98	2.16	33.6
1	4368	1.20	34.717	27.82	4.27	55	1.98	2.13	33.4

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/118/63	7/ 8/63	2000 H	23 00 S	110 00 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	WIRE ANGLES CAST2
4938	16.1	20.6	13	05	16	8	2	8	13	3	14	1	1015.5	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	23.21	34.880	23.79	***	***	***	***	***
1	24	23.21	34.892	23.80	***	***	***	***	***
1	49	23.20	34.894	23.81	***	***	***	***	***
1	73	22.47	35.070	24.15	***	***	***	***	***
1	98	21.26	34.994	24.43	***	***	***	***	***
1	146	20.98	35.489	24.88	***	***	***	***	***
1	195	18.95	35.536	25.46	***	***	***	***	***
1	293	16.11	35.699	26.27	***	***	***	***	***
1	489	10.61	34.955	26.82	***	***	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/119/63	8/ 8/63	0730 H	24 30 S	110 01 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	WIRE ANGLES CAST2
4023	17.8	21.4	11	04	16	8	1	8	11	2	13	1	1014.5	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	21.75	35.069	24.35	4.92	101	0.17	0.74	00.4
2	25	21.61	35.112	24.42	5.00	103	0.16	***	***
2	50	21.50	35.371	24.65	4.88	100	0.31	0.79	00.1
2	75	20.75	35.526	24.97	4.65	94	0.33	***	***
2	100	20.13	35.546	25.16	4.20	84	0.57	0.79	02.7
2	150	18.91	35.638	25.54	3.89	76	0.62	***	***
2	200	17.60	35.774	25.97	4.43	85	0.66	0.79	03.0
2	300	14.38	35.490	26.50	4.99	89	0.73	0.91	04.3
2	500	9.49	34.774	26.88	5.30	85	0.91	1.08	15.2
1	680	7.03	34.538	27.07	4.30	64	1.52	1.62	24.6
1	874	5.10	34.513	27.30	3.07	44	1.85	2.27	32.7
1	1069	4.55	34.625	27.45	2.49	35	2.19	2.41	36.4
1	1263	3.94	34.629	27.52	2.69	38	2.27	2.60	35.7
1	1458	3.29	34.631	27.58	3.12	42	2.27	2.72	34.8
1	1944	2.43	34.712	27.74	3.43	46	2.08	2.33	34.5
1	2430	2.02	34.733	27.79	3.53	47	2.07	2.60	33.4
1	2917	1.68	34.734	27.80	3.84	50	1.98	2.38	29.4
1	3403	1.45	34.720	27.81	4.06	52	1.97	2.33	31.5
1	3890	1.22	34.712	27.82	4.18	54	1.91	2.27	33.4

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/120/63	8/ 8/63	1930 H	26 00 S	110 04 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.		VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	WIRE ANGLES CAST2
3911	20.6	22.2	06	02	16	4	*		8	06	2	21	4	1017.0	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	21.35	35.344	24.67	***	***	***	***	***
1	25	21.26	35.364	24.71	***	***	***	***	***
1	50	19.90	35.547	25.22	***	***	***	***	***
1	75	19.73	35.626	25.32	***	***	***	***	***
1	100	19.44	35.699	25.45	***	***	***	***	***
1	150	18.81	35.779	25.68	***	***	***	***	***
1	200	17.88	35.825	25.94	***	***	***	***	***
1	300	13.96	35.464	26.57	***	***	***	***	***
1	500	9.83	34.819	26.85	***	***	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/121/63	9/ 8/63	0740 H	27 30 S	110 00 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	WIRE ANGLES CAST2
5394	19.4	20.6	*	01	16	*	0	8	*	*	99	9	1017.5	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	19.89	35.538	25.21	5.08	101	0.22	0.56	00.0
2	25	19.70	35.561	25.28	5.07	101	0.22	0.51	***
2	49	19.72	35.582	25.29	5.10	101	0.22	0.45	00.0
2	74	19.36	35.676	25.45	4.92	97	0.22	0.60	***
2	98	19.22	35.694	25.51	5.03	99	0.23	0.70	00.0
2	147	18.86	35.779	25.66	4.86	95	0.23	***	***
2	196	17.83	35.806	25.94	4.63	89	0.25	1.01	01.0
2	293	14.97	35.595	26.45	5.03	91	0.45	1.52	01.8
2	489	10.34	34.904	26.83	5.51	90	0.82	2.13	09.2
2	684	8.53	34.638	26.92	5.22	81	1.35	2.75	17.9
2	880	5.26	34.630	27.38	4.45	64	1.48	2.82	17.9
1	1070	4.11	34.503	27.40	3.24	45	1.91	2.41	35.6
1	1265	3.56	34.561	27.50	3.23	44	2.10	2.98	37.0
1	1462	3.21	34.628	27.60	3.14	43	2.10	2.70	37.4
1	1953	2.44	34.705	27.73	3.42	46	2.07	2.61	35.6
1	2443	2.05	34.779	27.81	3.63	48	2.25	2.61	33.9
1	2934	1.75	34.730	27.79	3.83	50	1.93	2.58	34.3
1	3425	1.51	34.736	27.82	4.07	53	1.93	2.19	33.9
1	3916	1.29	34.726	27.82	4.11	53	1.87	***	33.9
1	4407	1.22	34.720	27.82	4.28	***	1.87	***	33.1
1	4898	1.12	34.778	27.88	4.49	57	1.85	***	34.7

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/122/63	9/ 8/63	1930 H	29 00 S	110 01 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	WIRE ANGLES CAST2
5431	20.0	21.1	33	03	16	*	0	8	33	2	21	5	1016.5	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
1	0	20.46	35.340	24.91	***	***	***	***	***
1	24	20.07	35.418	25.07	***	***	***	***	***
1	48	19.75	35.496	25.22	***	***	***	***	***
1	71	19.65	35.524	25.26	***	***	***	***	***
1	95	19.42	35.556	25.35	***	***	***	***	***
1	142	19.29	35.587	25.41	***	***	***	***	***
1	190	18.86	35.740	25.63	***	***	***	***	***
1	285	17.33	35.751	26.02	***	***	***	***	***
1	474	11.43	35.061	26.76	***	***	***	***	***

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/123/63	10/ 8/63	0700 H	30 41 S	110 03 E

SONIC DEPTH	AIR TEMP. WET	AIR TEMP. DRY	WIND DIR.	WIND SP.	ANEM. HEIGHT	CLOUD TYPE	CLOUD AMT.	VIS.	SEA DIR.	SEA AMT.	SWELL DIR.	SWELL AMT.	ATMOS. PRESSURE	WIRE ANGLES CAST1	WIRE ANGLES CAST2
5011	18.3	19.4	33	06	16	9	7	6	33	3	23	4	1011.8	*	*

CAST	DEPTH	TEMP.	SALINITY	SIGMA-T	OXYGEN	OXYGEN % SAT.	INORG. P	TOTAL P	NITRATE
2	0	19.33	35.528	25.35	4.95	98	0.19	***	00.5
2	15	18.90	35.593	25.51	5.08	99	0.20	***	***
2	30	18.42	***	***	5.03	97	0.18	***	00.4
2	45	17.51	35.731	25.96	5.18	99	0.26	***	***
2	58	16.67	35.788	26.21	5.27	99	0.28	***	00.6
2	95	16.41	35.815	26.29	5.24	98	0.31	***	***
2	115	15.74	35.718	26.37	5.17	95	0.28	***	00.8
2	170	14.28	35.499	26.53	5.13	91	0.39	***	02.4
2	285	12.11	35.180	26.73	5.19	89	0.60	***	06.0

DATA

PART 2

PRIMARY PRODUCTION

EXPLANATION OF HEADINGS

Part 2	Primary Production
STATION	Gives the station identification, for example, Dm3/89/63 signifies the 89th station worked from Diamantina in 1963, on her 3rd cruise for that year
DATE	Given as day/month/year
TIME	Given in Zone Time (Table 2, p.16)
LATITUDE LONGITUDE	Given in degrees and minutes
INCUBATION METHOD	ARTIFICIAL CONSTANT LIGHT 0: Incubation in artificial constant light of 1100 ft candles SIMULATED IN SITU 7: Incubation in a simulated in situ incubator using sunlight and blue glass filters IN SITU 5: Incubation in situ
ACTIVITY CPM	Activity of the ^{14}C stock used, in counts per minute
BACKGROUND	Activity in counts per minute
DEPTH	Depth of sampling in metres
LIGHT	The counts per minute of the filter from the clear bottle
DARK	The counts per minute of the filter from the dark bottle. If this is more than 50 and also more than 10% of the LIGHT count it is assumed to be aberrant and the symbol "B" is placed after it.

DARK USED	Usually the same as DARK. However, if this is aberrant or not done, the mean of the other DARK counts at that station which are not aberrant is used, and the symbol "E" placed after it
NETT	LIGHT minus DARK USED. If this is negative it is assumed to be equal to zero for further calculations and the symbol "G" is placed after it
INC.PER.	Incubation period
PRODUCTION A	For artificial constant light this is the calculated rate of production at the depth sampled per hour of incubation. For in situ and simulated in situ it is the production per day, and this is assumed to be twice the production from noon to sunset
PRODUCTION B	The integrated rate of production per day under one square metre of sea surface from the surface to the depth given. For artificial constant light, the production per day is assumed to equal 10 times the hourly production

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/ 89/63	10/ 7/63	1100 H	32 00 S	111 50 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 15	9.59 MILLION	15 CPM

DEPTH M	LIGHT CPM	DARK CPM	DARK USED CPM	NETT CPM	INC. PER. HOURS	PRODUCTION A MG.C/HR./CU.M.	PRODUCTION B G.C/DAY/SQ.M.
0	354	28	28	326	04.00	00.21	C0.00
25	523	17	17	506	04.00	00.32	00.07
50	477	28	28	449	04.00	00.29	00.14

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/ 90/63	11/ 7/63	0845 H	31 57 S	110 00 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 15	9.59 MILLION	15 CPM

DEPTH M	LIGHT CPM	DARK CPM	DARK USED CPM	NETT CPM	INC. PER. HOURS	PRODUCTION A MG.C/HR./CU.M.	PRODUCTION B G.C/DAY/SQ.M.
0	1030	15	15	1015	04.00	00.65	00.00
25	1635	16	16	1619	04.00	01.04	00.21
50	1429	7	7	1422	04.00	00.91	00.46
75	256	8	8	248	04.00	00.16	00.59
100	108	31	31	77	04.00	00.05	00.62
150	116	24	24	92	04.00	00.06	00.64

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/ 91/63	11/ 7/63	2045 H	30 30 S	110 00 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 15	9.59 MILLION	15 CPM

DEPTH M	LIGHT CPM	DARK CPM	DARK USED CPM	NETT CPM	INC. PER. HOURS	PRODUCTION A MG.C/HR./CU.M.	PRODUCTION B G.C/DAY/SQ.M.
0	964	15	15	949	04.00	00.61	C0.00
25	705	25	25	680	04.00	00.44	00.13
50	667	22	22	645	04.00	00.41	00.24
75	142	13	13	129	04.00	00.08	C0.30
100	106	29	29	77	04.00	00.05	00.32
150	9	57 B	20 E -	11 G	04.00	00.00	00.33

B ABERRANT VALUE, NOT USED
E MEAN NON-ABERRANT DARK USED
G NEGATIVE VALUE, ASSUMED ZERO

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/ 92/63	12/ 7/63	0800 H	29 00 S	110 00 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 15	9.59 MILLION	15 CPM

DEPTH M	LIGHT CPM	DARK CPM	DARK USED CPM	NETT CPM	INC. PER. HOURS	PRODUCTION A MG.C/HR./CU.M.	PRODUCTION B G.C/DAY/SQ.M.
0	1122	49	49	1073	04.00	00.69	CC.CO
25	1052	47	47	1005	04.00	00.64	C0.17
50	593	48	48	545	04.00	00.35	00.29
75	89	14	14	75	04.00	00.05	CC.34
100	164	14	14	150	04.00	00.10	C0.36
150	13	10	10	3	04.00	00.00	C0.38

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/ 93/63	12/ 7/63	2010 H	27 30 S	110 00 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 15	9.59 MILLION	15 CPM

DEPTH M	LIGHT CPM	DARK CPM	DARK USED CPM	NETT CPM	INC. PER. HOURS	PRODUCTION A MG.C/HR./CU.M.	PRODUCTION B G.C/DAY/SQ.M.
0	330	33	33	297	04.00	00.19	00.00
25	371	19	19	352	04.00	00.23	00.05
50	120	14	14	106	04.00	00.07	00.09
75	51	10	10	41	04.00	00.03	00.10
100	112	9	9	103	04.00	00.07	00.12
150	15	10	10	5	04.00	00.00	00.13

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/ 94/63	13/ 7/63	0805 H	25 50 S	110 00 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 15	9.59 MILLION	15 CPM

DEPTH M	LIGHT CPM	DARK CPM	DARK USED CPM	NETT CPM	INC. PER. HOURS	PRODUCTION A MG.C/HR./CU.M.	PRODUCTION B G.C/DAY/SQ.M.
0	1085	17	17	1068	04.00	00.68	C0.00
25	1409	63	63	1346	04.00	00.86	C0.19
50	1168	36	36	1132	04.00	00.72	00.39
75	621	27	27	594	04.00	00.38	00.53
100	67	23	23	44	04.00	00.03	C0.58
150	14	12	12	2	04.00	00.00	C0.59

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/ 94/63	13/ 7/63	1235 H	25 50 S	110 CO E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
SIMULATED IN SITU 7	NOON - SUNSET	NO. 15	9.59 MILLION	15 CPM

DEPTH M	LIGHT CPM	DARK CPM	DARK USED CPM	NETT CPM	INC. PER. DAYS	PRODUCTION A MG.C/DAY/CU.M.	PRODUCTION B G.C/DAY/SQ.M.
0	453	31	31	422	00.50	02.16	CO.00
10	741	30	30	711	00.50	03.64	00.03
18	700	18	18	682	00.50	03.49	00.06
33	539	13	13	526	00.50	02.69	CO.10
48	346	22	22	324	00.50	01.66	CO.14
65	181	25	25	156	00.50	00.80	CO.16

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/ 95/63	13/ 7/63	2015 H	24 30 S	110 00 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 15	9.59 MILLION	15 CPM

DEPTH M	LIGHT CPM	DARK CPM	DARK USED CPM	NETT CPM	INC. PER. HOURS	PRODUCTION A MG.C/HR./CU.M.	PRODUCTION B G.C/DAY/SQ.M.
0	464	21	21	443	04.00	00.28	00.00
25	618	30	30	588	04.00	00.38	00.08
50	553	16	16	537	04.00	00.34	00.17
75	231	27	27	204	04.00	00.13	00.23
100	26	10	10	16	04.00	00.01	00.25
150	13	39	39	- 26 G	04.00	00.00	00.25

G NEGATIVE VALUE, ASSUMED ZERO

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/ 96/63	14/ 7/63	0800 H	23 00 S	110 00 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 15	9.59 MILLION	15 CPM

DEPTH M	LIGHT CPM	DARK CPM	DARK USED CPM	NETT CPM	INC. PER. HOURS	PRODUCTION A MG.C/HR./CU.M.	PRODUCTION B G.C/DAY/SQ.M.
0	1231	13	13	1218	04.00	00.78	C0.00
25	1524	26	26	1498	04.00	00.96	C0.22
50	126	5	5	121	04.00	00.08	00.35
75	109	53 B	12 E	97	04.00	00.06	00.37
100	13	12	12	1	04.00	00.00	00.37
150	9	8	8	1	04.00	00.00	C0.37

B ABERRANT VALUE, NOT USED
E MEAN NON-ABERRANT DARK USED

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/ 96/63	14/ 7/63	1230 H	23 00 S	110 00 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
SIMULATED IN SITU 7	NOON - SUNSET	NO. 15	9.59 MILLION	15 CPM

DEPTH M	LIGHT CPM	DARK CPM	DARK USED CPM	NETT CPM	INC. PER. DAYS	PRODUCTION A MG.C/DAY/CU.M.	PRODUCTION B G.C/DAY/SQ.M.
0	407	25	25	382	00.50	01.96	00.00
16	801	23	23	778	00.50	03.98	00.05
30	870	13	13	857	00.50	04.39	00.11
40	198	6	6	192	00.50	00.98	00.13
55	112	44	44	68	00.50	00.35	00.14
60	95	16	16	79	00.50	00.40	00.14

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/ 97/63	14/ 7/63	2030 H	21 30 S	110 00 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 15	9.59 MILLION	15 CPM

DEPTH M	LIGHT CPM	DARK CPM	DARK USED CPM	NETT CPM	INC. PER. HOURS	PRODUCTION A MG.C/HR./CU.M.	PRODUCTION B G.C/DAY/SQ.M.
0	386	19	19	367	04.00	00.23	00.00
25	396	18	18	378	04.00	00.24	00.06
50	327	16	16	311	04.00	00.20	00.11
75	387	12	12	375	04.00	00.24	00.17
100	19	4	4	15	04.00	00.01	00.20
150	15	6	6	9	04.00	00.01	00.21

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/ 98/63	15/ 7/63	0800 H	20 00 S	110 00 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 15	9.59 MILLION	15 CPM

DEPTH M	LIGHT CPM	DARK CPM	DARK USED CPM	NETT CPM	INC. PER. HOURS	PRODUCTION A MG.C/HR./CU.M.	PRODUCTION B G.C/DAY/SQ.M.
0	553	12	12	541	04.00	00.35	00.00
25	622	14	14	608	04.00	00.39	00.09
50	623	5	5	618	04.00	00.40	00.19
75	28	10	10	18	04.00	00.01	00.24
100	7	7	7	0	04.00	00.00	00.24
150	9	17	17	- 8 G	04.00	00.00	00.24

G NEGATIVE VALUE, ASSUMED ZERO

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/ 98/63	15/ 7/63	1215 H	20 00 S	110 00 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
SIMULATED IN SITU 7	NOON - SUNSET	NO. 15	9.59 MILLION	15 CPM

DEPTH M	LIGHT CPM	DARK CPM	DARK USED CPM	NETT CPM	INC. PER. DAYS	PRODUCTION A MG.C/DAY/CU.M.	PRODUCTION B G.C/DAY/SQ.M.
0	645	40	40	605	00.50	03.10	00.00
18	561	22	22	539	00.50	02.76	C0.05
31	524	13	13	511	00.50	02.62	C0.09
41	405	12	12	393	00.50	02.01	00.11
54	266	6	6	260	00.50	01.33	00.13
62	167	8	8	159	00.50	00.81	C0.14

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/ 99/63	15/ 7/63	2000 H	18 .30 S	110 00 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 15	9.59 MILLION	15 CPM

DEPTH M	LIGHT CPM	DARK CPM	DARK USED CPM	NETT CPM	INC. PER. HOURS	PRODUCTION A MG.C/HR./CU.M.	PRODUCTION B G.C/DAY/SQ.M.
0	150	47	47	103	04.00	00.07	C0.00
25	167	43	43	124	04.00	00.08	C0.C2
50	349	18	18	331	04.00	00.21	C0.06
75	225	27	27	198	04.00	00.13	C0.10
100	29	8	8	21	04.00	00.01	00.12
150	68	5	5	63	04.00	00.04	C0.13

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/100/63	16/ 7/63	0800 H	17 00 S	110 00 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 15	9.59 MILLION	15 CPM

DEPTH M	LIGHT CPM	DARK CPM	DARK USED CPM	NETT CPM	INC. PER. HOURS	PRODUCTION A MG.C/HR./CU.M.	PRODUCTION B G.C/DAY/SQ.M.
0	611	28	28	583	04.00	00.37	00.00
25	700	25	25	675	04.00	00.43	00.10
50	543	24	24	519	04.00	00.33	00.20
75	51	20	20	31	04.00	00.02	00.24
100	19	6	6	13	04.00	00.01	00.24
150	16	7	7	9	04.00	00.01	C0.25

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/100/63	16/ 7/63	1220 H	17 00 S	110 00 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
SIMULATED IN SITU 7	NOON - SUNSET	NO. 15	9.59 MILLION	15 CPM

DEPTH M	LIGHT CPM	DARK CPM	DARK USED CPM	NETT CPM	INC. PER. DAYS	PRODUCTION A MG.C/DAY/CU.M.	PRODUCTION B G.C/DAY/SQ.M.
0	492	42	42	450	00.50	02.30	00.00
18	537	34	34	503	00.50	02.57	00.04
38	514	42	42	472	00.50	02.42	00.09
46	412	21	21	391	00.50	02.00	00.11
61	366	17	17	349	00.50	01.79	00.14
70	321	20	20	301	00.50	01.54	00.15

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/101/63	16/ 7/63	2015 H	15 30 S	110 00 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 15	9.59 MILLION	15 CPM

DEPTH M	LIGHT CPM	DARK CPM	DARK USED CPM	NETT CPM	INC. PER. HOURS	PRODUCTION A MG.C/HR./CU.M.	PRODUCTION B G.C/DAY/SQ.M.
0	108	31	31	77	04.00	00.05	00.00
25	93	30	30	63	04.00	00.04	00.01
50	125	26	26	99	04.00	00.06	00.02
75	126	21	21	105	04.00	00.07	00.04
100	19	12	12	7	04.00	00.00	00.05
150	20	5	5	15	04.00	00.01	00.05

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/102/63	17/ 7/63	0800 H	14 00 S	110 00 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 15	9.59 MILLION	15 CPM

DEPTH M	LIGHT CPM	DARK CPM	DARK USED CPM	NETT CPM	INC. PER. HOURS	PRODUCTION A MG.C/HR./CU.M.	PRODUCTION B G.C/DAY/SQ.M.
0	558	15	15	543	04.00	00.35	00.00
25	600	16	16	584	04.00	00.37	00.09
50	603	10	10	593	04.00	00.38	00.18
75	239	21	21	218	04.00	00.14	00.25
100	53	6	6	47	04.00	00.03	00.27
150	7	9	9	- 2 G	04.00	00.00	00.28

G NEGATIVE VALUE, ASSUMED ZERO

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/102/63	17/ 7/63	1230 H	14 00 S	110 00 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
SIMULATED IN SITU 7	NOON - SUNSET	NO. 15	9.59 MILLION	15 CPM

DEPTH M	LIGHT CPM	DARK CPM	DARK USED CPM	NETT CPM	INC. PER. DAYS	PRODUCTION A MG.C/DAY/CU.M.	PRODUCTION B G.C/DAY/SQ.M.
0	351	116 B	27 E	324	00.50	01.66	00.00
18	345	38	38	307	00.50	01.57	00.03
38	436	29	29	407	00.50	02.08	00.07
46	277	29	29	248	00.50	01.27	00.08
61	166	21	21	145	00.50	00.74	00.09
70	188	22	22	166	00.50	00.85	00.10

B ABERRANT VALUE, NOT USED
E MEAN NON-ABERRANT DARK USED

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/103/63	17/ 7/63	2010 H	12 30 S	110 00 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 15	9.59 MILLION	15 CPM

DEPTH M	LIGHT CPM	DARK CPM	DARK USED CPM	NETT CPM	INC. PER. HOURS	PRODUCTION A MG.C/HR./CU.M.	PRODUCTION B G.C/DAY/SQ.M.
0	287	23	23	264	04.00	00.17	00.00
25	289	32	32	257	04.00	00.16	00.04
50	386	25	25	361	04.00	00.23	00.09
75	546	12	12	534	04.00	00.34	00.16
100	490	7	7	483	04.00	00.31	00.24
150	22	6	6	16	04.00	00.01	00.32

STATION	DATE	TIME	LATITUDE	LONGITUDE
OM 3/104/63	18/ 7/63	0800 H	11 00 S	110 00 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 15	9.59 MILLION	15 CPM

DEPTH M	LIGHT CPM	DARK CPM	DARK USED CPM	NETT CPM	INC. PER. HOURS	PRODUCTION A MG.C/HR./CU.M.	PRODUCTION B G.C/DAY/SQ.M.
0	1427	123	123	1304	04.00	00.83	C0.00
25	1304	14	14	1290	04.00	00.83	00.21
50	1771	4	4	1767	04.00	01.13	00.45
75	1536	16	16	1520	04.00	00.97	C0.72
100	21	14	14	7	04.00	00.00	C0.84
150	5	30	30	- 25 G	04.00	00.00	00.84

G NEGATIVE VALUE, ASSUMED ZERO

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/104/63	18/ 7/63	1220 H	11 00 S	110 00 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
SIMULATED IN SITU 7	NOON - SUNSET	NO. 15	9.59 MILLION	15 CPM

DEPTH M	LIGHT CPM	DARK CPM	DARK USED CPM	NETT CPM	INC. PER. DAYS	PRODUCTION A MG.C/DAY/CU.M.	PRODUCTION B G.C/DAY/SQ.M.
0	1392	91	91	1301	00.50	06.66	00.00
17	2055	23	23	2032	00.50	10.40	00.15
34	1507	34	34	1473	00.50	07.54	00.30
43	1081	40	40	1041	00.50	05.33	00.36
58	633	51	51	582	00.50	02.98	00.42
65	1	76 B	47 E	46 G	00.50	00.00	00.43

B ABERRANT VALUE, NOT USED
E MEAN NON-ABERRANT DARK USED
G NEGATIVE VALUE, ASSUMED ZERO

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/105/63	18/ 7/63	1945 H	09 30 S	110 00 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 15	9.59 MILLION	15 CPM

DEPTH M	LIGHT CPM	DARK CPM	DARK USED CPM	NETT CPM	INC. PER. HOURS	PRODUCTION A MG.C/HR./CU.M.	PRODUCTION B G.C/DAY/SQ.M.
0	558	55	55	503	04.00	00.32	C0.00
25	907	58	58	849	04.00	00.54	00.11
50	611	26	26	585	04.00	00.37	00.22
75	171	40	40	131	04.00	00.08	C0.28
100	40	23	23	17	04.00	00.01	C0.29
150	14	10	10	4	04.00	00.00	00.29

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/106/63	19/ 7/63	2155 H	09 00 S	105 00 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 15	9.59 MILLION	15 CPM

DEPTH M	LIGHT CPM	DARK CPM	DARK USED CPM	NETT CPM	INC. PER. HOURS	PRODUCTION A MG.C/HR./CU.M.	PRODUCTION B G.C/DAY/SQ.M.
0	382	49	49	333	04.00	00.21	00.00
25	436	35	35	401	04.00	00.26	00.06
50	195	20	20	175	04.00	00.11	00.11
75	21	12	12	9	04.00	00.01	00.12
100	19	24	24	- 5 G	04.00	00.00	00.12
150	11	12	12	- 1 G	04.00	00.00	00.12

G NEGATIVE VALUE, ASSUMED ZERO

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/107/63	20/ 7/63	1040 H	09 02 S	106 54 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 15	9.59 MILLION	15 CPM

DEPTH M	LIGHT CPM	DARK CPM	DARK USED CPM	NETT CPM	INC. PER. HOURS	PRODUCTION A MG.C/HR./CU.M.	PRODUCTION B G.C/DAY/SQ.M.
0	2901	1	1	2900	04.00	01.86	00.00
25	2650	4	4	2646	04.00	01.69	00.44
50	638	15	15	623	04.00	00.40	00.71
75	53	9	9	44	04.00	00.03	00.76
100	34	1	1	33	04.00	00.02	00.77
150	25	1	1	24	04.00	00.02	00.78

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/107/63	20/ 7/63	1230 H	09 02 S	106 54 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
SIMULATED IN SITU 7	NOON - SUNSET	NO. 15	9.59 MILLION	15 CPM

DEPTH M	LIGHT CPM	DARK CPM	DARK USED CPM.	NETT CPM	INC. PER. DAYS	PRODUCTION A MG.C/DAY/CU.M.	PRODUCTION B G.C/DAY/SQ.M.
0	1224	64	64	1160	00.50	05.94	00.00
18	2475	46	46	2429	00.50	12.43	00.17
27	1477	33	33	1444	00.50	07.39	00.25
37	1093	43	43	1050	00.50	05.37	00.32
46	386	75 B	46 E	340	00.50	01.74	00.35
52	352	186 B	46 E	306	00.50	01.57	00.36

B ABERRANT VALUE, NOT USED
E MEAN NON-ABERRANT DARK USED

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/107/63	20/ 7/63	1235 H	09 02 S	106 54 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
IN SITU 5	NOON - SUNSET	NO. 15	9.59 MILLION	15 CPM

DEPTH M	LIGHT CPM	DARK CPM	DARK USED CPM	NETT CPM	INC. PER. DAYS	PRODUCTION A MG.C/DAY/CU.M.	PRODUCTION B G.C/DAY/SQ.M.
0	652	64	64	588	00.50	03.01	00.00
18	2038	46	46	1992	00.50	10.20	00.12
27	1692	33	33	1659	00.50	08.49	00.20
37	729	43	43	686	00.50	03.51	00.26
46	173	75 B	46 E	127	00.50	00.65	00.28
52	217	186 B	46 E	171	00.50	00.88	00.29

B ABERRANT VALUE, NOT USED
E MEAN NON-ABERRANT DARK USED

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/108/63	2/ 8/63	0205 H	09 00 S	105 00 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 15	9.59 MILLION	15 CPM

DEPTH M	LIGHT CPM	DARK CPM	DARK USED CPM	NETT CPM	INC. PER. HOURS	PRODUCTION A MG.C/HR./CU.M.	PRODUCTION B G.C/DAY/SQ.M.
0	610	38	38	572	04.00	00.37	C0.00
25	686	26	26	660	04.00	00.42	00.10
50	529	16	16	513	04.00	00.33	00.19
75	212	16	16	196	04.00	00.13	C0.25
100	30	13	13	17	04.00	00.01	C0.27
150	44	18	18	26	04.00	00.02	C0.28

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/109/63	3/ 8/63	1000 H	09 30 S	110 00 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 15	9.59 MILLION	15 CPM

DEPTH M	LIGHT CPM	DARK CPM	DARK USED CPM	NETT CPM	INC. PER. HOURS	PRODUCTION A MG.C/HR./CU.M.	PRODUCTION B G.C/DAY/SQ.M.
0	4202	47	47	4155	04.00	02.66	C0.00
25	2201	26	26	2175	04.00	01.39	00.51
50	180	9	9	171	04.00	00.11	00.69
75	102	20	20	82	04.00	00.05	C0.71
100	23	9	9	14	04.00	00.01	C0.72
150	38	1	0	38	04.00	00.02	C0.73

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/109/63	3/ 8/63	1255 H	09 30 S	110 00 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
SIMULATED IN SITU 7	NOON - SUNSET	NO. 15	9.59 MILLION	15 CPM

DEPTH	LIGHT	DARK	DARK USED	NETT	INC. PER.	PRODUCTION A	PRODUCTION B
M	CPM	CPM	CPM	CPM	DAYS	MG.C/DAY/CU.M.	G.C/DAY/SQ.M.
0	2342	44	44	2298	00.50	11.76	C0.00
12	2922	59	59	2863	00.50	14.66	C0.16
21	2546	32	32	2514	00.50	12.87	00.28
27	1806	35	35	1771	00.50	09.07	C0.35
34	688	36	36	652	00.50	03.34	C0.39
40	274	26	26	248	00.50	01.27	C0.41

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/110/63	3/ 8/63	2030 H	11 00 S	110 00 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 15	9.59 MILLION	15 CPM

DEPTH M	LIGHT CPM	DARK CPM	DARK USED CPM	NETT CPM	INC. PER. HOURS	PRODUCTION A MG.C/HR./CU.M.	PRODUCTION B G.C/DAY/SQ.M.
0	647	39	39	608	04.00	00.39	00.00
25	686	41	41	645	04.00	00.41	00.10
50	633	22	22	611	04.00	00.39	00.20
75	117	8	8	109	04.00	00.07	00.26
100	95	11	11	84	04.00	00.05	00.27
150	25	13	13	12	04.00	00.01	C0.29

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/111/63	4/ 8/63	0815 H	12 30 S	110 00 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 15	9.59 MILLION	15 CPM

DEPTH M	LIGHT CPM	DARK CPM	DARK USED CPM	NETT CPM	INC. PER. HOURS	PRODUCTION A MG.C/HR./CU.M.	PRODUCTION B G.C/DAY/SQ.M.
0	1548	13	13	1535	04.00	00.98	C0.00
25	2714	12	12	2702	04.00	01.73	C0.34
50	1355	51	51	1304	04.00	00.83	00.66
75	511	13	13	498	04.00	00.32	00.80
100	186	17	17	169	04.00	00.11	C0.86
150	30	13	13	17	04.00	00.01	C0.89

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/111/63	4/ 8/63	1245 H	12 30 S	110 00 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
SIMULATED IN SITU 7	NOON - SUNSET	NO. 15	9.59 MILLION	15 CPM

DEPTH M	LIGHT CPM	DARK CPM	DARK USED CPM	NETT CPM	INC. PER. DAYS	PRODUCTION A MG.C/DAY/CU.M.	PRODUCTION B G.C/DAY/SQ.M.
0	2484	31	31	2453	00.50	12.56	CC.00
13	2994	46	46	2948	00.50	15.09	00.18
26	2563	34	34	2529	00.50	12.95	00.36
32	1518	22	22	1496	00.50	07.66	00.42
38	712	29	29	683	00.50	03.50	00.46
42	429	29	29	400	00.50	02.05	00.47

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/112/63	4/ 8/63	2000 H	14 00 S	11C 00 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 15	9.59 MILLION	15 CPM

DEPTH M	LIGHT CPM	DARK CPM	DARK USED CPM	NETT CPM	INC. PER. HOURS	PRODUCTION A MG.C/HR./CU.M.	PRODUCTION B G.C/DAY/SQ.M.
0	108	34	34	74	04.00	00.05	CC.CO
25	223	57 B	28 E	195	04.00	00.12	CO.02
50	151	66 B	28 E	123	04.00	00.08	00.05
75	595	34	34	561	04.00	00.36	CO.10
100	295	60 B	28 E	267	04.00	00.17	CC.17
150	15	16	16	- 1 G	04.00	00.00	CO.21

B ABERRANT VALUE, NOT USED
E MEAN NON-ABERRANT DARK USED
G NEGATIVE VALUE, ASSUMED ZERO

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/113/63	5/ 8/63	0800 H	15 30 S	110 00 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 15	9.59 MILLION	15 CPM

DEPTH M	LIGHT CPM	DARK CPM	DARK USED CPM	NETT CPM	INC. PER. HOURS	PRODUCTION A MG.C/HR./CU.M.	PRODUCTION B G.C/DAY/SQ.M.
0	616	24	24	592	04.00	00.38	00.00
25	1065	34	34	1031	04.00	00.66	00.13
50	855	60	60	795	04.00	00.51	00.28
75	850	34	34	816	04.00	00.52	00.41
100	33	38	38	- 5 G	04.00	00.00	00.47
150	22	25	25	- 3 G	04.00	00.00	00.47

G NEGATIVE VALUE, ASSUMED ZERO

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/113/63	5/ 8/63	1230 H	15 30 S	110 00 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
SIMULATED IN SITU 7	NOON - SUNSET	NO. 15	9.59 MILLION	15 CPM

DEPTH M	LIGHT CPM	DARK CPM	DARK USED CPM	NETT CPM	INC. PER. DAYS	PRODUCTION A MG.C/DAY/CU.M.	PRODUCTION B G.C/DAY/SQ.M.
0	1482	29	29	1453	00.50	07.44	C0.00
19	1529	28	28	1501	00.50	07.68	C0.14
34	1190	32	32	1158	00.50	05.93	C0.25
42	791	26	26	765	00.50	03.92	00.29
50	433	27	27	406	00.50	02.08	C0.31
58	297	29	29	268	00.50	01.37	C0.32

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/114/63	5/ 8/63	1945 H	17 00 S	110 00 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 15	9.59 MILLION	15 CPM

DEPTH M	LIGHT CPM	DARK CPM	DARK USED CPM	NETT CPM	INC. PER. HOURS	PRODUCTION A MG.C/HR./CU.M.	PRODUCTION B G.C/DAY/SQ.M.
0	84	37	37	47	04.00	00.03	00.00
25	137	39	39	98	04.00	00.06	00.01
50	148	36	36	112	04.00	00.07	00.03
75	299	24	24	275	04.00	00.18	00.06
100	47	20	20	27	04.00	00.02	00.08
150	9	8	8	1	04.00	00.00	00.09

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/115/63	6/ 8/63	0810 H	18 30 S	110 00 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 15	9.59 MILLION	15 CPM

DEPTH M	LIGHT CPM	DARK CPM	DARK USED CPM	NETT CPM	INC. PER. HOURS	PRODUCTION A MG.C/HR./CU.M.	PRODUCTION B G.C/DAY/SQ.M.
0	459	19	19	440	04.00	00.28	00.00
25	658	25	25	633	04.00	00.41	00.09
50	566	20	20	546	04.00	00.35	00.18
75	567	7	7	560	04.00	00.36	00.27
100	51	9	9	42	04.00	00.03	00.32
150	14	6	6	8	04.00	00.01	00.33

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/115/63	6/ 8/63	1225 H	18 30 S	110 00 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
SIMULATED IN SITU 7	NOON - SUNSET	NO. 15	9.59 MILLION	15 CPM

DEPTH M	LIGHT CPM	DARK CPM	DARK USED CPM	NETT CPM	INC. PER. DAYS	PRODUCTION A MG.C/DAY/CU.M.	PRODUCTION B G.C/DAY/SQ.M.
0	700	24	24	676	00.50	03.46	00.00
23	631	32	32	599	00.50	03.07	00.08
39	440	37	37	403	00.50	02.06	00.12
55	333	40	40	293	00.50	01.50	00.14
68	195	30	30	165	00.50	00.84	00.16
75	155	29	29	126	00.50	00.64	C0.17

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/116/63	6/ 8/63	2000 H	20 00 S	110 00 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 15	9.59 MILLION	15 CPM

DEPTH M	LIGHT CPM	DARK CPM	DARK USED CPM	NETT CPM	INC. PER. HOURS	PRODUCTION A MG.C/HR./CU.M.	PRODUCTION B G.C/DAY/SQ.M.
0	122	26	26	96	04.00	00.06	00.00
25	166	36	36	130	04.00	00.08	00.02
50	247	17	17	230	04.00	00.15	00.05
75	43	10	10	33	04.00	00.02	00.07
100	16	10	10	6	04.00	00.00	00.07
150	9	7	7	2	04.00	00.00	00.07

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/117/63	7/ 8/63	0810 H	21 30 S	110 00 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 15	9.59 MILLION	15 CPM

DEPTH M	LIGHT CPM	DARK CPM	DARK USED CPM	NETT CPM	INC. PER. HOURS	PRODUCTION A MG.C/HR./CU.M.	PRODUCTION B G.C/DAY/SQ.M.
0	664	34	34	630	04.00	00.40	00.00
25	764	21	21	743	04.00	00.48	CC.11
50	841	58	58	783	04.00	00.50	C0.23
75	376	15	15	361	04.00	00.23	00.32
100	27	13	13	14	04.00	00.01	00.35
150	9	9	9	0	04.00	00.00	CC.36

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/117/63	7/ 8/63	1245 H	21 30 S	110 00 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
SIMULATED IN SITU 7	NOON - SUNSET	NO. 15	9.59 MILLION	15 CPM

DEPTH	LIGHT	DARK	DARK USED	NETT	INC. PER.	PRODUCTION A	PRODUCTION B
M	CPM	CPM	CPM	CPM	DAYS	MG.C/DAY/CU.M.	G.C/DAY/SQ.M.
0	684	23	23	661	00.50	03.38	00.00
18	578	27	27	551	00.50	02.82	00.06
38	456	21	21	435	00.50	02.23	00.11
51	392	21	21	371	00.50	01.90	00.13
61	236	29	29	207	00.50	01.06	00.15
73	453	15	15	438	00.50	02.24	00.17

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/118/63	7/ 8/63	2010 H	23 00 S	110 00 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 15	9.59 MILLION	15 CPM

DEPTH M	LIGHT CPM	DARK CPM	DARK USED CPM	NETT CPM		INC. PER. HOURS	PRODUCTION A MG.C/HR./CU.M.	PRODUCTION B G.C/DAY/SQ.M.
0	417	25	25	392		04.00	00.25	00.00
25	360	27	27	333		04.00	00.21	00.06
50	506	26	26	480		04.00	00.31	00.12
75	31	13	13	18		04.00	00.01	00.16
100	12	15	15	- 3	G	04.00	00.00	00.16
150	8	3	3	5		04.00	00.00	00.16

G NEGATIVE VALUE, ASSUMED ZERO

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/119/63	8/ 8/63	0805 H	24 30 S	110 01 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 15	9.59 MILLION	15 CPM

DEPTH M	LIGHT CPM	DARK CPM	DARK USED CPM	NETT CPM	INC. PER. HOURS	PRODUCTION A MG.C/HR./CU.M.	PRODUCTION B G.C/DAY/SQ.M.
0	477	14	14	463	04.00	00.30	C0.C0
25	617	27	27	590	04.00	00.38	C0.09
50	753	19	19	734	04.00	00.47	C0.19
75	83	16	16	67	04.00	00.04	00.26
100	14	20	20	- 6 G	04.00	00.00	CC.26
150	14	8	8	6	04.00	00.00	C0.26

G NEGATIVE VALUE, ASSUMED ZERO

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/119/63	8/ 8/63	1225 H	24 30 S	110 01 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
SIMULATED IN SITU 7	NOON - SUNSET	NO. 15	9.59 MILLION	15 CPM

DEPTH M	LIGHT CPM	DARK CPM	DARK USED CPM	NETT CPM	INC. PER. DAYS	PRODUCTION A MG.C/DAY/CU.M.	PRODUCTION B G.C/DAY/SQ.M.
0	614	16	16	598	00.50	03.06	00.00
21	509	29	29	480	00.50	02.46	00.06
44	388	14	14	374	00.50	01.91	00.11
53	693	13	13	680	00.50	03.48	00.13
60	192	18	18	174	00.50	00.89	00.15
70	118	26	26	92	00.50	00.47	00.15

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/120/63	8/ 8/63	1950 H	26 00 S	11C 00 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 15	9.59 MILLION	15 CPM

DEPTH M	LIGHT CPM	DARK CPM	DARK USED CPM	NETT CPM	INC. PER. HOURS	PRODUCTION A MG.C/HR./CU.M.	PRODUCTION B G.C/DAY/SQ.M.
0	395	23	23	372	04.00	00.24	C0.00
25	496	20	20	476	04.00	00.30	00.07
50	403	19	19	384	04.00	00.25	C0.14
75	163	12	12	151	04.00	00.10	C0.18
100	43	8	8	35	04.00	00.02	00.20
150	18	6	6	12	04.00	00.01	C0.20

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/121/63	9/ 8/63	0800 H	27 30 S	110 00 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 15	9.59 MILLION	19 CPM

DEPTH M	LIGHT CPM	DARK CPM	DARK USED CPM	NETT CPM	INC. PER. HOURS	PRODUCTION A MG.C/HR./CU.M.	PRODUCTION B G.C/DAY/SQ.M.
0	651	30	30	621	04.00	00.40	00.00
25	873	12	12	861	04.00	00.55	00.12
50	889	14	14	875	04.00	00.56	00.26
75	335	9	9	326	04.00	00.21	00.35
100	48	29	29	19	04.00	00.01	00.38
150	20	30	30	- 10 G	04.00	00.00	00.38

G NEGATIVE VALUE, ASSUMED ZERO

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/121/63	9/ 8/63	1225 H	27 30 S	110 00 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
SIMULATED IN SITU 7	NOON - SUNSET	NO. 15	9.59 MILLION	19 CPM

DEPTH M	LIGHT CPM	DARK CPM	DARK USED CPM	NETT CPM	INC. PER. DAYS	PRODUCTION A MG.C/DAY/CU.M.	PRODUCTION B G.C/DAY/SQ.M.
0	612	16	16	596	00.50	03.05	00.00
18	958	24	24	934	00.50	04.78	00.07
33	495	33	33	462	00.50	02.36	00.12
42	664	24	24	640	00.50	03.28	00.15
53	295	17	17	278	00.50	01.42	00.18
63	181	12	12	169	00.50	00.87	00.19

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/122/63	9/ 8/63	1945 H	29 00 S	110 00 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGROUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 15	9.59 MILLION	19 CPM

DEPTH M	LIGHT CPM	DARK CPM		DARK USED CPM		NETT CPM	INC. PER. HOURS	PRODUCTION A MG.C/HR./CU.M.	PRODUCTION B G.C/DAY/SQ.M.
0	450	43		43		407	04.00	00.26	00.00
25	369	70	B	21	E	348	04.00	00.22	00.06
50	433	25		25		408	04.00	00.26	00.12
75	352	7		7		345	04.00	00.22	00.18
100	35	18		18		17	04.00	00.01	00.21
150	33	16		16		17	04.00	00.01	00.21

B ABERRANT VALUE, NOT USED
E MEAN NON-ABERRANT DARK USED

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/123/63	10/ 8/63	0930 H	30 30 S	110 00 E

INCUBATION METHOD	PERIOD	14C STOCK	ACTIVITY CPM	BACKGRCUND
ARTIFICIAL CONSTANT LIGHT 0	4 HOURS	NO. 15	9.59 MILLION	19 CPM

DEPTH M	LIGHT CPM	DARK CPM	DARK USED CPM	NETT CPM	INC. PER. HOURS	PRODUCTION A MG.C/HR./CU.M.	PRODUCTION B G.C/DAY/SQ.M.
0	893	9	9	884	04.00	00.57	C0.00
25	999	10	10	989	04.00	00.63	C0.15
50	778	4	4	774	04.00	00.50	C0.29
75	412	3	3	409	04.00	00.26	C0.39
100	84	5	5	79	04.00	00.05	C0.43
150	151	8	8	143	04.00	00.09	C0.46

DATA

PART 3

PIGMENTS

EXPLANATION OF HEADINGS

Part 3	Pigments
STATION	Gives the station identification, for example, Dm3/89/63 signifies the 89th station worked from Diamantina in 1963, on her 3rd cruise for that year
DATE	Given as day/month/year
TIME	Given in Zone Time (Table 2, p. 16)
LATITUDE LONGITUDE	Given in degrees and minutes
DEPTH	Actual sampling depth given in metres
CHLOROPHYLL A B C	A and B given in mg/m^3 C given in $MSPU/m^3$
ASTACIN NON-ASTACIN	Given in $MSPU/m^3$

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/ 89/63	10/ 7/63	1015 H	32 00 S	111 50 E

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.34	0.35	1.77	0.31	- 0.14
25	0.33	0.06	0.78	0.02	0.07
50	0.28	0.20	1.03	0.16	- 0.03

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/ 90/63	11/ 7/63	0800 H	31 57 S	110 00 E

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.35	0.32	1.07	0.18	- 0.05
25	0.24	0.01	- 0.09	0.05	0.09
50	0.40	0.31	2.21	0.32	- 0.14
75	0.29	0.22	1.71	0.25	- 0.12
100	0.15	0.12	0.77	0.13	- 0.04
150	0.21	0.16	1.19	0.19	- 0.08

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/ 91/63	11/ 7/63	2030 H	30 30 S	110 00 E

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.22	0.11	0.44	0.05	0.02
25	0.13	- 0.01	0.55	0.12	0.00
50	0.12	0.00	- 0.11	0.06	0.02
75	0.19	0.05	0.32	0.03	0.04
100	0.23	0.05	0.54	0.03	0.03
150	0.04	0.03	0.28	0.03	0.00

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/ 92/63	12/ 7/63	0730 H	29 00 S	110 00 E

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.25	0.05	0.47	0.05	0.01
25	0.10	- 0.02	- 0.07	0.05	0.03
50	0.20	0.05	0.35	0.07	0.00
75	0.13	0.03	0.36	0.07	0.00
100	0.22	0.10	0.57	0.02	0.05
150	0.08	0.06	0.55	0.04	0.00

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/ 93/63	12/ 7/63	1945 H	27 30 S	110 00 E

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.06	0.02	- 0.08	0.07	0.01
25	0.22	0.06	0.49	0.08	0.01
50	0.34	0.15	1.15	0.04	0.05
75	0.11	0.09	0.49	0.04	0.00
100	0.15	0.08	0.54	0.04	0.02
150	0.03	0.02	0.53	0.08	- 0.03

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/ 94/63	13/ 7/63	0745 H	25 50 S	110 00 E

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.31	0.09	1.09	0.06	0.01
25	0.29	0.08	0.57	0.06	0.06
50	0.41	0.15	1.26	0.03	0.08
75	0.17	0.07	0.67	0.06	0.02
100	0.15	0.06	0.44	0.06	0.01
150	0.05	0.04	0.48	0.07	- 0.02

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/ 95/63	13/ 7/63	1945 H	24 30 S	110 00 E

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.34	0.03	0.75	0.05	0.02
25	0.32	0.05	0.89	0.15	~ 0.08
50	0.27	0.12	1.32	0.14	~ 0.06
75	0.24	0.21	1.10	0.16	~ 0.06
100	0.17	0.18	1.03	0.15	~ 0.07
150	0.22	0.12	0.79	0.07	0.04

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/ 96/63	14/ 7/63	0730 H	23 00 S	110 00 E

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.50	0.22	1.42	0.06	0.01
25	0.33	0.12	0.83	0.11	0.00
50	0.23	0.16	0.44	0.03	0.08
75	0.16	0.05	0.48	0.04	0.04
100	0.17	0.10	0.45	0.06	0.03
150	0.00	0.00	0.00	0.10	0.00

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/ 97/63	14/ 7/63	2015 H	21 30 S	110 00 E

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.24	0.06	0.33	0.05	0.07
25	0.31	0.11	0.83	0.10	0.01
50	0.28	0.07	0.64	0.06	0.03
75	0.21	0.04	0.79	0.04	0.07
100	0.22	0.06	0.31	0.06	0.02
150	0.07	0.00	0.42	0.07	- 0.03

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/ 98/63	15/ 7/63	0730 H	20 00 S	110 00 E

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.14	0.00	0.45	0.08	- 0.01
25	0.16	0.07	0.51	0.04	0.00
50	0.26	0.13	0.59	0.09	0.02
75	0.12	0.04	0.17	0.08	0.04
100	0.11	0.13	0.31	0.03	0.04
150	0.05	0.05	0.29	0.05	0.00

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/ 99/63	15/ 7/63	2000 H	18 30 S	110 00 E

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.13	0.03	0.58	0.06	0.00
25	0.26	- 0.06	- 0.20	0.06	0.04
50	0.20	0.05	0.35	0.05	0.05
75	0.29	0.15	0.53	0.05	0.08
100	0.38	0.23	1.16	0.11	0.04
150	0.20	0.15	1.04	0.15	- 0.05

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/100/63	16/ 7/63	0718 H	17 00 S	110 00 E

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.13	0.06	0.36	0.03	0.01
25	0.00	0.00	0.00	0.05	0.00
50	0.11	0.08	0.42	0.05	0.00
75	0.21	0.19	0.66	0.09	- 0.03
100	0.09	0.13	0.29	0.04	0.02
150	0.00	0.00	0.00	0.06	- 0.01

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/101/63	16/ 7/63	2015 H	15 30 S	110 00 E

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.19	0.18	1.10	0.11	- 0.03
25	0.10	0.09	0.57	0.07	0.00
50	0.02	0.00	0.00	0.16	- 0.07
75	0.19	0.12	0.63	0.07	0.01
100	0.11	0.08	0.59	0.06	0.00
150	0.10	0.10	0.61	0.09	- 0.02

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/102/63	17/ 7/63	0755 H	14 00 S	110 00 E

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.00	0.00	0.00	0.07	- 0.01
25	0.12	0.09	0.60	0.14	- 0.06
50	0.00	0.00	0.00	0.10	0.01
75	0.18	0.11	0.74	0.12	- 0.02
100	0.27	0.11	1.02	0.11	0.00
150	0.17	0.14	1.00	0.21	0.05

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/103/63	17/ 7/63	1955 H	12 30 S	110 00 E

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.04	0.00	- 0.02	0.09	0.02
25	0.06	- 0.01	- 0.03	0.10	0.02
50	0.16	0.08	0.74	0.10	0.00
75	0.00	0.00	0.00	0.14	0.00
100	0.22	0.12	0.84	0.09	0.01
150	0.12	0.07	0.46	0.03	0.02

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/104/63	18/ 7/63	0730 H	11 00 S	110 00 E

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.27	0.11	1.02	0.09	0.00
25	0.19	0.12	0.49	0.08	- 0.02
50	0.14	0.07	0.38	0.04	0.00
75	0.23	0.11	0.57	0.05	0.04
100	0.14	0.15	0.51	0.05	0.02
150	0.12	0.04	0.72	0.08	0.00

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/105/63	18/ 7/63	1930 H	09 30 S	110 00 E

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.38	0.18	1.16	0.14	0.00
25	0.36	0.12	0.70	0.12	0.00
50	0.51	0.09	0.89	0.14	0.02
75	0.25	0.03	0.57	0.07	0.00
100	0.15	0.17	0.64	0.05	- 0.01
150	0.06	0.01	0.38	0.07	- 0.02

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/106/63	19/ 7/63	2150 H	09 00 S	105 00 E

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.03	0.00	- 0.01	0.12	0.00
25	0.14	0.12	0.48	0.06	0.00
50	0.31	0.11	0.59	0.05	0.08
75	0.17	0.03	0.46	0.06	0.01
100	0.25	0.17	1.03	0.11	- 0.01
150	0.08	0.05	0.31	0.09	- 0.02

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/107/63	20/ 7/63	1030 H	09 02 S	106 54 E

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.05	0.00	- 0.03	0.16	- 0.02
25	0.25	0.05	0.67	0.10	0.01
50	0.39	0.19	1.14	0.15	- 0.04
75	0.18	0.10	0.75	0.10	0.00
100	0.21	0.14	1.12	0.10	- 0.05
150	0.01	0.11	0.42	0.08	- 0.05

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/108/63	2/ 8/63	0130 H	09 00 S	105 00 E

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.16	0.08	0.45	0.17	- 0.05
25	0.55	0.30	1.95	0.25	- 0.08
75	0.07	0.01	0.02	0.11	0.00
100	0.11	0.07	0.36	0.03	0.03
150	0.17	0.19	1.38	0.21	- 0.13

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/109/63	3/ 8/63	0915 H	09 30 S	110 00 E

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.55	0.43	1.39	0.22	- 0.07
25	0.76	0.38	1.06	0.19	0.00
50	0.26	0.14	1.45	0.10	0.02
75	0.40	- 0.04	0.22	0.06	0.06
100	0.14	0.03	0.15	0.09	- 0.04
150	0.12	0.05	0.26	0.12	- 0.07

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/110/63	3/ 8/63	2000 H	11 00 S	110 00 E

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.23	0.05	0.64	0.12	- 0.03
25	0.21	0.17	1.17	0.04	0.02
50	0.28	0.14	0.88	0.08	0.01
75	0.33	0.22	0.44	0.04	0.02
100	0.16	0.01	0.26	0.09	- 0.01
150	0.00	0.00	0.00	0.09	- 0.03

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/111/63	4/ 8/63	0810 H	12 30 S	110 00 E

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.23	0.21	0.91	0.12	- 0.04
25	0.16	0.15	1.05	0.11	- 0.03
50	0.35	0.44	0.31	0.15	0.00
75	0.26	0.08	- 0.22	0.06	0.07
100	0.18	0.04	0.43	0.07	0.01
150	0.04	0.06	0.16	0.04	- 0.01

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/112/63	5/ 8/63	2000 H	14 00 S	110 00 E

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.00	0.00	0.00	0.05	0.03
25	0.23	0.13	0.99	0.06	- 0.02
50	0.24	0.09	0.76	0.04	0.01
75	0.17	- 0.02	- 0.15	0.07	0.05
100	0.30	0.01	- 0.01	0.09	0.08
150	0.03	0.00	- 0.01	0.06	0.01

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/113/63	5/ 8/63	0730 H	15 30 S	110 00 E

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.22	0.13	0.38	0.05	0.06
25	0.36	0.10	1.28	0.14	- 0.10
50	0.23	0.06	0.51	0.12	- 0.03
75	0.26	0.08	0.74	0.08	0.07
100	0.23	0.26	0.43	0.04	0.11
150	0.09	0.08	0.60	0.08	- 0.03

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/114/63	5/ 8/63	1930 H	17 00 S	110 00 E

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.12	0.00	0.33	0.05	- 0.01
25	0.00	0.00	0.00	0.06	0.00
50	0.18	0.03	0.39	0.04	0.02
75	0.24	0.07	0.38	0.04	0.03
100	0.37	0.22	0.96	0.03	0.11
150	0.10	0.07	0.26	0.04	0.00

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/115/63	6/ 8/63	0730 H	18 30 S	110 00 E

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.13	0.11	0.33	0.05	0.01
25	0.17	0.06	0.58	0.04	0.02
50	0.18	0.09	0.31	0.04	0.01
75	0.21	0.10	0.38	0.03	0.04
100	0.30	0.04	0.52	0.02	0.12
150	0.15	0.10	0.84	0.06	- 0.02

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/116/63	6/ 8/63	1945 H	20 00 S	110 01 E

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.08	0.00	0.14	0.10	0.00
25	0.11	0.13	0.56	0.09	- 0.03
50	0.32	0.18	1.29	0.17	- 0.05
75	0.15	0.08	0.42	0.03	0.02
100	0.32	0.24	1.22	0.11	- 0.02
150	0.14	0.06	0.55	0.07	- 0.04

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/117/63	7/ 8/63	0800 H	21 30 S	110 00 E

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.16	0.06	0.47	0.07	- 0.01
25	0.22	0.09	0.77	0.02	0.05
50	0.07	- 0.01	- 0.05	0.09	0.00
75	0.70	0.17	0.93	0.05	0.19
100	0.06	- 0.01	- 0.04	0.03	0.07
150	0.12	0.11	0.69	0.07	- 0.03

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/118/63	7/ 8/63	2000 H	23 00 S	110 00 E

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.18	0.04	0.54	0.04	0.02
25	0.23	0.07	0.27	0.04	0.04
50	0.16	0.09	0.83	0.08	0.01
75	0.17	0.07	0.40	0.10	0.05
100	0.07	0.01	0.08	0.11	- 0.01
150	0.12	0.07	0.68	0.08	- 0.03

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/119/63	8/ 8/63	0730 H	24 30 S	110 01 E

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.15	0.08	0.75	0.09	- 0.03
25	0.16	- 0.01	0.52	0.00	0.09
50	0.30	0.16	1.19	0.09	0.00
100	0.15	0.05	0.61	0.03	0.05
150	0.13	0.12	0.84	0.07	- 0.02

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/120/63	8/ 8/63	1930 H	26 00 S	110 04 E

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.04	0.00	- 0.02	0.10	0.00
25	0.22	0.12	0.91	0.08	0.00
50	0.26	0.14	0.84	0.11	0.00
75	0.23	0.06	0.51	0.12	0.03
100	0.20	0.10	0.79	0.12	- 0.03
150	0.00	0.00	0.00	0.15	- 0.03

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/121/63	9/ 8/63	0740 H	27 30 S	110 00 E

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.20	0.10	0.90	0.10	- 0.02
25	0.23	0.08	0.83	0.11	- 0.02
50	0.17	0.10	0.76	0.08	- 0.01
75	0.31	0.17	0.93	0.08	0.00
100	0.08	- 0.01	- 0.06	0.10	0.00
150	0.22	0.12	0.62	0.04	0.01

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/122/63	9/ 8/63	1930 H	29 00 S	110 01 E

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.16	0.00	0.24	0.02	0.10
25	0.31	0.18	- 0.06	0.11	0.01
50	0.47	0.10	0.25	0.06	0.16
75	0.49	- 0.02	0.29	0.04	0.15
100	0.06	- 0.01	- 0.04	0.12	- 0.02

STATION	DATE	TIME	LATITUDE	LONGITUDE
DM 3/123/63	10/ 8/63	0700 H	30 41 S	110 03 E

DEPTH	CHLOROPHYLL A	CHLOROPHYLL B	CHLOROPHYLL C	ASTACIN	NON-ASTACIN
0	0.18	0.02	0.62	0.05	0.00
25	0.29	0.03	0.77	0.05	0.01
50	0.17	- 0.04	- 0.12	0.09	0.01
75	0.24	0.00	0.00	0.07	0.10
100	0.12	- 0.03	- 0.02	0.07	0.05
150	0.29	0.22	0.97	0.10	- 0.02

DATA

PART 4

ZOOPLANKTON

EXPLANATION OF SYMBOLS

Part 4	Zooplankton
x	Samples given to Indian Ocean Biological Centre, Cochin, India
*	Predominantly gelatinous organisms
( )	Including exceptionally large organisms

VERTICAL HAULS 200-0 m : INDIAN OCEAN STANDARD NET

STATION POSITION	DATE	TIME	ESTIMATED VOLUME FILTERED (m)	TOTAL WEIGHT (g)	BIOMASS (mg/m^3)
Dm3/90/63	11/7/63	1130	230	3.76	16
31°56'S. 110°00'E.		1145	220	2.48	11 x
Dm3/91/63	11/7/63	2100	200	5.43	27
30°30'S. 110°00'E.		2115	200	1.05	5 x
Dm3/92/63	12/7/63	0945	210	4.34	21
29°00'S. 110°00'E.		1000	205	4.59	22 x
Dm3/93/63	12/7/63	2115	200	9.64	48
27°30'S. 110°00'E.		2130	210	22.99 *	109 *
Dm3/94/63	13/7/63	1015	200	4.40	22
25°50'S. 110°00'E.		1030	200	3.92	20 x
Dm3/95/63	13/7/63	2045	207	11.24 *	54 *
24°30'S. 110°00'E.		2100	210	6.44	31
Dm3/96/63	14/7/63	1015	220	2.83	13
23°00'S. 110°00'E.		1030	210	3.66	17 x

VERTICAL HAULS 200-0 m : INDIAN OCEAN STANDARD NET

STATION POSITION	DATE	TIME	ESTIMATED VOLUME FILTERED (m^3)	TOTAL WEIGHT (g)	BIOMASS (mg/m^3)
Dm3/97/63	14/7/63	2040	200	5.53	28 x
21°30'S. 110°00'E.		2055	200	16.54	83
Dm3/98/63	15/7/63	0945	220	5.98 (18.74*)	27 (85*)
20°00'S. 110°00'E.		1000	210	6.00	29 x
Dm3/99/63	15/7/63	2035	210	7.39	35
18°30'S. 110°00'E.		2050	220	7.54	34 x
Dm3/100/63	16/7/63	1005	210	4.73	23
17°00'S. 110°00'E.		1020	207	3.03	15 x
Dm3/101/63	16/7/63	2100	205	6.28	31
15°30'S. 110°00'E.		2115	220	7.43	34 x
Dm3/102/63	17/7/63	1030	240	4.86	20
14°00'S. 110°00'E.		1045	220	5.65	26 x
Dm3/103/63	17/7/63	2045	200	8.37	42
12°30'S. 110°00'E.		2100	200	8.82	44 x

VERTICAL HAULS 200-0 m : INDIAN OCEAN STANDARD NET

STATION POSITION	DATE	TIME	ESTIMATED VOLUME FILTERED (m^3)	TOTAL WEIGHT (g)	BIOMASS (mg/m^3)
Dm3/104/63	18/7/63	1000	200	7.28	36 x
11°00'S. 110°00'E.		1015	210	9.47	45
Dm3/105/63	18/7/63	2015	207	23.15	112
09°30'S. 110°00'E.		2030	220	25.95	118 x
Dm3/107/63	20/7/63	1045	210	17.54	84
09°02'S. 106°54'E.		1100	205	20.39	100 x
Dm3/109/63	3/8/63	1030	200	25.80	129
09°30'S. 110°00'E.		1045	200	38.42	192 x
Dm3/110/63	3/8/63	2030	200	36.36	182
11°00'S. 110°00'E.		2045	220	115.42	525
Dm3/111/63	4/8/63	1110	200	20.58	103
12°30'S. 110°00'E.		1120	200	26.15	131 x
Dm3/112/63	4/8/63	2030	213	13.73	65
14°00'S. 110°00'E.		2050	210	13.02	62 x

VERTICAL HAULS 200-0 m : INDIAN OCEAN STANDARD NET

STATION POSITION	DATE	TIME	ESTIMATED VOLUME FILTERED (m^3)	TOTAL WEIGHT (g)	BIOMASS (mg/m^3)
Dm3/113/63 15°30'S. 110°00'E.	5/8/63	1045 1100	210 220	3.79 3.20	18 15 x
Dm3/114/63 17°00'S. 110°00'E.	5/8/63	2000 2015	200 200	10.27 7.73	51 39 x
Dm3/115/63 18°30'S. 110°00'E.	6/8/63	1020 1030	200 207	3.80 6.25	19 30 x
Dm3/116/63 20°00'S. 110°00'E.	6/8/63	2025 2040	230 230	10.08 13.51	44 59 x
Dm3/117/63 21°30'S. 110°00'E.	7/8/63	1050 1105	215 230	8.13 7.00	38 30 x

VERTICAL HAULS 200-0 m : INDIAN OCEAN STANDARD NET

STATION POSITION	DATE	TIME	ESTIMATED VOLUME FILTERED (m^3)	TOTAL WEIGHT (g)	BIOMASS (mg/m^3)
Dm3/118/63	7/8/63	2050	220	6.63	30 x
23°00'S. 110°00'E.		2105	220	24.99 *	114 *
Dm3/119/63	8/8/63	1015	200	3.80	19 x
24°30'S. 110°00'E.		1030	240	9.56	40
Dm3/120/63	8/8/63	2000	210	16.28	78
26°00'S. 110°00'E.		2015	220	21.69	99
Dm3/121/63	9/8/63	1045	207	7.52	36
27°30'S. 110°00'E.		1100	213	6.92	33 x
Dm3/122/63	9/8/63	2015	220	16.10	73
29°00'S. 110°00'E.		2025	220	19.33	88 x

HORIZONTAL TOWS : CLARKE-BUMPUS SAMPLER

STATION POSITION	DATE	TIME	DEPTH RANGE (m)	STRATUM MODE (m)	VOLUME FILTERED (m^3)	BIOMASS (mg/m^3)
Dm3/90/63	11/7/63	1230	0-10	0	10.7	27
31°56'S. 110°00'E.		"	45-75	75	6.9	6
		"	100-140	140	6.6	15
Dm3/91/63	11/7/63	2335	0-10	0	6.1	15
30°30'S. 110°00'E.		"	50-60	55	9.2	30
		"	100-125	110	17.9	10
		"	200-230	210	22.0	15
Dm3/92/63	12/7/63	1045	0-10	0	19.8	50
29°00'S. 110°00'E.		"	40-70	40	17.9	20
		"	75-130	75	22.7	5
		"	170-250	170	25.8	10
Dm3/93/63	12/7/63	2255	0-10	0	13.8	97
27°30'S. 110°00'E.		"	40-45	40	15.8	104
		"	80-100	80	19.3	15
		"	180-195	180	37.0	21

HORIZONTAL TOWS : CLARKE-BUMPUS SAMPLER

STATION POSITION	DATE	TIME	DEPTH STRATUM RANGE (m)	MODE (m)	VOLUME FILTERED (m^3)	BIOMASS (mg/m^3)
Dm3/94/63 25°50'S. 110°00'E.	13/7/63	1110	0-10	0	17.2	28
		"	45-55	50	14.9	13
		"	85-110	100	19.6	8
		"	180-220	200	27.9	10
Dm3/95/63 24°30'S. 110°00'E.	13/7/63	2300	0-10	0	18.3	30
		"	30-60	50	16.9	16
		"	50-110	95	22.5	10
		"	110-210	180	27.6	9
Dm3/96/63 23°00'S. 110°00'E.	14/7/63	1055	0-10	0	23.5	8
		"	50-60	60	13.4	4
		"	110-130	125	18.8	3
		"	220-260	250	15.3	12
Dm3/97/63 21°30'S. 110°00'E.	14/7/63	2335	0-10	0	7.8	28

HORIZONTAL TOWS : CLARKE-BUMPUS SAMPLER

STATION POSITION	DATE	TIME	DEPTH STRATUM RANGE (m)	MODE (m)	VOLUME FILTERED (m^3)	BIOMASS (mg/m^3)
Dm3/98/63	15/7/63	1040	0-10	0	22.6	17
20°00'S. 110°00'E.		"	45-60	50	17.3	16
		"	95-130	105	20.7	3
		"	195-240	210	21.9	7
Dm3/99/63	15/7/63	2315	0-10	0	17.5	39
18°30'S. 110°00'E.		"	40-60	60	17.1	42
Dm3/100/63	16/7/63	1040	0-10	0	19.1	24
17°00'S. 110°00'E.		"	55-75	55	15.4	8
Dm3/101/63	16/7/63	2315	0-10	0	22.3	75
15°30'S. 110°00'E.		"	40-75	40	17.8	17
		"	80-150	80	21.1	16
		"	180-270	180	22.9	7
Dm3/102/63	17/7/63	1110	0-10	0	24.6	21
14°00'S. 110°00'E.		"	40-75	40	21.2	26
		"	80-150	80	25.5	6
		"	190-280	190	34.4	8

HORIZONTAL TOWS : CLARKE-BUMPUS SAMPLER

STATION POSITION	DATE	TIME	DEPTH STRATUM RANGE (m)	MODE (m)	VOLUME FILTERED (m^3)	BIOMASS (mg/m^3)
Dm3/103/63 12°30'S. 110°00'E.	17/7/63	2330	0-10	0	20.9	46
		"	50-75	50	18.1	17
		"	100-140	100	18.4	3
		"	200-270	200	25.4	9
Dm3/104/63 11°00'S. 110°00'E.	18/7/63	1040	0-10	0	19.2	59
		"	45-65	45	15.9	35
		"	100-130	100	17.4	2
		"	200-260	200	18.8	11
Dm3/105/63 09°30'S. 110°00'E.	18/7/63	2300	0-10	0	9.1	334
		"	50-55	55	10.1	123
		"	100-110	110	20.6	16
		"	200-210	210	22.0	28
Dm3/107/63 09°02'S. 106°54'E.	20/7/63	1125	0-10	0	14.8	69
		"	45-75	70	15.1	75
		"	100-200	150	15.9	48
		"	210-270	270	10.5	75

HORIZONTAL TOWS : CLARKE-BUMPUS SAMPLER

STATION POSITION	DATE	TIME	DEPTH STRATUM RANGE (m)	MODE (m)	VOLUME FILTERED (m^3)	BIOMASS (mg/m^3)
Dm3/109/63 09°30'S. 110°00'E.	3/8/63	1115	0-10	0	5.7	109
		"	60-75	75	14.3	52
		"	125-140	140	11.8	21
		"	250-270	270	14.7	14
Dm3/110/63 11°00'S. 110°00'E.	3/8/63	2315	0-10	0	6.4	352
		"	55-65	60	6.3	297
		"	120-130	125	14.9	87
		"	240-250	240	18.7	17
Dm3/111/63 12°30'S. 110°00'E.	4/8/63	1220	0-10	0	4.3	51
		"	30-70	30	11.9	24
		"	65-125	65	17.0	119
		"	150-250	150	29.6	73
Dm3/112/63 14°00'S. 110°00'E.	4/8/63	2254	0-10	0	13.8	36
		"	50-60	50	15.5	19
		"	100-120	105	21.0	10
		"	200-220	220	21.8	10

HORIZONTAL TOWS : CLARKE-BUMPUS SAMPLER

STATION POSITION	DATE	TIME	DEPTH STRATUM RANGE (m)	MODE (m)	VOLUME FILTERED (m^3)	BIOMASS (mg/m^3)
Dm3/113/63	5/8/63	1125	0-10	0	9.7	16
15°30'S. 110°00'E.		"	65-70	65	7.5	19
		"	120-130	125	15.8	4
		"	210-230	210	18.1	10
Dm3/114/63	5/8/63	2225	0-10	0	16.6	37
17°00'S. 110°00'E.		"	55-65	58	12.3	3
		"	125-150	125	11.1	5
		"	230-255	230	18.2	8
Dm3/115/63	6/8/63	1055	0-10	0	17.2	19
18°30'S. 110°00'E.		"	75	75	14.3	52
		"	130-165	160	13.1	10
Dm3/116/63	6/8/63	2255	0-10	0	15.5	31
20°00'S. 110°00'E.		"	55-75	55	12.3	32
		"	100-132	115	18.9	12
		"	210-240	235	20.8	8

HORIZONTAL TOWS : CLARKE-BUMPUS SAMPLER

STATION POSITION	DATE	TIME	DEPTH RANGE (m)	STRATUM MODE (m)	VOLUME FILTERED (m^3)	BIOMASS (mg/m^3)
Dm3/117/63 21°30'S. 110°00'E.	7/8/63	1135	0-10	0	10.0	5
		"	50-60	50	14.8	9
		"	100-115	100	19.4	6
		"	200-210	200	24.1	17
Dm3/118/63 23°00'S. 110°00'E.	7/8/63	2325	0-10	0	14.1	28
		"	45-75	60	12.5	15
		"	100-135	120	19.9	11
		"	200-245	220	16.7	7
Dm3/119/63 24°30'S. 110°00'E.	8/8/63	1105	0-10	0	12.0	12
		"	50-60	50	15.4	46
		"	110-125	110	18.1	16
Dm3/120/63 26°00'S. 110°00'E.	8/8/63	2256	40-46	46	20.0	18
		"	80-125	100	23.2	9
		"	160-180	180	29.5	14

HORIZONTAL TOWS : CLARKE-BUMPUS SAMPLER

STATION POSITION	DATE	TIME	DEPTH RANGE (m)	STRATUM MODE (m)	VOLUME FILTERED (m^3)	BIOMASS (mg/m^3)
Dm3/121/63 27°30'S. 110°00'E.	9/8/63	1123	0-10	0	13.9	31
		"	55-70	60	9.7	9
		"	125-150	130	10.3	8
		"	215-260	240	15.3	14
Dm3/122/63 29°00'S. 110°00'E.	9/8/63	2243	0-10	0	7.9	34
		"	45-65	60	12.9	67
		"	100-140	120	19.9	34
		"	185-220	215	26.1	18

DATA

PART 5

MICRONEKTON

OBLIQUE TOWS : 5 FT ISAACS-KIDD MIDWATER TRAWL

STATION POSITION	DATE	TIME	ESTIMATED LENGTH OF COLUMN FILTERED (m)	MAX. DEPTH (m) +	DRY WEIGHT: mg for a 10,000 m* column			
					x JELLY ORG.	x PLANKTON ORG.	x MACRO-PLANKTON ORG.	x MICRO-NEKTON
Dm3/91/63 30°30'S. 110°E.	11/7/63	2119 2300	10340	200	200	4200	2830	6291
Dm3/93/63 27°30'S. 110°E.	12/7/63	2104 2238	9320	196	320	1800	3266	4817
Dm3/95/63 24°30'S. 110°E	13/7/63	2115 2251	7684	200	1112	2400	2965	12401
Dm3/97/63 21°30'S. 110°E.	14/7/63	2135 2318	10530	190	504	1440	2586	4685
Dm3/99/63 18°30'S. 110°E.	15/7/63	2109 2253	11882	220	256	852	2621	2787
Dm3/101/63 15°30'S. 110°E.	16/7/63	2123 2255	9382	220	584	900	3157	1314
Dm3/103/63 12°30'S. 110°E.	17/7/63	2122 2310	11296	220	264	1320	7616	2784

+ If no data, 200 m assumed x Refer to explanatory notes

* 10,000 m is the length of the column filtered in the time of the average tows

OBLIQUE TOWS : 5 FT ISAACS-KIDD MIDWATER TRAWL

STATION POSITION	DATE	TIME	ESTIMATED LENGTH OF COLUMN FILTERED (m)	MAX. DEPTH (m) +	DRY WEIGHT: mg for a 10,000 m* column			
					x JELLY ORG.	x PLANKTON ORG.	x MACRO-PLANKTON ORG.	x MICRO-NEKTON
Dm3/105/63 09°30'S. 110°E.	18/7/63	2046 2228	10308	160	280	3960	12090	12313
Dm3/110/63 11°S. 110°E.	3/8/63	2123 2303	10370	200	672	3120	8553	3962
Dm3/112/63 14°S. 110°E.	4/8/63	2102 2237	9598	195	480	1188	1885	4648
Dm3/114/63 17°S. 110°E.	5/8/63	2030 2209	11574	220	192	2160	1951	1551
Dm3/116/63 20°S. 110°E.	6/8/63	2100 2238	10000	200	288	1020	1973	705
Dm3/118/63 23°S. 110°E.	7/8/63	2120 2312	11334	240	272	852	2205	2669
Dm3/120/63 26°S. 110°04'E.	8/8/63	2045 2234	11142	196	672	1920	2473	4460
Dm3/122/63 29°S. 110°01'E.	9/9/63	2039 2219	10246	190	272	3000	5150	17003

+ If no data, 200 m assumed x Refer to explanatory notes

* 10,000 m is the length of the column filtered in the time of the average tows

TABLE 3

RELATION OF WET VOLUME TO DRY WEIGHT

The displacement volume of a group of organisms (in ml) multiplied by the appropriate factor below, gives the dry weight in mg.

	CONVERSION FACTOR
Gelatinous organisms (Medusae, Salps, Siphonophores)	8
Planktonic organisms	120
Micronektonic organisms	
Fishes	189
Fish larvae	162
Leptocephali	60
Cephalopods non gelatinous, small	137
non gelatinous, big	182
gelatinous	72
Macroplanktonic organisms	
Phyllosomas	29
Stomatopods	168
Amphipods - various	130
- Phronima group	43
Mysids	145
Euphausiids	149
Penaeids	158
Carids	231
Annelids	53
Pteropods (shell included)	267
Heteropods	10
Chaetognaths	56

DATA

PART 6

PARTICULATE CARBON

PARTICULATE CARBON

Values are in µg/l

STATION	0 m	50 m	100 m	150 m	200 m	COLUMN AVERAGE
90	29	16	13	12	10	15
91	33	22	17	9	7	17
92	22	18	15	8	7	14
93	27	14	16	20	10	17
94	27	22	15	10	6	16
95	24	21	12	9	7	14
96	18	10	9	8	5	10
97	23	17	9	7	7	12
98	26	15	12	11	7	13
99	18	15	12	12	7	13
100	16	15	12	9	9	12
101	17	18	10	9	-	14

- Samples lost

OCEANOGRAPHICAL CRUISE REPORTS

1. Oceanographical observations in the Indian Ocean in 1959. H.M.A.S. *Diamantina* Cruises Dm1/59 and Dm2/59.
2. Oceanographical observations in the Indian Ocean in 1960. H.M.A.S. *Diamantina* Cruise Dm1/60.
3. Oceanographical observations in the Indian Ocean in 1960. H.M.A.S. *Diamantina* Cruise Dm2/60.
4. Oceanographical observations in the Indian Ocean in 1960. H.M.A.S. *Diamantina* Cruise Dm3/60.
5. Oceanographical observations in the Pacific Ocean in 1960. H.M.A.S. *Gascoyne* Cruise G1/60 and G2/60.
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7. Oceanographical observations in the Indian Ocean in 1961. H.M.A.S. *Diamantina* Cruise Dm1/61.
8. Oceanographical observations in the Pacific Ocean in 1961. H.M.A.S. *Gascoyne* Cruise G1/61.
9. Oceanographical observations in the Indian Ocean in 1961. H.M.A.S. *Diamantina* Cruise Dm2/61.
11. Oceanographical observations in the Indian Ocean in 1961. H.M.A.S. *Diamantina* Cruise Dm3/61.
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15. Oceanographical observations in the Indian Ocean in 1962. H.M.A.S. *Diamantina* Cruise Dm2/62.
21. Oceanographical observations in the Indian Ocean in 1963. H.M.A.S. *Gascoyne* Cruise G1/63.
23. Oceanographical observations in the Indian Ocean in 1963. H.M.A.S. *Diamantina* Cruise Dm1/63.
24. Oceanographical observations in the Indian Ocean in 1963. H.M.A.S. *Diamantina* Cruise Dm2/63.
25. Oceanographical observations in the Indian Ocean in 1963. H.M.A.S. *Diamantina* Cruise Dm3/63.