

OCEANOGRAPHICAL STATION LIST

Volume 41

Oceanic Investigations in Eastern Australian Waters,
F.R.V. *Derwent Hunter*, 1958

Compiled by A. D. Crooks



Division of Fisheries and Oceanography
Commonwealth Scientific and Industrial
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OCEANIC INVESTIGATIONS IN EASTERN AUSTRALIAN WATERS,
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I. INTRODUCTION

This volume contains observations collected on board the Division's Fisheries Research Vessel *Derwent Hunter*. The results of 17 cruises are reported here. Ten cruises were designed specifically for the collection of hydrological data for the study of the East Australian Current. Five cruises were concerned with primary production, and two were special cruises.

II. METHODS AND UNITS

In all cases reported the time is in Eastern Australian Standard Time (Time Zone K). Wind force is reported according to Beaufort's scale. Sea observations have been coded following the instructions issued by the United States Navy Hydrographic Office (1955).

(a) *Hydrology*

For most stations more than one wire angle is recorded. In these cases, the first is the wire angle appropriate to the deep cast, 500–1500 m, and the second is that of the shallow cast, 0–250 m. Where a third wire angle is given, an extra cast has been necessary owing to failure of some part of the equipment such as a thermometer.

(i) *Temperature*.—Temperatures were taken with deep sea reversing thermometers and corrected for mercury expansion effects and index error. Depths were determined from differences in the readings of protected and unprotected thermometers.

(ii) *Salinity*.—In this volume salinity has been recorded in preference to chlorinity and it is expressed in parts per thousand. Chlorinity is first determined using a temperature–chlorinity meter (Hamon 1956), and is then converted to salinity using Knudsen's tables (1948).

(iii) *Oxygen*.—Dissolved oxygen determinations were carried out according to Winkler's method as modified by Thompson and Robinson (1939). The values are reported as ml/l. Oxygen saturation values were calculated using the nomograph of Richards and Corwin (1956).

(iv) *Sigma-t*.—Sigma-*t* was calculated using a nomograph constructed from information issued by the United States Navy Hydrographic Office (La Fond 1951).

(v) *Phosphate P*.—Inorganic phosphate determinations were made using Atkins's (1923) modification of Denigès's original method. Stannous chloride was

used as the reductant. Distilled water standards were used and no salt error correction was applied. Other forms of phosphorus were converted to orthophosphate by Robinson's (1941) digestion method, prior to the determination of total phosphorus.

(b) *Pigments*

Water samples were taken with a plastic sampler and filtered at once through millipore filters. The filters were placed in envelopes and stored in metal vacuum desiccators over silica gel. The analyses were carried out within one month of collection using the method of Richards and Thompson (1952). The details and justification of the method used are given in Humphrey (1960).

(c) *CO₂ Uptake*

Measurements of photosynthetic CO₂ uptake by marine phytoplankton were made by the ¹⁴C method described by Jitts (1957).

Incubation was done either *in situ* where the samples were resuspended in the ocean at the depths from which they were taken, or in a fluorescent light bath with a constant illumination of about 1100 ft candles. The period of incubation for the *in situ* samples was from sunrise to sunset (all day) or from sunrise to local noon (half day). The period of incubation in the light bath is given in hours.

Depth from which the sample was taken is given in metres below the surface.

Activity is in counts per minute corrected for background. All counts were taken to 10,000 counts, or 5 min, whichever occurred first, and are corrected for counter instability by reference to a count of a known ¹⁴C standard sample (labelled "Perspex") either directly preceding or following the unknown sample. Counts were made with a windowless Geiger counter with an efficiency of about 40 per cent.

"Light" is the activity of the sample in the clear tube after incubation and filtration. "Dark" is the activity of the sample from the duplicate dark tube. "Net" is the light activity less the dark activity. "Production" is the rate of uptake of CO₂ calculated by means of the formula:

$$\frac{\text{Net Activity}}{\text{Added Activity}} \times \frac{90}{1} \times \frac{12}{44} \times \frac{1000}{\text{Period of Incubation}}$$

The CO₂ content is assumed to be 90 mg/l. The added activities used during the cruises reported in this volume were as follows:

Cruise (No.)	¹⁴ C (Stock No.)	Activity (Counts/min)
3-5	3	6.17 × 10 ⁶
7-15	4	4.51 × 10 ⁶
16-18	5	3.93 × 10 ⁵
20	6	3.85 × 10 ⁶

For *in situ* samples the production is given in mg C/m³ per day. For samples incubated in a light bath the production is given in mg C/m³ per hour.

The estimation of the rates of production per m² column of water at each station is made by use of the formula:

$$1/1000 \{(25/2)(a+b) + (25/2)(b+c) + (50/2)(c+d)\},$$

where *a*, *b*, *c*, and *d* are the rates of production at 0, 25, 50, and 100 m respectively. To obtain the daily rate of production from light bath incubation measurements (mg C/hr/m³), the formula is multiplied by the factor 10, assuming as a rough approximation that the daily rate is 10 times the hourly rate.

(d) Light Penetration

Measurements of light penetration were made by the method described by Jitts (1959). Time recorded is Eastern Australian Standard Time; depth is in metres. Percentage surface light is the average of two readings taken while lowering and raising the photometer. Depth of penetration of 1 per cent. surface light is given in metres and was obtained by extrapolation of the curve of the measurements at the various depths. Solar altitude was calculated for the time of commencement of the measurements, using published data in nautical almanacs and "Tables of Computed Altitude and Azimuth".

III. PERSONNEL

The sampling has been the responsibility of Messrs. J. Staniforth, F. Davies, W. Prothero, R. Bradley, and N. Dyson. The laboratory analyses of salt water samples have been carried out at the Cronulla laboratory by Messrs C. Walker, F. Davies, G. Dal Pont, and W. Prothero. The routine chlorophyll determinations were made by Dr. G. F. Humphrey and Mr. M. Wootton. Preparation of ampoules of ¹⁴C and the counting of samples were carried out by Messrs. N. Dyson and D. Llewellyn. Mesdames E. Wood, R. Birks, B. Jones, and D. Schmitzer, and Misses F. Luce and R. Weidenhofer have been responsible for processing and for the preparation of types sheets under the general direction of Mr. A. D. Crooks.

IV. REFERENCES

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F.R.V. "Derwent Hunter" Cruise 1 1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ ‰ sat.	σ _t	Total P μg.at/l
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DATE: 3.1.58 TIME: 2320 hrs STATION NO.: 1
 LATITUDE: 34°10' S. LONGITUDE: 151°29' E.

WIRE ANGLE: 0

0	19.46	35.55	5.32	105	25.34	0.42
25	19.35	35.55	5.35	106	25.37	0.58
50	16.85	35.43	4.21	79	25.89	0.65
75	16.52	35.43	5.14	96	25.97	0.58
100	15.32	35.32	4.23	77	26.16	0.74
150	14.80	35.37	4.97	90	26.33	0.65
200	14.20	35.35	5.03	90	26.43	0.65
300	13.98	35.28	4.92	88	26.42	0.68

DATE: 4.1.58. TIME: 0220 hrs STATION NO.: 2
 LATITUDE: 34°11' S. LONGITUDE: 151°37' E.

WIRE ANGLE: 5°, 0

0	19.52	35.57	5.35	106	25.34	0.35
24	19.35	35.57	5.17	102	25.39	0.32
47	18.15	35.50	4.50	85	25.64	0.58
71	16.40	35.39	3.92	73	25.97	0.71
92	15.35	35.30	3.98	73	26.14	0.81
146	14.53	35.41	5.07	91	26.41	0.55
193	13.77	35.34	4.92	87	26.51	0.65
290	12.42	35.35	4.92	85	26.80	0.77
480	9.15	34.70	4.53	72	26.88	1.19
725	6.72	34.51	4.33	65	27.09	1.52

F.R.V. "Derwent Hunter" Cruise 1 1958

Depth (m)	Temp. °C	S ⁰ / ₀₀	O ₂ ml/l	O ₂ o/o sat.	σ _t	Total P μg.at/l
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DATE: 4.1.58. TIME: 0620 hrs STATION NO.: 3
 LATITUDE: 34°13' S. LONGITUDE: 151°55' E.

WIRE ANGLE: 10°, 0

0	20.99	35.57	5.09	103	24.95	0.61
25	19.98	35.57	5.21	104	25.22	0.39
50	18.38	35.53	5.35	104	25.60	0.29
75	16.28	35.52	5.32	99	26.10	0.42
100	15.16	35.44	5.00	91	26.29	0.52
150	13.87	35.32	5.02	89	26.47	0.61
200	13.04	35.23	5.00	87	26.58	0.71
300	11.27	34.97	4.65	78	26.73	0.97
450	9.25	34.70	4.68	75	26.87	1.16
675	7.24	34.54	4.38	67	27.05	1.39
900	5.26	34.49	4.11	60	27.12	1.74
1345	3.09	34.60	3.51	48	27.58	2.00

DATE: 4.1.58. TIME: 1240 hrs STATION NO.: 4
 LATITUDE: 34°15' S. LONGITUDE: 152°12' E.

WIRE ANGLE: 45°, 40°

0	21.67	35.62	5.09	105	24.80	0.32
18	21.45	35.61	5.09	104	24.85	0.32
37	19.12	35.61	5.32	105	25.48	0.42
55	17.99	35.57	5.21	100	25.73	0.32
74	16.99	35.55	4.77	90	25.95	0.45
110	16.15	35.53	4.94	92	26.14	0.45
150	15.16	35.43	4.86	89	26.28	0.52
225	13.46	35.28	5.00	88	26.53	0.65
370	11.19	34.96	4.65	78	26.72	0.87
390	9.44	34.79	4.59	74	26.90	1.26
590	8.10	34.61	4.59	71	26.98	1.26
830	6.29	34.51	4.27	64	27.15	1.74

F.R.V. "Derwent Hunter"

Cruise 1

1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ % sat.	σ _t	Total P μg.at/l
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DATE: 4.i.58. TIME: 2030 hrs STATION NO.: 5

LATITUDE: 34°30' S. LONGITUDE: 152°41' E.

WIRE ANGLE: 5°, 0

0	23.20	35.55	4.74	100	24.31	
25	21.98	35.52	4.71	97	24.63	0.48
50	17.45	35.44	3.75	72	25.76	0.71
75	16.00	35.35	3.89	72	26.04	0.74
100	15.08	35.30	4.01	73	26.20	0.90
150	13.99	35.19	4.13	73	26.35	0.81
200	12.86	35.08	4.11	71	26.50	0.87
300	11.38	34.94	4.27	72	26.68	0.94
500	8.36	34.63	4.43	69	26.95	1.53
750	6.57	34.51	4.33	65	27.11	1.32
1000	4.91	34.49	3.94	57	27.30	1.74
1500	3.00	34.60	3.48	48	27.58	2.03

DATE: 5.i.58. TIME: 0340 hrs STATION NO.: 6

LATITUDE: 34°45' S. LONGITUDE: 153°10' E.

WIRE ANGLE: 0, 0

0	21.15	35.52	5.00	102	24.86	0.45
25	19.20	35.44	4.30	85	25.32	1.00
50	16.10	35.32	3.75	70	25.98	0.84
75	14.88	35.23	3.89	70	26.19	0.97
100	14.09	35.16	4.33	77	26.30	0.97
150	13.10	35.10	4.21	73	26.47	1.00
200	12.32	35.05	4.27	73	26.58	0.97
300	10.59	34.87	4.33	71	26.77	1.16
500	8.14	34.61	4.47	70	26.98	1.48
750	6.25	34.51	4.33	64	27.15	1.55
1000	4.69	34.51	3.94	56	27.34	1.87
1500	3.03	34.60	3.51	48	27.58	1.90

F.R.V. "Derwent Hunter" Cruise 1 1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ % sat.	σ _t	Total P μg.at/l
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DATE: 5.1.58. TIME: 1445 hrs STATION NO.: 8
 LATITUDE: 35°03' S. LONGITUDE: 154°15' E.

WIRE ANGLE: 50°, 15°

0	25.00	35.50	4.62	100	23.74	0.32
23	24.50	35.48	4.69	99	23.87	0.39
46	21.00	35.61	3.53	72	24.98	0.65
69	19.76	35.59	4.01	80	25.29	0.61
92	18.84	35.55	3.75	74	25.50	0.74
135	17.49	35.55	4.74	91	25.83	0.48
180	15.59	35.46	4.71	87	26.21	0.65
265	13.90	35.32	4.88	87	26.47	0.68
310	13.24	35.26	4.56	80	26.57	0.71
455	10.54	34.87	4.21	69	26.77	1.03
605	8.37	34.63	4.43	69	26.95	1.29
960	5.29	34.49	4.11	60	27.25	1.87

DATE: 6.1.58. TIME: 0315 hrs STATION NO.: 10
 LATITUDE: 35°19' S. LONGITUDE: 155°50' E.

WIRE ANGLE: 0, 0

0	18.95	35.57	5.32	105	25.49	0.39
25	18.98	35.57	5.35	105	25.48	0.39
50	19.10	35.57	5.55	109	25.45	0.29
75	17.62	35.55	5.35	102	25.80	0.42
100	16.35	35.50	5.14	96	26.07	0.52
150	14.95	35.41	4.92	89	26.32	0.58
200	13.05	35.16	4.50	79	26.52	0.81
300	9.59	34.78	4.38	71	26.87	1.26
500	7.45	34.54	4.77	73	27.02	1.55
750	5.80	34.47	4.27	63	27.18	1.68
1000	4.40	34.49	3.89	55	27.35	1.94
1500	3.05	34.60	3.53	48	27.58	2.20

F.R.V. "Derwent Hunter"

Cruise 1

1957

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ % sat.	σ_t	Total P μg.at/l
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DATE: 6.1.58.

TIME: 1510 hrs

STATION NO.: 12

LATITUDE: 35°42' S.

LONGITUDE: 157°12' E.

WIRE ANGLE: 50°, 20°, 0°

0*	19.44	35.59	5.21	103	25.37	0.39
19	19.44	35.61	5.09	101	25.39	0.42
38	19.42	35.61	5.14	102	25.40	0.32
57	16.70	35.48	5.38	101	25.97	0.42
75	15.45	35.39	5.28	97	26.19	0.45
120	13.89	35.28	5.25	93	26.44	0.65
165	12.88	35.16	4.53	79	26.55	0.90
248	12.06	35.07	4.88	83	26.65	0.90
355	10.48	34.90	4.56	75	26.82	1.00
550	8.04	34.60	4.45	69	26.97	1.32
745	6.51	34.51	4.30	64	27.12	1.65
1135	3.58	34.51	4.30	60	27.46	1.90

DATE: 8.1.58.

TIME: 0020 hrs

STATION NO.: 13

LATITUDE: 35°01' S.

LONGITUDE: 157°19' E.

WIRE ANGLE: 60°, 20°

0	20.18	35.62	5.17	104	25.21	0.39
21	19.90	35.62	5.17	103	25.28	0.35
42	19.42	35.61	5.32	106	25.40	0.32
63	18.70	35.57	5.09	99	25.55	0.42
84	17.25	35.50	4.47	85	25.86	0.55
124	15.30	35.30	4.01	73	26.16	0.81
168	14.40	35.25	4.13	74	26.31	0.81
250	13.05	35.23	5.00	87	26.58	0.71
320	12.16	35.12	4.83	83	26.67	0.84
515	9.07	34.70	4.53	72	26.90	1.13
720	7.23	34.56	4.36	66	27.06	1.39
1135	4.25	34.51	3.78	53	27.39	1.71

F.R.V. "Derwent Hunter" Cruise 1 1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ % sat.	σ _t	Total P μg.at/l
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DATE: 8.i.58 TIME: 1240 hrs STATION NO.: 15
 LATITUDE: 34°40' S. LONGITUDE: 155°59' E.

WIRE ANGLE: 20°, 20°

0	21.86	35.57	5.03	104	24.71	0.42
24	19.31	35.59	5.06	100	25.41	0.29
48	19.24	35.59	5.50	108	25.42	0.32
72	17.98	35.53	5.18	100	25.70	0.39
97	16.61	35.50	5.11	96	26.01	0.48
146	15.40	35.43	4.92	90	26.23	0.58
194	14.42	35.34	4.92	88	26.38	0.65
290	12.77	35.17	5.43	94	26.59	0.65
485	9.68	34.76	4.57	74	26.84	1.26
724	7.21	34.52	4.43	67	27.03	1.55
968	5.44	34.47	4.22	62	27.23	1.77
1450	3.23	34.56	3.59	50	27.53	2.00

DATE: 9.i.58. TIME: 0150 hrs STATION NO.: 17
 LATITUDE: 34°07' S. LONGITUDE: 154°46' E.

WIRE ANGLE: 0, 0

0	23.70	35.59	4.86	103	24.19	0.48
25	23.55	35.55	4.81	102	24.21	0.39
50	23.76	35.55	4.81	102	24.15	0.39
75	22.77	35.59	4.86	102	24.46	0.32
100	21.75	35.59	4.75	98	24.75	0.39
150	19.55	35.57	4.33	86	25.33	0.48
200	19.05	35.57	4.51	89	25.46	0.48
300	17.70	35.52	4.36	84	25.76	0.55
490	12.88	35.08	4.30	75	26.50	0.87
738	8.83	34.65	4.36	69	26.89	1.32
984	6.54	34.49	4.43	66	27.10	1.42
1475	3.70	34.52	3.53	49	27.46	1.84

F.R.V. "Derwent Hunter"

Cruise 1

1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ o/o sat.	σ _t	Total P μg.at/l
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DATE: 9.1.58.

TIME: 1255 hrs

STATION NO.: 19

LATITUDE: 33°45' S.

LONGITUDE: 153°42' E.

WIRE ANGLE: 0, 0

0	24.01	35.57	4.68	100	24.09	0.35
25	23.60	35.57	4.75	101	24.21	0.42
50	22.80	35.57	4.45	93	24.44	
75	21.65	35.57	4.18	86	24.77	
100	20.65	35.59	4.36	88	25.05	0.55
150	19.20	35.59	4.52	89	25.43	0.48
200	18.25	35.55	4.38	85	25.65	0.48
300	16.38	35.39	3.95	74	25.98	0.77
500	11.92	34.99	4.30	73	26.62	0.87
750	7.88	34.58	4.36	67	26.98	1.42
997	5.75	34.47	4.25	62	27.19	1.58
1487	3.57	34.54	4.46	62	27.49	1.87

DATE: 9.1.58.

TIME: 1843 hrs

STATION NO.: 20

LATITUDE: 33°41' S.

LONGITUDE: 153°09' E.

WIRE ANGLE: 55°, 25°

0	25.75	35.44	4.48	98	23.46	
23	25.75	35.46	4.61	101	23.48	0.39
46	25.76	35.44	4.61	101	23.46	0.29
69	24.82	35.41	4.48	97	23.72	0.35
91	24.00	35.44	4.22	90	23.99	0.42
136	20.50	35.59	3.54	71	25.09	0.61
182	18.44	35.50	3.82	74	25.56	0.71
270	15.73	35.34	4.16	77	26.07	0.68
272	15.77	35.32	4.03	74	26.08	0.74
400	12.19	35.05	4.34	74	26.60	0.97
540	9.79	34.76	4.22	68	26.82	1.23
810	6.53	34.49	4.26	64	27.10	1.48

F.R.V. "Derwent Hunter" Cruise 1 1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ ‰ sat.	σ _t	Total P μg.at/l
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DATE: 10.1.58. TIME: 0215 hrs STATION NO.: 21
 LATITUDE: 33°43' S. LONGITUDE: 152°28' E.

WIRE ANGLE: 50°, 35°

0	23.10	35.55	4.78	101	24.34	0.39
22	19.22	35.39	4.97	98	25.28	0.48
43	16.86	35.39	3.64	69	25.87	0.81
65	16.22	35.32	3.70	69	25.96	0.74
85	15.38	35.25	3.80	69	26.09	0.74
126	13.96	35.17	3.97	71	26.35	0.81
170	13.09	35.08	4.09	71	26.45	1.00
254	11.46	34.92	4.22	71	26.64	1.10
368	10.08	34.79	4.28	70	26.79	1.19
588	7.45	34.54	4.37	67	27.02	1.39
816	5.83	34.47	4.13	61	27.18	1.52
1276	3.54	34.54	3.54	49	27.49	1.97

F.R.V. "Derwent Hunter" Cruise 2 1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ o/o sat.	σ _t	Total P μg.at/l
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DATE: 6.ii.58. TIME: 0210 hrs STATION NO.: 24
 LATITUDE: 34°17' S. LONGITUDE: 151°45' E.
 SEA: 2 WIND: FORCE 3 WIRE ANGLE: 35°, 15°
 DIRECTION SSE.

0	26.11	35.39	4.59	101	23.32	0.32
25	26.41	35.39	4.47	99	23.22	0.42
50	24.12	35.66	4.86	104	24.12	0.32
75	22.30	35.64	4.83	100	24.64	0.32
100	20.39	35.61	4.68	94	25.14	0.42
150	18.90	35.57	4.18	82	25.50	0.65
200	17.29	35.46	4.51	86	25.82	0.87
300	14.53	35.26	4.44	80	26.30	0.87
390	13.15					
524	9.86	34.78	4.30	70	26.82	1.29
643	7.86	34.60	4.38	68	27.00	1.42
1048	5.21	34.47	4.38	64	27.25	1.65

DATE: 6.ii.58. TIME: 0855 hrs STATION NO.: 25
 LATITUDE: 34°23' S. LONGITUDE: 152°02' E.
 SEA: 2 WIND: FORCE 3 WIRE ANGLE: 0, 5°
 DIRECTION SSE.

0	26.20	35.43	4.59	102	23.31	0.32
25	26.08	35.43	4.53	100	23.35	0.35
50	24.53	35.57	4.89	105	23.94	0.39
75	23.25	35.52	4.56	96	24.27	0.39
100	21.60	35.57	4.40	90	24.78	0.48
150	20.01	35.59	4.42	88	25.22	0.42
200	18.92	35.57	4.38	86	25.50	0.48
300	16.87	35.46	4.24	80	25.92	0.58
500	12.80	35.17	4.81	84	26.59	0.71
750	8.36	34.61	4.59	72	26.94	1.35
1000	6.12	34.51	4.21	62	27.17	1.68
1500	3.40	34.54	3.56	49	27.51	1.97

F.R.V. "Derwent Hunter"

Cruise 2

1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ % sat.	σ_t	Total P µg.at/l
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DATE: 6.ii.58. TIME: 1510 hrs STATION NO.: 26
 LATITUDE: 34°26' S. LONGITUDE: 152°32' E.
 SEA: 2 WIND: FORCE 4 WIRE ANGLE: 0, 0
 DIRECTION ESE.

0	26.13	35.46	4.59	101	23.36	0.39
25	26.15	35.44	4.62	102	23.33	0.35
50	23.23	35.53	4.14	87	24.29	0.52
75	22.09	35.57	5.01	104	24.65	0.48
100	20.16	35.68	5.01	101	25.25	0.39
150	19.90	35.66	5.01	100	25.31	0.42
200	19.35	35.59	4.91	97	25.40	0.42
300	18.42	35.55	4.51	88	25.60	0.52
500	14.35	35.34	4.81	86	26.39	0.65
750	9.58	34.74	4.36	70	26.84	1.16
1000	6.92	34.51	4.36	66	27.06	1.35
1500	3.68	34.52	4.08	57	27.46	1.94

DATE: 6.ii.58. TIME: 2147 hrs STATION NO.: 27
 LATITUDE: 34°28' S. LONGITUDE: 153°05' E.
 SEA: 2 WIND: FORCE 4 WIRE ANGLE: 30°, 10°
 DIRECTION ESE.

0	26.12	35.50	3.76		23.39	0.32
25	26.11	35.50	4.39	97	23.40	0.32
50	25.53	35.50	4.46	98	23.58	0.32
75	23.80	35.52	3.70	79	24.11	0.48
100	22.44	35.64	4.55	95	24.60	0.35
150	19.98	34.61	4.52	90	25.25	0.61
200	19.00	35.55	3.93	77	25.46	0.55
300	16.99	35.48	4.31	81	25.90	0.65
440	13.92	35.21	4.20	75	26.39	0.87
660	10.01	34.81	4.37	71	26.83	1.10
885	7.46	34.56	4.37	67	27.03	1.23
1340	4.28	34.52	3.82	54	27.40	1.74

F.R.V. "Derwent Hunter" Cruise 2 1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ % sat.	σ _t	Total P μg.at/l
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DATE: 7.11.58. TIME: 1210 hrs STATION NO.: 28
 LATITUDE: 34°51' S. LONGITUDE: 154°11' E.
 SEA: 2 WIND: FORCE 4 WIRE ANGLE: 20°, 20°
 DIRECTION ESE.

0	21.38	35.57	4.96	101	24.84	0.35
23	20.43	35.52	5.17	104	25.06	0.35
47	18.28	35.48	5.36	104	25.58	0.32
70	16.71	35.48	4.91	92	25.96	0.39
94	15.17	35.39	4.75	87	26.25	0.61
142	13.73	35.21	4.40	78	26.43	0.77
190	12.70	35.14	4.50	78	26.58	0.84
285	10.95	34.94	4.40	73	26.76	1.03
479	8.66	34.65	4.40	69	26.91	1.35
718	6.34	34.49	4.27	64	27.12	1.55
958	4.58	34.49	4.05	58	27.33	1.71
1432	2.89	34.60	3.43	47	27.59	1.97

DATE: 8.11.58. TIME: 1800 hrs STATION NO.: 29
 LATITUDE: 35°33' S. LONGITUDE: 155°39' E.
 SEA: 3 WIND: FORCE 5 WIRE ANGLE: 50°, 30°
 DIRECTION ESE.

0	22.31	35.39	4.96	103	24.45	0.45
22	18.25	35.44	5.32	103	25.56	0.39
43	17.12	35.52	5.08	96	25.90	0.35
65	15.29	35.37	5.21	95	26.22	0.48
85	14.62	35.37	5.06	91	26.36	0.68
130	13.75	35.30	4.81	85	26.49	0.71
172	12.97	35.25	4.86	85	26.60	0.71
260	11.38	35.08	4.74	80	26.78	0.97
378	10.30	34.87	4.53	74	26.82	1.13
582	7.87	34.58	4.30	67	26.99	1.39
800	6.02	34.49	4.21	62	27.16	1.61
1240	3.41	34.56	3.69	51	27.52	1.87

F.R.V. "Derwent Hunter" Cruise 2 1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ ‰ sat.	σ _t	Total P μg.at/l
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DATE: 9.11.58. TIME: 2202 hrs STATION NO.: 30
 LATITUDE: 36°12' S. LONGITUDE: 157°08' E.
 SEA: 3 WIND: FORCE 4 WIRE ANGLE: 30°, 10°
 DIRECTION E.

0	22.01	35.53	5.29	109	24.64	0.39
25	21.80	35.57	4.91	101	24.73	0.39
50	18.59	35.46	5.24	102	25.50	0.42
75	16.27	35.39	4.11	77	26.00	0.68
100	15.59	35.34	4.18	77	26.12	0.71
150	14.77	35.35	4.86	88	26.31	0.68
200	13.47	35.25	4.96	87	26.50	0.77
300	11.33	34.92	4.14	69	26.67	1.06
454	9.69	34.76	4.36	70	26.83	1.29
684	7.26	34.52	4.30	66	27.03	1.55
912	5.62	34.47	4.18	61	27.20	1.55
1370	3.42	34.56	3.53	49	27.51	1.97

DATE: 10.11.58. TIME: 1920 hrs STATION NO.: 31
 LATITUDE: 36°24' S. LONGITUDE: 158°38' E.
 SEA: 2 WIND: FORCE 3 WIRE ANGLE: 10°, 0°
 DIRECTION N.

0	20.96	35.61	4.86	99	24.99	0.45
25	20.85	35.59	4.96	101	25.00	0.48
50	20.75	35.61	4.94	100	25.05	0.48
75	17.79	35.50	3.86	74	25.72	0.61
100	16.67	35.41	3.92	74	25.92	0.61
150	15.03	35.37	4.62	84	26.27	0.71
200	14.45	35.37	4.96	89	26.40	0.61
300	12.76	35.17	4.89	85	26.60	0.87
500	10.26	34.85	4.38	72	26.80	1.19
750	7.43	34.56	4.36	67	27.03	1.55
1000	5.58	34.47	4.14	61	27.21	1.77
1500	3.23	34.58	3.51	48	27.55	2.09

F.R.V. "Derwent Hunter" Cruise 2 1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ ‰ sat.	σ _t	Total P μg.at/l
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DATE: 11.ii.58. TIME: 1005 hrs STATION NO.: 32
 LATITUDE: 35°43' S. LONGITUDE: 158°56' E.
 SEA: 2 WIND: FORCE 3 WIRE ANGLE: 30°, 20°
 DIRECTION N.

0	22.07	35.41	5.01	104	24.53	0.32
25	20.68	35.48	5.03	102	24.96	0.35
50	19.01	35.50	5.29	104	25.42	0.35
75	17.00	35.46	5.06	96	25.89	0.43
100	15.96	35.44	4.86	90	26.11	0.58
150	14.88	35.50	5.25	95	26.40	0.39
200	14.27	35.34	4.83	87	26.41	0.61
300	12.94	35.19	4.86	85	26.57	0.77
465	10.38	34.85	4.18	69	26.78	1.10
700	7.92	34.58	4.30	67	26.98	1.39
934	6.21	34.49	4.14	62	27.14	1.71
1404	3.50	34.56	3.51	49	27.51	2.03

DATE: 12.11.58. TIME: 0033 hrs STATION NO.: 33
 LATITUDE: 35°00' S. LONGITUDE: 157°29' E.
 SEA: 4 WIND: FORCE 4 WIRE ANGLE: 10°, 0
 DIRECTION W.

0	22.71	35.37	4.44	93	24.32	0.32
25	22.35	35.41	4.72	98	24.45	0.35
50	18.63	35.55	5.10	99	25.55	0.39
75	17.14	35.48	4.81	91	25.86	0.42
100	16.18	35.46	4.62	86	26.08	0.48
150	14.70	35.37	4.62	83	26.33	0.61
200	13.71	35.26	4.54	80	26.47	0.68
300	12.07	35.07	4.62	79	26.64	0.81
489	9.31	34.72	4.40	70	26.87	1.19
740	7.19	34.52	4.30	65	27.04	1.39
984	5.29	34.47	4.11	60	27.24	1.68
1478	3.08	34.58	3.49	48	27.57	1.97

F.R.V. "Derwent Hunter" Cruise 3 1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ o/o sat.	σ _t	Total P μg.at/l
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DATE: 20.11.58. TIME: 0020 hrs STATION NO.: 34
 LATITUDE: 34°11' S. LONGITUDE: 151°20' E.

WIRE ANGLE: 0

0	25.03	35.30	4.70	102	23.58	0.39
25	21.49	35.30	4.98	102	24.61	0.39
50	17.24	35.35	3.70	70	25.75	0.87

DATE: 20.11.58. TIME: 0150 hrs STATION NO.: 35
 LATITUDE: 34°12' S. LONGITUDE: 151°26' E.

WIRE ANGLE: 0

0	24.78	35.37	4.64	100	23.72	0.39
25	22.25	35.41	4.23	88	24.48	0.42
50	18.16	35.43	3.64	70	25.58	1.61

DATE: 20.11.58. TIME: 0830 hrs STATION NO.: 36
 LATITUDE: 34°22' S. LONGITUDE: 151°23' E.

WIRE ANGLE: 10°

0	25.08	35.28	4.64	101	23.55	0.48
25	24.30	35.35	4.64	100	23.84	0.84
50	20.65	35.52			25.00	0.84
75	17.46	35.43	3.77	72	25.75	0.68
100	16.18	35.28	3.72	69	25.94	0.81
150	15.09	35.30	4.26	77	26.20	
200	13.91	35.21	4.26	76	26.39	0.94
300	11.59	34.90	4.12	69	26.61	1.03

CO₂ UPTAKE

INCUBATION		Depth	ACTIVITY			PRODUCTION	
Method	Period		Light	Dark	Net	mgC/m ³	gC/day/m ²

DATE: 19.11.58 TIME: 2400 STATION NO.: 34

Bath	4 hrs	0	251	33	218	0.20	
		25	573	4	569	0.53	

DATE: 20.11.58 TIME: 0130 STATION NO.: 35

Bath	4 hrs	0	796	14	782	0.72	
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DATE: 20.11.58 TIME: 0445 STATION NO.: 36

<u>In situ</u>	½ day	0	166	2	164	1.32	
		0	126	0	126	1.01	

DATE: 20.11.58 TIME: 0520 STATION NO.: 36

Bath	4 hrs	0	494	0	494	0.54	0.22
		25	312	0	312	0.34	
		50	154	0	154	0.17	
		100	3	1	2	0	

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 20.11.58

STATION NO.: 36

LATITUDE: 34°22' S. LONGITUDE: 151°23' E. DEPTH 1% S.L.: 70 m

SOLAR ALT.: 11°

0627

0	100
10	72
20	44
30	25
40	11
50	5.3
60	2.8
70	1.9
80	0.9

DATE: 20.11.58

STATION NO.: 36

LATITUDE: 34°22' S. LONGITUDE: 151°23' E. DEPTH 1% S.L.: 88 m

SOLAR ALT.: 29°

0800

0	100
10	75
20	55
30	36
40	20
50	8.4
60	4.1
70	2.5
80	1.5

CO₂ UPTAKE

INCUBATION		Depth	ACTIVITY			PRODUCTION	
Method	Period		Light	Dark	Net	mgC/m ³	gC/day/m ²

DATE: 20.11.58 TIME: 0930 STATION NO.: 36
 LATITUDE: 34°22' S. LONGITUDE: 151°23' E.

Bath	4 hrs	0	1277	4	1273	1.27
		25	1561	4	1557	1.56

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 20.11.58

STATION NO.: 36

LATITUDE: 34°22' S. LONGITUDE: 151°23' E. DEPTH 1% S.L.: 78 m

SOLAR ALT.: 53°

1000

0	100
10	82
20	68
30	42
40	26
50	13
60	8.3
70	4.6
80	2.9

DATE: 20.11.58

STATION NO.: 36

LATITUDE: 34°22' S. LONGITUDE: 151°23' E. DEPTH 1% S.L.: 96 m

SOLAR ALT.: 55°

1400

0	100
10	79
20	53
30	26
40	12
50	6.6
60	4.2
70	2.6
80	1.9

CO₂ UPTAKE

INCUBATION		Depth	ACTIVITY			PRODUCTION	
Method	Period		Light	Dark	Net	mgC/m ³	gC/day/m ²

DATE: 20.11.58 TIME: 1200 STATION NO.: 36
 LATITUDE: 34°22' S. LONGITUDE: 151°23' E.

<u>In situ</u>	½ day	0	905	11	894	7.17
		0	888	18	870	6.98

DATE: 20.11.58 TIME: 1345 STATION NO.: 36
 LATITUDE: 34°22' S. LONGITUDE: 151°23' E.

Bath	4 hrs	0	540	6	534	0.54
		25	3469	9	3460	3.47

DATE: 20.11.58 TIME: 1730 STATION NO.: 36
 LATITUDE: 34°22' S. LONGITUDE: 151°23' E.

Bath	4 hrs	.0	282	16	266	0.27
		25	895	18	877	0.88

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 20.11.58

STATION NO.: 36

LATITUDE: 34°22' S. LONGITUDE: 151°23' E.

DEPTH 1% S.L.: 73 m

SOLAR ALT.: 8°

1800

0	100
10	63
20	39
30	20
40	8.3
50	4.8
60	2.4

F.R.V. "Derwent Hunter"

Cruise 4

1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ % sat.	σ_t	Total P µg.at/l
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DATE: 28.11.58. TIME: 0435 hrs STATION No.: 39
 LATITUDE: 34°24' S. LONGITUDE: 151°40' E.

SEA: 3 WIND: FORCE 5 WIRE ANGLE: 50°, 35°
 DIRECTION S.

0	25.80	35.53	4.52	99	23.52	0.29
22	25.78	35.53	4.52	99	23.52	0.32
45	25.58	35.44	4.44	97	23.51	0.32
67	24.60	35.37	4.52	97	23.77	0.29
89	23.05	35.55	3.88	82	24.35	0.52
134	20.73	35.62	4.26	86	25.06	0.48
177	19.55	35.62	4.29	85	25.37	0.48
265	16.99	35.39	3.80	72	25.84	0.84
420	12.10	34.99	4.07	69	26.58	1.00
664	8.46	34.60	4.16	65	26.91	1.23
912	6.24	34.43	4.12	61	27.09	1.39
1410	3.48	34.52	3.52	49	27.48	1.84

DATE: 28.11.58. TIME: 1205 hrs STATION No.: 40
 LATITUDE: 34°28' S. LONGITUDE: 152°07' E.

SEA: 3 WIND: FORCE 5 WIRE ANGLE: 55°, 50°, 27°*
 DIRECTION S.

0	25.92	35.41	4.73	104	23.39	0.45
19	25.82	35.39	3.60	79	23.41	0.74
36	25.95	35.41	4.64	102	23.38	0.39
55	25.52	35.41	4.61	101	23.51	0.39
72	23.95	35.44	4.61	98	24.00	0.35
108	23.02	35.53	4.70	99	24.35	0.39
140	20.74	35.44	4.52	91	24.91	0.48
200*	17.57	35.44	3.70	71	25.73	0.77
324	15.55	35.37	4.23	78	26.16	0.77
478	11.92	35.05	4.39	75	26.66	1.03
610	9.91	34.78	4.26	69	26.81	1.29
980	6.85	34.51	4.31	65	27.01	1.48

F.R.V. "Derwent Hunter" Cruise 4 1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ ‰ sat.	σ _t	Total P μg.at/l
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DATE: 28.ii.58. TIME: 1935 hrs STATION No.: 41
 LATITUDE: 34°25' S. LONGITUDE: 152°23' E.

SEA: 2 WIND: FORCE 5 DIRECTION S. WIRE ANGLE: 35°, 5°

0	25.30	35.46	4.52	98	23.62	0.42
25	25.05	35.46	4.49	97	23.69	0.52
50	24.75	35.50	4.73	102	23.82	0.45
75	24.45	35.50	4.70	101	23.91	0.42
100	24.30	35.53	4.70	101	23.97	0.42
150	21.23	35.53	4.55	93	24.85	0.48
195	18.58	35.52	3.54	69	25.54	0.81
280	15.81	35.37	4.20	77	26.10	0.74
330	14.99	35.32	4.23	77	26.23	0.81
494	11.96	35.01	4.37	74	26.63	1.06
660	9.59	34.72	4.70	76	26.82	1.23
984	6.03	34.43	3.93	58	27.13	1.65

DATE: 1.iii.58. TIME: 0322 hrs STATION No.: 42
 LATITUDE: 34°37' S. LONGITUDE: 152°50' E.

SEA: 2 WIND: FORCE 3 DIRECTION ESE. WIRE ANGLE: 20°, 45°

0	25.32	35.44	4.55	99	23.59	0.42
17	25.28	35.46	4.55	99	23.62	0.35
32	24.68	35.50	4.61	100	23.84	0.32
47	24.03	35.53	4.87	104	24.06	0.35
62	23.95	35.53	4.79	102	24.08	0.39
94	23.83	35.55	4.67	100	24.12	0.39
132	22.60	35.64	3.80	79	24.55	0.55
210	19.22	35.55	3.70	73	25.40	0.65
495	13.02	35.12	4.31	75	26.50	0.90
742	9.02	34.65	4.46	71	26.86	1.23
989	6.35	34.45	4.29	64	27.09	1.52
1484	3.28	34.52	3.50	48	27.50	1.90

F.R.V. "Derwent Hunter"

Cruise 4

1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ % sat.	σ _t	Total P μg.at/l
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DATE: 1.iii.58 TIME: 1940 hrs STATION NO.: 44

LATITUDE: 35°02' S. LONGITUDE: 154°14' E.

SEA: 2 WIND: FORCE 2 WIRE ANGLE: 20°, 10°
DIRECTION N.

0	21.48	35.52	5.03	103	24.77	0.48
25	20.80	35.52	5.08	103	24.96	0.42
50	18.60	35.52	5.10	99	25.53	0.39
75	15.90	35.44	4.87	90	26.12	0.48
100	15.00	35.37	4.64	84	26.28	0.71
150	13.55	35.25	4.55	80	26.48	0.77
200	12.23	35.08	4.42	76	26.62	1.00
300	10.18	34.83	4.37	71	26.81	1.10
500	7.90	34.56	4.42	68	26.96	1.39
750	5.93	34.47	4.20	62	27.16	1.74
1000	4.33	34.47	3.80	54	27.35	1.97
1500	2.69	34.60	3.50	48	27.61	2.09

DATE: 2.iii.58 TIME: 1017 hrs STATION NO.: 46

LATITUDE: 35°38' S. LONGITUDE: 155°41' E.

SEA: 2 WIND: FORCE 4 WIRE ANGLE: 40°, 25°, 25°*
DIRECTION NE.

0	21.77	35.53	5.01	103	24.71	0.55
24*	20.90	35.55	5.16	105	24.95	0.39
48	19.32	35.44	5.31	105	25.29	0.39
73	15.96	35.37	5.34	99	26.07	0.58
97	14.48	35.37	4.87	88	26.39	0.58
146	13.43	35.28	4.67	82	26.54	0.68
195	12.68	35.19	5.08	88	26.62	0.77
293	10.91	34.96	4.37	73	26.77	1.15
394	9.38	34.72	4.49	72	26.86	1.29
615	7.16	34.52	4.39	67	27.04	1.52
842	5.61	34.47	4.20	61	27.20	1.77
1319	3.50	34.52	3.54	49	27.48	2.06

F.R.V. "Derwent Hunter"

Cruise 4

1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l.	O ₂ % sat.	σ _t	Total P μg.at/l
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DATE: 3.111.58 TIME: 0010 hrs STATION NO.: 49
 LATITUDE: 36°03' S. LONGITUDE: 157°08' E.
 SEA: 2 WIND: FORCE 2 WIRE ANGLE: 20°, 0
 DIRECTION N.

0	21.43	35.48	4.93	101	24.76	0.42
25	21.50	35.50	5.05	103	24.76	0.42
50	18.48	35.55	5.03	98	25.59	0.55
75	16.06	35.48	4.67	87	26.12	0.74
100	15.26	35.41	4.58	84	26.25	0.42
150	14.32	35.35	4.29	77	26.41	0.77
200	13.50	35.25	4.64	82	26.49	0.77
300	11.86	35.07	4.49	76	26.68	1.10
492	9.13	34.67	4.42	70	26.86	1.23
738	7.17	34.52	4.39	67	27.04	1.61
984	5.54	34.45	4.10	60	27.19	1.52
1476	3.29	34.54	3.50	48	27.52	2.15

DATE: 3.111.58 TIME: 1230 hrs STATION NO.: 51
 LATITUDE: 36°25' S. LONGITUDE: 158°28' E.
 SEA: 2 WIND: FORCE 4 WIRE ANGLE: 30°, 10°
 DIRECTION N.

0	21.14	35.55	4.87	99	24.89	0.35
25	20.47	35.61	4.87	98	25.12	0.32
50	20.35	35.62	4.85	98	25.16	0.29
75	18.00	35.55	4.12	80	25.71	0.52
100	17.31	35.48	3.85	73	25.82	0.61
150	15.66	35.43	4.42	81	26.17	0.65
200	14.70	35.39	4.70	85	26.36	0.58
300	13.42	35.25	4.93	87	26.51	0.71
442	11.94	35.07	5.31	90	26.67	1.71
678	8.71	34.65	4.58	72	26.91	1.29
927	6.54	34.47	4.31	65	27.09	1.52
1426	3.63	34.51	3.67	51	27.45	1.71

F.R.V. "Derwent Hunter" Cruise 4 1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ o/o sat.	σ _t	Total P μg.at/l
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DATE: 5.111.58 TIME: 0005 hrs STATION NO.: 55
 LATITUDE: 34°25' S. LONGITUDE: 156°53' E.
 SEA: 3 WIND: FORCE 5 WIRE ANGLE: 35°, 10°
 DIRECTION N.

0	25.48	35.50	4.03	88	23.59	0.45
25	25.58	35.52	4.49	98	23.57	0.45
50	21.78	35.53	4.90	101	24.70	0.55
75	19.81	35.59	4.55	91	25.28	0.39
100	19.10	35.55	4.82	95	25.43	0.58
150	15.59	35.35	3.97	73	26.13	0.90
200	14.57	35.32	4.31	78	26.32	0.87
300	13.25	35.30	4.70	82	26.59	0.81
378	11.36	34.97	4.44	74	26.71	0.97
586	8.73	34.65	4.76	75	26.90	1.35
809	7.07	34.51	4.39	67	27.04	1.48
1278	4.24	34.45	3.82	54	27.34	1.94

DATE: 5.111.58 TIME: 1508 hrs STATION NO.: 56
 LATITUDE: 33°59' S. LONGITUDE: 154°53' E.
 SEA: 2 WIND: FORCE 2 WIRE ANGLE: 35°, 10°
 DIRECTION N.

0	24.15	35.52	4.55	97	24.01	0.32
25	20.44	35.48	4.98	100	25.02	0.32
50	19.50	35.50	5.12	101	25.29	0.32
75	17.08	35.46	4.82	91	25.87	0.35
100	15.60	35.41	4.93	91	26.17	0.52
150	14.35	35.35	4.76	85	26.40	0.58
200	13.28	35.25	4.64	81	26.54	1.19
300	11.54	35.01	4.55	77	26.71	1.16
442	9.39	34.72	4.46	71	26.85	1.23
670	7.23	34.51	4.37	67	27.02	1.65
916	5.57	34.51	4.23	62	27.24	1.71
1414	3.28	34.56	3.50	48	27.53	2.20

F.R.V. "Derwent Hunter"

Cruise 4

1958

Depth (m)	Temp. °C	S ‰	O ₂ ml/l	O ₂ % sat.	σ_t	Total P µg.at/l
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DATE: 6.iii.58 TIME: 0030 hrs STATION NO.: 57
 LATITUDE: 34°04' S. LONGITUDE: 154°31' E.
 SEA: 2 WIND: FORCE 4 WIRE ANGLE: 50°, 25°, 0*
 DIRECTION ENE.

0	25.47	35.53	4.58	100	23.62	0.42
22	25.50	35.52	4.23	93	23.60	0.45
42	25.50	35.52	4.58	100	23.60	0.42
64	25.43	35.53	4.39	96	23.63	0.39
84	22.02	35.55	3.75	78	24.65	0.65
125	19.25	35.55	4.55	90	25.39	0.48
165	17.23	35.52	4.46	85	25.87	0.61
256	14.72	35.34	4.46	81	26.31	0.77
284	13.54	35.28	4.37	77	26.52	1.06
404*	11.02	34.90	4.37	73	26.71	1.10
506	9.30	34.69	4.42	71	26.84	1.26
720	7.77	34.85	4.42	68	27.01	1.45

DATE: 6.iii.58 TIME: 0647 hrs STATION NO.: 58
 LATITUDE: 34°02' S. LONGITUDE: 154°18' E.
 SEA: 2 WIND: FORCE 4 WIRE ANGLE: 12°, 12°
 DIRECTION NE.

0	25.60	35.59	4.46	98	23.62	0.23
25	25.65	35.57	4.58	101	23.59	0.32
50	23.96	35.59	4.58	98	24.12	0.26
75	23.02	35.55	4.42	93	24.36	0.23
100	21.92	35.61	4.16	86	24.72	0.61
150	19.70	35.62	4.26	85	25.34	0.45
200	18.65	35.62	4.39	86	25.60	0.45
300	15.58	35.37	3.93	72	26.15	0.74
492	10.95	35.03	4.67	78	26.82	1.13
740	7.10	34.54	4.46	68	27.07	1.42
988	5.81	34.45	4.29	63	27.16	1.68
1480	3.42	34.43	3.60	50	27.42	2.03

F.R.V. "Derwent Hunter" Cruise 5 1958

Depth (m)	Temp. °C	S ‰	O ₂ ml/l	O ₂ o/o sat.	σ _t	Total P μg.at/l
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DATE: 13.iii.58. TIME: 0822 hrs STATION No.: 59
 LATITUDE: 34°07' S. LONGITUDE: 151°35' E.

SEA: 2 WIND: FORCE 4 WIRE ANGLE: 15°, 0
 DIRECTION SSW.

0	21.48	35.37	5.14	105	24.67	0.32
25	21.53	35.34	5.29	108	24.63	0.35
50	20.05	35.39	5.32	106	25.07	0.35
75	17.55	35.48	5.29	101	25.76	0.48
100	16.09	35.39	4.83	90	26.05	0.42
150	14.08	35.26	4.91	88	26.39	0.58
200	12.58	35.10	4.89	84	26.57	1.06
300	10.86	34.90	4.77	79	26.75	1.10

DATE: 14.iii.58. TIME: 0816 hrs STATION No.: 60
 LATITUDE: 34°11' S. LONGITUDE: 152°23' E.

SEA: - WIND: - WIRE ANGLE: 45°, 0

0	23.33	35.41	4.91	104	24.17	0.45
18	23.15	35.41	4.86	102	24.22	0.35
36	20.45	35.44	4.94	99	24.99	0.32
54	19.33	35.43	5.24	103	25.28	0.26
72	18.45	35.52	4.30	84	25.57	0.48
110	16.50	35.39	4.07	76	25.95	0.74
146	14.67	35.17	3.98	72	26.20	0.94
224	12.61	35.01	4.17	72	26.50	1.00

DATE: 15.iii.58. TIME: 0814 hrs STATION No.: 61
 LATITUDE: 34°18' S. LONGITUDE: 152°52' E.

SEA: 3 WIND: FORCE 5 WIRE ANGLE: 0, 0
 DIRECTION S.

0	23.50	35.41	4.91	104	24.12	0.39
25	22.90	35.37	4.65	97	24.27	0.42
50	19.07	35.37	3.78	74	25.31	0.74
75	16.48	35.34	4.14	77	25.92	0.81
100	14.87	35.19	3.95	71	26.16	0.81
150	13.41	35.16	4.59	81	26.44	0.77
200	12.51	35.14	5.04	87	26.62	0.68
300	10.35	34.83	4.43	73	26.78	1.16

CO₂ UPTAKE

INCUBATION		Depth	ACTIVITY			PRODUCTION	
Method	Period		Light	Dark	Net	mgC/m ³	gC/day/m ²

DATE: 13.iii.58 TIME: 0445 STATION NO.: 59
 LATITUDE: 33°55' S. LONGITUDE: 151°43' E.

<u>In situ</u>	1 day	0	207	21	186	0.75	0.13
		25	570	61	509	2.04	
		50	458	33	425	1.70	
		100	15	0	15	0.06	

DATE: 13.iii.58 TIME: 0445 STATION NO.: 59
 LATITUDE: 33°55' S. LONGITUDE: 151°43' E.

Bath	4 hrs	0	254	19	235	0.26	0.16
		25	198	12	186	0.21	
		50	182	3	179	0.20	
		100	22	6	16	0.02	

DATE: 13.iii.58 TIME: 0945 STATION NO.: 59
 LATITUDE: 33°55' S. LONGITUDE: 151°43' E.

Bath	4 hrs	0	309	0	309	0.31	
		25	16	0	16	0.02	

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 13.iii.58

STATION NO.: 59

LATITUDE: 33°55' S. LONGITUDE: 151°43' E. DEPTH 1% S.L.: 119 m

SOLAR ALT.: 49°

0600

0	100
10	80
20	72
30	51
40	25
50	18
60	11
70	8.0
80	5.0

DATE: 13.iii.58

STATION NO.: 59

LATITUDE: 33°55' S. LONGITUDE: 151°43' E. DEPTH 1% S.L.: 118 m

SOLAR ALT.: 49°

1400

0	100
10	82
20	77
30	63
40	50
50	34
60	22
70	12
80	7.6

CO₂ UPTAKE

INCUBATION		Depth	ACTIVITY			PRODUCTION	
Method	Period		Light	Dark	Net	mgC/m ³	gC/day/m ²

DATE: 13.iii.58

TIME: 1345

STATION NO.: 59

LATITUDE: 33°55' S.

LONGITUDE: 151°43' E.

Bath	4 hrs	0	193	14	179	0.18
		25	286	18	268	0.27

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 13.iii.58

STATION NO.: 59

LATITUDE: 33°55' S. LONGITUDE: 151°43' E. DEPTH 1% S.L.: 110 m

SOLAR ALT.: 48°

1000

0	100
10	89
20	73
30	59
40	36
50	24
60	18
70	10
80	5.9

DATE: 13.iii.58

STATION NO.: 59

LATITUDE: 33°55' S. LONGITUDE: 151°43' E. DEPTH 1% S.L.: 114 m

SOLAR ALT.: 59°

1215

0	100
10	86
20	66
30	54
40	36
50	26
60	14
70	10
80	6.2

CO₂ UPTAKE

INCUBATION		Depth	ACTIVITY			PRODUCTION	
Method	Period		Light	Dark	Net	mgC/m ³	gC/day/m ²

DATE: 13.iii.58 TIME: 1730 STATION NO.: 59
 LATITUDE: 33°55' S. LONGITUDE: 151°43' E.

Bath	4 hrs	0	242	45	197	0.20
		25	122	0	122	0.12

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 13.111.58

STATION NO.: 59

LATITUDE: 33°55' S. LONGITUDE: 151°43' E. DEPTH 1/2 S.L.: 69 m

SOLAR ALT.: 6°

1745

0	100
10	69
20	43
30	26
40	13
50	8.6
60	5.3

CO₂ UPTAKE

INCUBATION		Depth	ACTIVITY			PRODUCTION	
Method	Period		Light	Dark	Net	mgC/m ³	gC/day/m ²

DATE: 14.iii.58 TIME: 0500 STATION NO.: 60
 LATITUDE: 34°11' S. LONGITUDE: 152°23' E.

<u>In situ</u>	1 day	0	336	43	293	1.18	0.13
		25	671	25	646	2.59	
		50	332	12	320	1.28	
		100	14	2	12	0.05	

DATE: 14.iii.58 TIME: 0500 STATION NO.: 60
 LATITUDE: 34°11' S. LONGITUDE: 152°23' E.

Bath	4 hrs	0	172	21	151	0.15	
		25	910	3	907	0.91	
		100	525	72	453	0.45	

DATE: 14.iii.58 TIME: 0600 STATION NO.: 60
 LATITUDE: 34°11' S. LONGITUDE: 152°23' E.

<u>In situ</u>	½ day	0	365	16	349	2.80	
		0	227	24	203	1.63	

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 14.iii.58

STATION NO.: 60

LATITUDE: 34°11' S. LONGITUDE: 152°23' E. DEPTH 1% S.L.: 98 m

SOLAR ALT.: 26°

0800

0	100
10	80
20	56
30	38
40	23
50	16
60	8.8
70	5.0

CO₂ UPTAKE

INCUBATION		Depth	ACTIVITY			PRODUCTION	
Method	Period		Light	Dark	Net	mgC/m ³	gC/day/m ²

DATE: 14.iii.58 TIME: 0945 STATION NO.: 60
 LATITUDE: 34°11' S. LONGITUDE: 152°23' E.

Bath	4 hrs	0	1062	15	1047	1.05
		25	323	27	296	0.30

DATE: 14.iii.58 TIME: 1345 STATION NO.: 60
 LATITUDE: 34°11' S. LONGITUDE: 152°23' E.

Bath	4 hrs	0	690	11	679	0.71
		0	769	6	763	0.80
		0	572	12	560	0.59
		0	707	0	707	0.74

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 14.iii.58

STATION NO.: 60

LATITUDE: 34°11' S. LONGITUDE: 152°23' E.

DEPTH 1% S.L.: 97 m

SOLAR ALT.: 51°

1020

0	100
10	84
20	69
30	60
40	50
50	36
60	25
70	13
80	5.3

DATE: 14.iii.58

STATION NO.: 60

LATITUDE: 34°11' S. LONGITUDE: 152°23' E.

DEPTH 1% S.L.: 115 m

SOLAR ALT.: 59°

1200

0	100
10	88
20	74
30	58
40	52
50	40
60	26
70	16
80	8.8

CO₂ UPTAKE

INCUBATION		Depth	ACTIVITY			PRODUCTION	
Method	Period		Light	Dark	Net	mgC/m ³	gC/day/m ²

DATE: 14.iii.58

TIME: 1745

STATION NO.: 60

LATITUDE: 34°11' S.

LONGITUDE: 152°23' E.

Bath	4 hrs	25	274	35	239	0.24
		25	263	87	176	0.18
		25	102	66	36	0.04
		25	182	20	162	0.16

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 14.iii.58

STATION NO.: 60

LATITUDE: 34°11' S. LONGITUDE: 152°23' E.

DEPTH 1% S.L.: 153 m

SOLAR ALT.: 58°

1410

0	100
10	82
20	55
30	52
40	54
50	50
60	42
70	19
80	26

DATE: 14.iii.58

STATION NO.: 60

LATITUDE: 34°11' S. LONGITUDE: 152°23' E.

DEPTH 1% S.L.: 107 m

SOLAR ALT.: 24°

1610

0	100
10	80
20	85
30	70
40	58
50	41
60	24
70	17
80	8.7

CO₂ UPTAKE

INCUBATION		Depth	ACTIVITY			PRODUCTION	
Method	Period		Light	Dark	Net	mgC/m ³	gC/day/m ²

DATE: 15.iii.58 TIME: 0500 STATION NO.: 61
 LATITUDE: 34°18' S. LONGITUDE: 152°52' E.

Bath	4 hrs	25	728	16	712	0.71
		50	568	16	552	0.55
		100	30	18	12	0.01

DATE: 15.iii.58 TIME: 0600 STATION NO.: 61
 LATITUDE: 34°18' S. LONGITUDE: 152°52' E.

<u>In situ</u>	½ day	0	539	34	505	4.05
		0	427	13	414	3.32

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 15.iii.58 STATION NO.: 61
 LATITUDE: 34°18' S. LONGITUDE: 152°52' E. DEPTH 1/2 S.L.: 73 m
 SOLAR ALT.: 27°

0805

0	100
10	76
20	56
30	39
40	19
50	9.0
60	4.7
70	3.1
80	1.8

DATE: 15.iii.58 STATION NO.: 61
 LATITUDE: 34°18' S. LONGITUDE: 152°52' E. DEPTH 1/2 S.L.: 108 m
 SOLAR ALT.: 47°

1000

0	100
10	84
20	63
30	54
40	32
50	19
60	9.4
70	6.8
80	4.8

CO₂ UPTAKE

INCUBATION		Depth	ACTIVITY			PRODUCTION	
Method	Period		Light	Dark	Net	mgC/m ³	gC/day/m ²

DATE: 15.iii.58 TIME: 1300 STATION NO.: 61
 LATITUDE: 34°18' S. LONGITUDE: 152°52' E.

Bath	4 hrs	0	2103	67	2036	2.04
		0	1748	12	1736	1.74
		0	1155	9	1146	1.14
		0	1225	48	1177	1.18

DATE: 15.iii.58 TIME: 1700 STATION NO.: 61
 LATITUDE: 34°18' S. LONGITUDE: 152°52' E.

Bath	4 hrs	25	1095	464	631	0.63
		25	770	41	729	0.73

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 15.iii.58

STATION NO.: 61

LATITUDE: 34°18' S. LONGITUDE: 152°52' E.

DEPTH 1% S.L.: 114 m

SOLAR ALT.: 58°30'

1200

0	100
10	76
20	58
30	53
40	38
50	23
60	13
70	8.4
80	5.3

DATE: 15.iii.58

STATION NO.: 61

LATITUDE: 34°18' S. LONGITUDE: 152°52' E.

DEPTH 1% S.L.: 75 m

SOLAR ALT.: 47°

1400

0	100
10	86
20	63
30	44
40	26
50	13
60	6.7
70	5.1
80	2.7

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 15.iii.58

STATION NO.: 61

LATITUDE: 34°18' S. LONGITUDE: 152°52' E.

DEPTH 1% S.L.: 63 m

SOLAR ALT.: 25°30'

1600

0	100
10	90
20	67
30	44
40	18
50	7.1
60	4.0
70	2.8
80	1.9

F.R.V. "Derwent Hunter" Cruise 6 1958

Depth (m)	Temp. °C	S ‰	O ₂ ml/l	O ₂ ‰ sat.	σ _t	Total P μg.at/l
DATE: 9.iv.58.		TIME: 1915 hrs		STATION No.: 62		
LATITUDE: 34°10' S.		LONGITUDE: 151°28' E.				
SEA: 1	WIND:	FORCE 2	DIRECTION E.		WIRE ANGLE: 10°	
0	22.68	35.53	4.95	102	24.45	0.35
25	22.66	35.70	4.86	102	24.56	0.32
50	19.15	35.59	5.14	101	25.45	0.35
100	17.86	35.57	4.84	93	25.76	0.42
150	15.48	35.34	4.32	79	26.14	0.97
200	14.18	35.26	4.52	81	26.37	0.81

DATE: 9.iv.58.		TIME: 2248 hrs		STATION No.: 63		
LATITUDE: 34°12' S.		LONGITUDE: 151°34' E.				
SEA: 1	WIND:	FORCE 2	DIRECTION E.		WIRE ANGLE: 0, 0	
0	21.78	35.57	4.98	102	24.73	0.35
25	21.70	35.57	4.95	102	24.76	0.39
50	19.63	35.62	4.55	90	25.35	0.42
75	19.15	35.59	5.19	102	25.45	0.32
100	18.64	35.55	5.21	102	25.55	0.29
150	16.80	35.41	4.60	87	25.90	0.61
200	14.53	35.28	3.93	71	26.30	0.77
300	12.83	35.10	3.99	69	26.53	0.94
500	9.92	34.76	4.52	73	26.80	1.16
650	8.02	34.58	4.60	71	26.96	1.39

F.R.V. "Derwent Hunter"

Cruise 6

1958

Depth (m)	Temp. °C	S ^o / _{oo}	O ₂ ml/l	O ₂ o/o sat.	σ _t	Total P μg.at/l
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DATE: 10.iv.58.

TIME: 0240 hrs

STATION No.: 64

LATITUDE: 34°12' S.

LONGITUDE: 151°43' E.

SEA: 1 WIND: FORCE 2
DIRECTION E.

WIRE ANGLE: 0, 0, 0*

0*	20.08	35.57	5.07	101	25.19	0.42
25	19.75	35.64	5.19	103	25.33	0.42
50	19.45	35.57	4.83	96	25.36	0.61
75	19.22	35.55	5.07	100	25.40	0.42
100	18.63	35.50	3.91	76	25.51	0.45
150	16.40	35.39	4.19	78	25.97	0.74
200	14.01	35.19	3.80	68	26.35	0.77
300	12.82	35.08	4.77	83	26.51	0.74
500	8.90	34.61	4.38	69	26.84	1.32
750	6.70	34.45	4.32	65	27.04	1.48
1000	5.22	34.42	4.15	60	27.20	1.81
1500	3.00	34.52	3.38	47	27.51	1.97

DATE: 10.iv.58.

TIME: 0735 hrs

STATION No.: 65

LATITUDE: 34°13' S.

LONGITUDE: 152°05' E.

SEA: 1 WIND: FORCE 2
DIRECTION E.

WIRE ANGLE: 0, 0, 0*

0*	19.75	35.55	4.83	96	25.27	0.42
25	19.65	35.55	5.21	104	25.39	0.45
50	18.54	35.50	4.95	96	25.54	0.35
75	18.04	35.44	5.10	98	25.62	0.35
100	17.32	35.43	4.74	90	25.78	0.35
150	14.86	35.32	4.22	76	26.30	0.42
200	14.58	35.19	4.19	75	26.53	0.81
300	11.41	34.90	3.30	55	26.63	1.35
500	8.25	34.56	4.22	66	26.89	1.16
750	6.00	34.43	3.59	53	27.12	1.45
1000	4.70	34.43	3.85	54	27.27	1.81
1500	2.96	34.54	3.36	46	27.51	1.94

F.R.V. "Derwent Hunter" Cruise 6 1958

Depth (m)	Temp. °C	S ‰	O ₂ ml/l	O ₂ o/o sat.	σ _t	Total P μg.at/l
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DATE: 10.iv.58. TIME: 1505 hrs STATION No.: 66
 LATITUDE: 34°29' S. LONGITUDE: 152°49' E.

SEA: 1 WIND: FORCE 2 WIRE ANGLE: 0, 0, 0*
 DIRECTION SE.

0*	22.93	35.44	4.79	100	24.30	0.42
25	22.80	35.48	4.79	100	24.37	0.32
50	20.70	35.48	5.05	102	24.95	0.32
75	17.93	35.37	4.25	82	25.60	0.68
100	15.97	35.30	3.87	72	26.00	0.74
150	14.02	35.17	4.22	75	26.34	0.87
200	12.50	34.96	3.87	67	26.47	0.87
300	10.03	34.74	3.96	64	26.77	1.32
500	7.33	34.40	4.15	63	26.92	
750	5.83	34.42	3.87	57	27.13	1.39
1000	4.25	34.42	3.82	54	27.31	1.39
1500	2.74	34.56	3.42	47	27.58	2.03

DATE: 10.iv.58. TIME: 2255 hrs STATION No.: 67
 LATITUDE: 34°54' S. LONGITUDE: 153°42' E.

SEA: 1 WIND: FORCE 2 WIRE ANGLE: 52°, 20°, 0*
 DIRECTION SE.

0*	24.47	35.34	4.82	104	23.78	0.32
21	23.76	35.41	4.82	102	24.04	
41	22.84	35.39	4.70	98	24.30	0.32
61	22.25	35.43	4.32	90	24.49	0.42
80	20.03	35.41	3.77	75	25.08	0.42
118	17.07	35.32	3.93	74	25.76	0.52
160	15.19	35.25	4.25	77	26.13	1.35
244	12.44	34.96	4.42	76	26.49	0.65
435	8.30	34.56	4.47	70	26.90	1.39
470	7.43	34.49	4.58	70	26.97	1.58
626	6.35	34.43	4.35	65	27.08	1.61
934	4.50	34.47	4.25	61	27.33	1.81

F.R.V. "Derwent Hunter" Cruise 6 1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ ‰ sat.	σ _t	Total P μg.at/l
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DATE: 12.iv.58. TIME: 0525 hrs STATION No.: 71
 LATITUDE: 35°40' S. LONGITUDE: 157°01' E.
 SEA: 2 WIND: FORCE 3 WIRE ANGLE: 0, 0, 0*
 DIRECTION E.

0*	22.83	35.52	4.74	99	24.40	0.29
25	22.85	35.50	3.88	81	24.38	0.35
50	22.76	35.50	4.49	94	24.40	0.29
75	20.48	35.55	3.93	79	25.07	0.39
100	19.70	35.55	4.19	83	25.28	0.39
150	17.90	35.48	4.35	84	25.68	0.48
200	16.07	35.39	4.19	78	26.05	0.45
300	14.83	35.34	4.55	82	26.29	0.48
500	11.90	35.01	4.89	83	26.63	0.68
750	8.09	35.54	4.52	70	26.90	1.03
1000	6.27	34.45	4.35	65	27.08	1.29
1500	3.46	34.51	3.65	51	27.45	1.74

DATE: 12.iv.58. TIME: 2035 hrs STATION No.: 74
 LATITUDE: 36°20' S. LONGITUDE: 158°35' E.
 SEA: 1 WIND: FORCE 2 WIRE ANGLE: 5°, 0, 0*
 DIRECTION E.

0*	21.38	35.48	5.12	105	24.78	0.32
25	21.38	35.48	4.88	100	24.78	0.32
50	20.79	35.48	4.95	100	24.94	0.32
75	18.05	35.46	4.18	81	25.63	0.52
100	16.15	35.39	4.25	79	26.03	0.61
150	14.70	35.26	4.18	75	26.25	0.87
200	14.05	35.25	4.35	78	26.38	0.58
300	12.34	35.07	4.62	79	26.59	0.81
500	9.16	34.69	4.22	67	26.85	1.29
750	7.05	34.54	4.22	64	27.05	1.29
1000	5.38	34.43	4.02	59	27.18	1.58
1500	3.27	34.54	3.62	50	27.49	1.90

F.R.V. "Derwent Hunter" Cruise 6 1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ ‰ sat.	σ _t	Total P μg.at/l
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DATE: 13.iv.58. TIME: 0740 hrs STATION No.: 75
 LATITUDE: 35°27' S. LONGITUDE: 159°11' E.
 SEA: 1 WIND: FORCE 2 DIRECTION E. WIRE ANGLE: 10°, 0, 0*

0*	23.27	35.50	4.92	104	24.26	0.26
25	23.04	35.50	4.35	92	24.32	0.48
50	22.12	35.44	4.92	102	24.54	0.26
75	19.32	35.46	4.13	81	25.31	0.39
100	18.14	35.48	4.00	77	25.62	0.48
150	16.65	35.43	4.06	76	25.94	0.42
200	15.03	35.32	4.43	80	26.23	0.48
300	13.04	35.17	5.10	89	26.53	0.65
500	10.05	34.78	4.19	68	26.60	1.06
750	6.55	34.52	4.54	68	27.10	1.29
1000	5.68	34.43	4.32	63	27.14	1.26
1500	3.43	34.52	3.68	51	27.46	1.65

DATE: 13.iv.58. TIME: 0002 hrs STATION No.: 78
 LATITUDE: 34°54' S. LONGITUDE: 157°06' E.
 SEA: 2 WIND: FORCE 3 DIRECTION NE. WIRE ANGLE: 17°, 5°, 0*

0*	21.78	35.46	4.86	100	24.65	0.58
25	21.77	35.46	5.19	107	24.65	0.45
50	21.70	35.44	4.95	102	24.65	0.42
75	19.05	35.46	4.38	86	25.38	0.74
100	17.47	35.46	4.09	78	25.77	0.90
150	16.10	35.34	4.49	83	26.00	0.81
200	15.00	35.32	4.65	84	26.23	0.65
300	13.05	35.10	4.16	73	26.48	0.90
500	11.25	34.90	4.28	72	26.67	1.16
718	7.95	34.51	4.25	66	26.92	1.55
957	6.10	34.42	4.06	60	27.09	1.65
1450	3.60	34.47	3.59	50	27.43	2.03

F.R.V. "Derwent Hunter"

Cruise 6

1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ ‰ sat.	σ _t	Total P μg.at/l
DATE: 14.iv.58.		TIME: 1032 hrs		STATION No.: 79		
LATITUDE: 34°34' S.		LONGITUDE: 155°54' E.				
SEA: 2	WIND: FORCE 4	DIRECTION N.		WIRE ANGLE: 5°, 0°, 0*		
0*	24.10	35.59	4.09	88	24.07	0.32
25	24.05	35.59	4.54	97	24.09	0.23
50	24.13	35.61	4.62	99	24.09	0.26
75	24.03	35.62	4.38	94	24.13	0.29
100	20.97	35.55	4.86	99	24.94	0.52
105	20.93	35.55	4.62	94	24.95	
150	18.88	35.50	4.22	83	25.45	0.42
200	17.76	35.48	4.16	80	25.71	0.55
500	16.14	35.41	3.82	71	26.05	0.52
750	7.58	34.49	4.48	69	26.95	1.35
1000	6.76	34.40	4.28	64	27.00	1.65
1500	3.43	34.49	3.70	51	27.45	1.77

DATE: 14.iv.58.		TIME: 2253 hrs		STATION No.: 81		
LATITUDE: 34°15' S.		LONGITUDE: 154°43' E.				
SEA: 4	WIND: FORCE 5	DIRECTION N.		WIRE ANGLE: 50°, 37°, 0*		
0*	24.05	35.50	3.84	82	24.03	0.45
19	24.05	35.50	4.42	94	24.03	0.29
38	23.96	35.50	4.48	96	24.05	0.26
57	24.03	35.50	3.05	65	24.03	0.26
76	24.02	35.50	4.25	91	24.03	0.23
116	22.90	35.50	4.38	92	24.36	0.26
155	20.83	35.55	3.93	80	24.97	0.39
236	19.10	35.52	4.12	81	25.41	0.48
424	15.27	35.28	4.22	77	26.14	0.71
550	12.51	35.01	4.31	74	26.52	0.77
770	8.94	34.61	4.31	68	26.85	1.13
1258	5.02	34.42	3.80	55	27.22	1.71

F.R.V.

"Derwent Hunter"

Cruise 6

1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ o/o sat.	σ _t	Total P μg.at/l
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DATE: 15.iv.58.

TIME: 0940 hrs

STATION No.: 82

LATITUDE: 34°02' S.

LONGITUDE: 153°53' E.

SEA: 4 WIND: FORCE 6
DIRECTION N.

WIRE ANGLE: 60°, 50°, 50°*

0*	24.14	35.55			24.04	0.32
17	24.18	35.55			24.04	0.32
34	24.18	35.53			24.03	0.32
45	24.15	35.53			24.03	0.35
64	24.30	35.53			24.00	0.48
100	22.90	35.53			24.39	0.48
136	20.99	35.53			24.92	0.52
208	19.18	35.53			25.40	0.52
365	16.28	35.41			26.01	0.55
388	15.54	35.32			26.11	0.68
434	13.87	35.23			26.40	0.71
580	11.24	34.94			26.68	1.19

DATE: 15.iv.58.

TIME: 1840 hrs

STATION No.: 83

LATITUDE: 33°41' S.

LONGITUDE: 153°08' E.

SEA: 3 WIND: FORCE 6
DIRECTION N.

WIRE ANGLE: 0, 5°, 0°*

0*	23.15	35.50	4.59	97	24.29	0.32
25	23.15	35.48	4.38	92	24.27	0.32
50	22.97	35.46	3.53	74	24.31	0.32
75	20.24	35.43	4.74	95	25.05	0.42
100	18.06	35.41	4.31	83	25.59	0.52
150	16.03	35.34	4.05	75	26.02	0.55
200	14.94	35.32	4.05	73	26.24	0.71
300	12.99	35.07	3.70	64	26.46	0.81
500	9.62	34.65	3.27	53	26.76	1.13
750	7.06	34.47	4.31	65	27.01	1.48
1000	5.27	34.38	3.93	57	27.20	1.52
1500	3.13	34.51	3.58	49	27.50	2.03

F.R.V. "Derwent Hunter"

Cruise 6

1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ o/o sat.	σ _t	Total P μg.at/l
DATE: 16.iv.58. TIME: 0112 hrs STATION No.: 84						
LATITUDE: 33°36' S. LONGITUDE: 152°38' E.						
SEA: 3	WIND: FORCE 3	DIRECTION SW.		WIRE ANGLE: 0, 5°, 0*		
0*	20.78	35.52	5.01	101	24.96	0.35
25	19.54	35.55	4.92	98	25.32	0.58
50	19.28	35.53	4.88	96	25.37	0.77
75	18.50	35.48	4.09	80	25.53	0.52
100	17.26	35.44	3.64	69	25.80	0.61
150	15.23	35.32	4.28	78	26.18	0.74
200	13.86	35.17	3.99	71	26.37	0.77
300	12.57	35.03	4.65	80	26.52	0.90
500	9.40	34.65	4.40	71	26.80	1.45
750	6.77	34.43	4.38	66	27.02	1.42
1000	5.14	34.40	3.99	58	27.20	1.77
1500	3.09	34.52	3.46	48	27.52	1.97

DATE: 16.iv.58. TIME: 0742 hrs STATION No.: 85						
LATITUDE: 33°32' S. LONGITUDE: 152°13' E.						
SEA: 3	WIND: FORCE 5	DIRECTION SW.		WIRE ANGLE: 40°, 0		
0	21.36	35.48	4.92	101	24.77	0.42
20	20.20	35.50	4.85	97	25.11	0.52
38	19.65	35.50	4.62	92	25.27	0.55
55	19.30	35.50	4.57	90	25.34	0.39
72	18.65	35.46	5.19	101	25.48	0.35
108	17.70	35.37	5.14	98	25.65	0.39
142	15.84	35.37	5.04	93	26.09	0.48
214	14.32	35.28	4.62	83	26.35	0.74
360	11.35	34.90	4.22	71	26.65	1.06
488	8.08	34.56	4.38	68	26.93	1.48

F.R.V. "Derwent Hunter" Cruise 7 1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ ‰ sat.	σ _t	Total P μg.at/l
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DATE: 23.iv.58. TIME: 0848 hrs STATION No.: 86
 LATITUDE: 34°18' S. LONGITUDE: 151°37' E.

SEA: 2 WIND: FORCE 3 WIRE ANGLE: 0
 DIRECTION E.

0	22.52	35.53	4.87	101	24.49	0.35
25	22.52	35.53	4.84	101	24.49	0.29
50	22.45	35.53	4.93	102	24.52	0.32
75	21.09	35.55	4.54	92	24.90	0.35
100	20.18	35.62	4.36	88	25.21	0.45
150	18.55	35.52	4.84	94	25.55	0.45
200	17.40	35.48	4.08	78	25.80	0.48
300	14.00	35.48	4.54	81	26.57	0.52

DATE: 24.iv.58. TIME: 0933 hrs STATION No.: 87
 LATITUDE: 34°33' S. LONGITUDE: 152°56' E.

SEA: 3 WIND: FORCE 4 WIRE ANGLE: 7°
 DIRECTION SE.

0	23.24	35.48	4.90	104	24.24	0.32
25	21.50	35.50	4.78	97	24.76	0.23
50	20.85	35.48	4.84	98	24.91	0.26
75	19.93	35.53	4.08	82	25.20	0.29
100	17.88	35.44	4.27	82	25.65	0.42
150	17.82	35.46	4.30	83	25.69	0.29
200	14.62	35.34	4.17	75	26.33	0.68
300	12.53	35.25	4.27	74	26.69	0.61

CO₂ UPTAKE

INCUBATION		Depth	ACTIVITY			PRODUCTION	
Method	Period		Light	Dark	Net	mgC/m ³	gC/day/m ²

DATE: 23.iv.58 TIME: 0530 STATION NO.: 86
 LATITUDE: 34°18' S. LONGITUDE: 151°37' E.

<u>In situ</u>	1 day	0	690	151	539	3.05	
		25	793	166	627	3.55	0.15
		50	251	123	127	0.72	

DATE: 23.iv.58 TIME: 1645 STATION NO.: 86
 LATITUDE: 34°18' S. LONGITUDE: 151°37' E.

Bath	4 hrs	0	1001	42	959	1.36	
		25	757	55	702	0.99	1.14
		50	743	22	721	1.02	
		100	993	22	971	1.37	

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 23.iv.58

STATION NO.: 86

LATITUDE: 34°18' S. LONGITUDE: 151°37' E.

TIME: 0530

0	0.44	0.17	1.08	0.46	
25	0.48	0.02	0.35	0.04	0.13
50	0.67	0.18	1.21	0.28	0
100	0.35	0.13	0.71	1.90	

DATE: 23.iv.58

STATION NO.: 86

LATITUDE: 34°18' S. LONGITUDE: 151°37' E.

TIME: 1130

0	0.63	0.12	0.78	0.13	0.12
25	0.74	0.13	0.91	0.16	0.09
50	0.72	0.12	0.86	0.18	0.08
100	0.19	0.16	1.00	0.23	

DATE: 23.iv.58

STATION NO.: 86

LATITUDE: 34°18' S. LONGITUDE: 151°37' E.

TIME: 1645

0	0.54	0.11	0.46	0.10	0.11
25	0.63	0.10	0.65	0.14	0.12
50	0.73	0.03	0.58	0.13	0.14
100	0.11	0.08	0.28	0.11	

CO₂ UPTAKE

INCUBATION		Depth	ACTIVITY			PRODUCTION	
Method	Period		Light	Dark	Net	mgC/m ³	gC/day/m ²

DATE: 24.iv.58 TIME: 0515 STATION NO.: 87
 LATITUDE: 34°33' S. LONGITUDE: 152°56' E.

<u>In situ</u>	1 day	25	551	104	547	3.09
		50	170	75	95	0.54
		100	167	74	93	0.53

DATE: 24.iv.58 TIME: 0515 STATION NO.: 87
 LATITUDE: 34°33' S. LONGITUDE: 152°56' E.

Bath	4 hrs	0	581	55	526	0.74
		25	953	49	904	1.28

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 24.1v.58

STATION NO.: 87

LATITUDE: 34°33' S. LONGITUDE: 152°56' E.

TIME: 0600

0	0.25	0.07	0.25	0.10	0.06
25	0.31	0.09	0.42	0.10	0.03
50	0.49		0.67	0.14	0.06
100	0.17	0.08	0.41	0.11	0

DATE: 24.1v.58

STATION NO.: 87

LATITUDE: 34°33' S. LONGITUDE: 152°56' E.

TIME: 1130

0	0.22	0.04	0.36	0.13	0.02
25	0.33	0.09	0.35	0.17	0
50	0.40	0.02	0.39	0.20	0.07
100	0.20	0.08	0.57	0.18	0.01

F.R.V. "Derwent Hunter" Cruise 8 1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ o/o sat.	σ _t	Total P μg.at/l
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DATE: 1.v.58. TIME: 0415 hrs STATION No.: 88

LATITUDE: 35°23' S. LONGITUDE: 150°49' E.

SEA: 2 WIND: FORCE 2 WIRE ANGLE: 0
DIRECTION SSW.

0	21.44	35.66	4.79	98	24.90	0.32
25	21.44	35.62	4.71	97	24.86	0.35
50	19.46	35.61	3.97	79	25.38	0.42
75	18.47	35.53	4.07	79	25.58	0.32
100	17.26	35.48	4.01	76	25.83	0.61

DATE: 1.v.58. TIME: 1922 hrs STATION No.: 89

LATITUDE: 37°16' S. LONGITUDE: 150°37' E.

SEA: 2 WIND: FORCE 4 WIRE ANGLE: 60°, 37°, 17°*
DIRECTION NW.

0	20.82	35.61	4.77	97	25.03	0.32
19*	20.47	35.57	4.83	97	25.09	0.29
36	20.99	35.59	4.77	97	24.97	0.29
51	21.07	35.57	4.74	96	24.93	0.29
68	20.64	35.57	4.65	94	25.04	0.35
100	20.73	35.30	4.25	86	24.82	0.74
130	16.47	35.43	4.32	81	25.98	0.65
195	13.11	35.17	4.54	79	26.52	0.84
374	10.25	34.83	4.48	73	26.78	1.06
411	9.55	34.76	4.43	71	26.85	0.94
562	8.11	34.69	4.54	71	27.02	0.87
986	5.25	34.47	3.99	58	27.23	1.55

F.R.V. "Derwent Hunter" Cruise 8 1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ ‰ sat.	σ _t	Total P μg.at/l
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DATE: 2.v.58. TIME: 0120 hrs STATION No.: 90

LATITUDE: 37°22' S. LONGITUDE: 151°03' E.

SEA: 2 WIND: FORCE 2 WIRE ANGLE: 52°, 40°, 50*
DIRECTION SSW.

0*	20.95	35.57	5.04	102	24.96	0.32
15	20.96	35.57	4.98	101	24.95	0.45
28	20.85	35.57	4.95	100	24.99	0.39
41	20.64	35.55	5.10	103	25.03	0.35
58	20.71	35.55	4.95	100	25.01	0.32
84	20.36	35.55	4.95	100	25.11	0.42
116	18.31	35.52	4.48	87	25.61	0.48
180	15.87	35.52	4.74	88	26.19	0.35
345	12.08	35.05	4.48	76	26.63	1.26
430	10.10	34.83	4.46	73	26.69	1.03
577	8.30	34.67	4.28	67	26.96	1.10
1018	5.33	34.49	4.22	61	27.24	1.52

DATE: 2.v.58. TIME: 1310 hrs STATION No.: 91

LATITUDE: 38°21' S. LONGITUDE: 150°49' E.

SEA: 3 WIND: FORCE 2 WIRE ANGLE: 10°, 5°, 0*
DIRECTION NNW.

0*	18.34	35.55	5.18	101	25.62	0.32
25	18.25	35.55	5.27	102	25.65	0.32
50	17.02	35.48	5.18	98	25.89	0.29
75	15.67	35.32	4.77	88	26.08	0.48
100	15.09	35.39	4.71	86	26.26	0.42
150	13.50	35.25	4.83	85	26.50	0.71
200	12.96	35.23	4.83	84	26.59	0.61
300	11.62	35.03	4.89	83	26.70	0.84
500	8.75	34.67	5.10	81	26.90	1.10
750	7.25	34.52	4.54	69	27.01	1.16
1000	5.66	34.45	4.28	63	27.16	1.58
1500	3.30	34.56	3.59	50	27.51	1.87

F.R.V. "Derwent Hunter" Cruise 8 1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ o/o sat.	σ _t	Total P μg.at/l
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DATE: 2.v.58. TIME: 2148 hrs STATION No.: 92
 LATITUDE: 39°04' S. LONGITUDE: 150°09' E.
 SEA: 3 WIND: FORCE 2 WIRE ANGLE: 12°, 10°, 0*
 DIRECTION NW.

0*	18.77	35.61	5.07	99	25.56	0.32
25	18.79	35.61	4.71	92	25.56	0.42
50	18.79	35.61	4.89	96	25.56	0.35
75	18.38	35.55	4.71	91	25.66	0.35
100	17.32	35.48	4.38	83	25.82	0.42
150	15.50	35.41	5.02	92	26.19	0.35
200	14.22	35.28	4.59	82	26.37	0.65
300	12.71	35.16	4.65	80	26.59	0.77
500	9.54	34.76	4.32	69	26.84	1.06
750	7.50	34.54	4.28	66	26.99	1.26
1000	5.78	34.47	4.09	60	27.16	1.45
1500	3.50	34.54	3.53	49	27.47	1.84

F.R.V. "Derwent Hunter"

Cruise 10

1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ % sat.	σ _t	Total P μg.at/l
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DATE: 9.vi.58. TIME: 1030 hrs STATION No.: 93

LATITUDE: 40°46' S. LONGITUDE: 152°55' E.

SEA: 2 WIND: FORCE 3 WIRE ANGLE: 0
DIRECTION W.

0	13.28	35.14	5.60	93	26.46	0.52
25	13.28	35.14	5.58	93	26.46	0.44
50	13.32	35.14	5.35	89	26.46	0.45
75	13.15	35.14	5.65	94	26.49	0.45
100	13.08	35.12	5.60	93	26.48	0.45
150	12.61	35.12	5.10	84	26.58	0.63
200	11.90	35.05	5.02	81	26.66	0.74
300	10.47	34.85	4.99	78	26.77	0.83
500	8.67	34.67	5.07	77	26.93	1.17
750	7.47	34.54	4.52	67	27.01	1.47
1000	5.52	34.43	4.41	62	27.19	1.61

DATE: 10.vi.58. TIME: 0745 hrs STATION No.: 94

LATITUDE: 39°02' S. LONGITUDE: 153°14' E.

SEA: 1 WIND: FORCE 2 WIRE ANGLE: 0
DIRECTION E.

0	14.08	35.30	5.65	95	26.42	0.64
25	14.08	35.30	5.50	94	26.42	0.44
50	14.07	35.30	5.50	93	26.42	0.43
75	13.98	35.28	5.63	95	26.42	0.52
100	13.78	35.23	5.55	93	26.43	0.52
150	13.26	35.19	5.19	87	26.50	0.67
200	12.50	35.05	5.10	84	26.54	0.67
300	11.10	35.10	5.19	83	26.86	0.65
500	8.62	34.60	5.20	78	26.88	1.41
750	7.22	34.52	4.46	65	27.03	1.50
1000	5.27	34.43	4.34	61	27.22	1.78

CO₂ UPTAKE

INCUBATION		Depth	ACTIVITY			PRODUCTION	
Method	Period		Light	Dark	Net	mgC/m ³	gC/day/m ²

DATE: 9.vi.58 TIME: 0600 STATION NO.: 93
 LATITUDE: 40°46' S. LONGITUDE: 152°55' E.

<u>In situ</u>	½ day	0	470	10	460	5.20	
		25	330	21	309	3.50	0.22
		50	79	16	63	0.71	
		100	165	17	148	1.67	

DATE: 9.vi.58 TIME: 0600 STATION NO.: 93
 LATITUDE: 40°46' S. LONGITUDE: 152°55' E.

Bath	4 hrs	0	346	6	340	0.48	
		25	304	11	293	0.41	0.38
		50	208	7	201	0.28	
		100	306	4	302	0.43	

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 9.vi.58

STATION NO.: 93

LATITUDE: 40°46' S. LONGITUDE: 152°55' E. DEPTH 1% S.L.: 98 m

SOLAR ALT.: 22°

TIME: 0630

1015

0	0.52	0.22	0.56	0.19	0.04	0	100
25	0.43	0.19	0.66	0.23		10	78
50	0.59	0.29	0.70	0.21	0.01	20	57
100	0.35	0.18	0.77	0.11		30	33
						40	20
						50	12

CO₂ UPTAKE

INCUBATION		Depth	ACTIVITY			PRODUCTION	
Method	Period		Light	Dark	Net	mgC/m ³	gC/day/m ²

DATE: 10.vi.58 TIME: 0530 STATION NO.: 94
 LATITUDE: 39°02' S. LONGITUDE: 153°14' E.

<u>In situ</u>	½ day	0	1094	(10)	1084	12.26	
		25	676	6	670	7.58	0.42
		50	182	7	175	1.98	
		100	9	4	5	0.06	

DATE: 10.vi.58 TIME: 0530 STATION NO.: 94
 LATITUDE: 39°02' S. LONGITUDE: 153°14' E.

Bath	4 hrs	0	1314	7	1307	1.89	
		25	1253	3	1250	1.80	1.42
		50	1148	11	1137	1.64	
		100	345	9	336	0.48	

DATE: 10.vi.58 TIME: 1100 STATION NO.: 94
 LATITUDE: 39°02' S. LONGITUDE: 153°14' E.

Bath	4 hrs	0	1934	18	1916	2.71	
		25	2289	12	2277	3.22	2.18
		50	1891	12	1879	2.66	
		100	126	9	117	0.17	

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 10.vi.58

STATION NO.: 94

LATITUDE: 39°02' S. LONGITUDE: 153°14' E. DEPTH 1% S.L.: 90 m

SOLAR ALT.: 23°

TIME: 0600

1015

0	0.52	0.20	0.75	0.28		0	100
25	0.52	0.26	0.83	0.23		10	74
50	0.37	0.14	0.89	0.15		20	54
100	0.61	0.22	1.01	0.16	0.03	30	30
150	0.14	0.11	0.80	0.17		40	16
200	0.07	0.08	0.47	0.11		50	9.0
						60	5.2
						70	3.0
						80	2.0

DATE: 10.vi.58

STATION NO.: 94

LATITUDE: 39°02' S. LONGITUDE: 153°14' E. DEPTH 1% S.L.: 86 m

SOLAR ALT.: 29°

1200

0	100
10	72
20	55
30	32
40	19
50	9.8
60	5.4
70	2.9
80	1.6

F.R.V. "Derwent Hunter" Cruise 10 1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ o/o sat.	σ _t	Total P μg.at/l
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DATE: 11.vi.58. TIME: 0738 hrs STATION No.: 95

LATITUDE: 37°49' S. LONGITUDE: 153°28' E.

SEA: 1 WIND: FORCE 2 WIRE ANGLE: 0
DIRECTION WNW.

0	15.75	35.50	5.30	92	26.21	0.53
25	15.83	35.50	5.23	91	26.19	0.52
50	15.58	35.46	5.33	93	26.22	0.47
75	15.23	35.44	5.26	91	26.27	0.47
100	14.96	35.41	5.36	92	26.31	0.61
150	14.45	35.32	5.23	88	26.43	0.53
200	14.07	35.32	5.23	88	26.43	0.53
300	12.58	35.21	4.92	81	26.66	0.64
500	9.65	34.74	4.72	73	27.83	1.20
750	7.38	34.52	4.38	65	27.01	1.56
1000	5.44	34.47	4.17	59	27.23	1.76

DATE: 12.vi.58. TIME: 0835 hrs STATION No.: 96

LATITUDE: 38°09' S. LONGITUDE: 151°44' E.

SEA: 3 WIND: FORCE 4 WIRE ANGLE: 25°
DIRECTION W.

0	16.85	35.59	5.33	95	26.02	0.51
25	16.91	35.57	5.10	91	25.99	0.38
50	16.88	35.57	5.23	93	26.00	0.42
70	16.78	35.55	5.15	91	26.00	0.44
94	16.73	35.55	5.23	92	26.02	0.44
142	15.54	35.43	4.84	84	26.19	0.53
189	15.13	35.52	4.69	81	26.36	0.45
284	12.15	35.12	4.63	75	26.67	0.88
477	9.05	34.69	4.49	68	26.88	1.11
720	7.04	34.51	4.46	65	27.05	1.41
970	5.34	34.47	4.20	59	27.24	1.61

CO₂ UPTAKE

INCUBATION		Depth	ACTIVITY			PRODUCTION	
Method	Period		Light	Dark	Net	mgC/m ³	gC/day/m ²

DATE: 11.vi.58 TIME: 0530 STATION NO.: 95
 LATITUDE: 37°49' S. LONGITUDE: 153°28' E.

<u>In situ</u>	½ day	0	1702	5	1697	19.20	
		25	846	84	762	8.62	0.55
		50	231	10	221	2.50	
		100	16	3	13	0.15	

DATE: 11.vi.58 TIME: 0530 STATION NO.: 95
 LATITUDE: 37°49' S. LONGITUDE: 153°28' E.

Bath	4 hrs	0	1923	12	1911	2.70	
		25	1858	10	1848	2.61	1.51
		50	848	10	838	1.18	
		100	228	3	225	0.32	

DATE: 11.vi.58 TIME: 1120 STATION NO.: 95
 LATITUDE: 37°49' S. LONGITUDE: 153°28' E.

Bath	4 hrs	0	1788	10	1778	2.51	
		25	2039	18	2021	2.86	1.42
		50	714	12	702	0.99	
		100	67	5	62	0.09	

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 11.vi.58 STATION NO.: 95
 LATITUDE: 37°49' S. LONGITUDE: 153°28' E. DEPTH 1% S.L.: 93 m
 SOLAR ALT.: 26°

TIME:	0600					1020		
0	0.62	0.30	0.66	0.17	0.05	0	100	
25	0.67	0.29	0.88	0.14	0.07	10	72	
50	0.55	0.26	0.66	0.25		20	49	
100	0.25	0.20	0.59	0.14		30	28	
150	0.22	0.18	0.54	0.21		40	13	
200	0.08	0.07	0.42	0.14		50	6.8	
						60	4.0	
						70	2.5	
						80	1.7	

DATE: 11.vi.58 STATION NO.: 95
 LATITUDE: 37°49' S. LONGITUDE: 153°28' E. DEPTH 1% S.L.: 90 m
 SOLAR ALT.: 28°

		1230	
	0	100	
	10	72	
	20	51	
	30	20	
	40	9.1	
	50	5.0	
	60	3.3	
	70	2.2	
	80	1.3	

CO₂ UPTAKE

INCUBATION		Depth	ACTIVITY			PRODUCTION	
Method	Period		Light	Dark	Net	mgC/m ³	gC/day/m ²

DATE: 12.vi.58 TIME: 0550 STATION NO.: 96
 LATITUDE: 38°09' S. LONGITUDE: 151°44' E.

<u>In situ</u>	½ day	0	1455	15	1440	16.29	
		25	583	30	553	6.26	0.41
		50	110	3	107	1.21	
		100	16	7	9	0.10	

DATE: 12.vi.58 TIME: 0600 STATION NO.: 96
 LATITUDE: 38°09' S. LONGITUDE: 151°44' E.

Bath	4 hrs	0	2302	8	2294	3.24	
		25	2508	9	2499	3.53	
		50	1404	17	1387	1.96	

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 12.vi.58

STATION NO.: 96

LATITUDE: 38°09' S. LONGITUDE: 151°44' E.

TIME: 0600

0	0.62	0.20	0.55	0.20		
25	0.72	0.23	0.66	0.28		
50	0.72	0.23	0.54	0.13	0.12	
100	0.25	0.14	0.37	0.14	0.04	

F.R.V.

"Derwent Hunter"

Cruise 11

1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ o/o sat.	σ _t	Total P μg.at/l
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DATE: 20.vi.58. TIME: 0816 hrs STATION No.: 97

LATITUDE: 34°12' S. LONGITUDE: 151°31' E.

SEA: 2 WIND: FORCE 4 WIRE ANGLE: 5°, 8°
DIRECTION S.

0	19.53	35.59	4.82	90	25.36	0.38
25	19.31	35.59	4.77	88	25.41	0.36
50	18.00	35.53	4.91	89	25.70	0.52
75	17.35	35.50	4.07	73	25.83	0.53
100	16.41	35.48	4.10	72	26.04	0.55
150	14.92	35.37	4.44	76	26.30	0.67
200	15.00	35.46	4.56	78	26.35	0.61
300	13.38	35.21	4.56	76	26.50	0.76

DATE: 21.vi.58. TIME: 0815 hrs STATION No.: 98

LATITUDE: 34°51' S. LONGITUDE: 152°48' E.

SEA: 2 WIND: FORCE 2 WIRE ANGLE: 28°, 10°, 20°*
DIRECTION NE.

0	21.03	35.64	4.74	90	25.00	0.39
25	21.03	35.64	4.83	92	25.00	0.33
50	21.06	35.64	4.23	81	24.99	0.30
75	21.06	35.64	4.79	91	24.99	0.32
100	21.08	35.64	5.12	98	24.99	0.33
150	19.75	35.59	4.16	78	25.30	0.53
200	18.50	35.55	4.16	76	25.59	0.56
300	16.35	35.41	4.32	76	26.00	0.64
500*	12.28	35.10	4.56	75	26.63	0.76
717	8.77	34.76	4.40	67	26.98	1.18
900	6.50	34.52	4.38	65	27.13	1.43
1210	4.51	34.49	3.94	54	27.34	1.80

CO₂ UPTAKE

INCUBATION		Depth	ACTIVITY			PRODUCTION	
Method	Period		Light	Dark	Net	mgC/m ³	gC/day/m ²

DATE: 20.vi.58 TIME: 0600 STATION NO.: 97
 LATITUDE: 34°12' S. LONGITUDE: 151°31' E.

<u>In situ</u>	1 day	0	1286	10	1276	7.2	
		25	1181	97	1084	6.13	0.25
		50	77	45	32	0.18	
		100	15	8	7	0.04	

DATE: 20.vi.58 TIME: 1300 STATION NO.: 97
 LATITUDE: 34°12' S. LONGITUDE: 151°31' E.

Bath	4 hrs	0	2548	42	2506	3.47	
		25	1701	19	1682	2.33	2.45
		50	2689	29	2660	3.69	
		100	22	22	0	0	

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 20.vi.58 STATION NO.: 97
 LATITUDE: 34°12' S. LONGITUDE: 151°31' E. DEPTH 1% S.L.: 97 m
 SOLAR ALT.: 29°

TIME:						1030		
0	0.99	0.29	0.61	0.16	0.26	0	100	
25	0.67	0.20	0.61	0.13	0.15	10	69	
50	0.23	0.15	0.59	0.16		20	46	
100	0.07	0.17	0.29	0.17		30	24	
150	0.09	0.16	0.28	0.16		40	12	
200	0.11	0.16	0.44	0.19		50	7.3	
						60	4.6	
						70	3.0	
						80	2.0	

DATE: 20.vi.58 STATION NO.: 97
 LATITUDE: 34°12' S. LONGITUDE: 151°31' E. DEPTH 1% S.L.: 76 m
 SOLAR ALT.: 31°

TIME:						1245		
0	1.05	0.42	0.70	0.17	0.25	0	100	
25	0.93	0.41	0.25	0.14	0.24	10	68	
50	0.92	0.47	0.45	0.18	0.13	20	38	
100	0.11	0.04	0.53	0.14		30	16	
150	0.11	0.04	0.62	0.17		40	8.0	
200	0.08	0.08	0.73	0.17		50	4.8	
						60	2.2	
						70	0.8	

CO₂ UPTAKE

INCUBATION		Depth	ACTIVITY			PRODUCTION	
Method	Period		Light	Dark	Net	mgC/m ³	gC/day/m ²

DATE: 21.vi.58 TIME: 0600 STATION NO.: 98
 LATITUDE: 34°51' S. LONGITUDE: 152°48' E.

<u>In situ</u>	1 day	0	271	170	101	0.14	
		25	1016	117	899	1.27	0.32
		50	5431	73	5358	7.58	
		100	129	129	0	0	

DATE: 21.vi.58 TIME: 0600 STATION NO.: 98
 LATITUDE: 34°51' S. LONGITUDE: 152°48' E.

Bath	4 hrs	0	652	12	640	0.90	
		25	833	33	800	1.13	1.10
		50	875	29	846	1.20	
		100	751	13	738	1.04	

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 21.vi.58

STATION NO.: 98

LATITUDE: 34°51' S. LONGITUDE: 152°48' E. DEPTH 1% S.L.: 102 m

SOLAR ALT.: 29°

TIME: 0600

1040

0	0.35	0.06	0.74	0.13	0.79	0	100
25	0.45	0.10	0.99	0.12	0.09	10	75
50	0.41	0.06	0.90	0.13	0.09	20	56
100	0.43	0.07	0.83	0.13	0.08	30	35
150	0.07	0.04	0.63	0.14		40	23
200	0.03	0.06	0.23	0.10		50	16
						60	9.2
						70	5.4
						80	3.2

DATE: 21.vi.58

STATION NO.: 98

LATITUDE: 34°51' S. LONGITUDE: 152°48' E. DEPTH 1% S.L.: 102 m

SOLAR ALT.: 31°

TIME: 1300

1230

0	0.43	0.12	0.40	0.10	0.12	0	100
25	0.41	0.07	0.42	0.09	0.13	10	84
50	0.35	0.11	0.46	0.13	0.09	20	58
100	0.39	0.15	0.52	0.18	0.01	30	46
150	0.06	0.08	0.33	0.18	0.07	40	28
200	0.02	0.10	0.16	0.12		50	16
						60	9.4
						70	5.5
						80	3.2

CO₂ UPTAKE

INCUBATION		Depth	ACTIVITY			PRODUCTION	
Method	Period		Light	Dark	Net	mgC/m ³	gC/day/m ²

DATE: 21.vi.58

TIME: 1230

STATION NO.: 98

LATITUDE: 34°51' S.

LONGITUDE: 152°48' E.

Bath	4 hrs	0	1244	26	1218	1.69	
		25	1202	33	1169	1.62	1.38
		50	1151	104	1047	1.45	
		100	685	28	557	0.77	

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 21.vi.58

STATION NO.: 98

LATITUDE: 34°51' S. LONGITUDE: 152°48' E. DEPTH 1/2 S.L.: 80 m

SOLAR ALT.: 21°

1425

0	100
10	50
20	44
30	29
40	16
50	7.7
60	4.2
70	2.0

F.R.V. "Derwent Hunter" Cruise 11 1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ ‰ sat.	σ _t	Total P μg.at/l
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DATE: 22.vi.58. TIME: 0847 hrs STATION No.: 99

LATITUDE: 34°30' S. LONGITUDE: 153°57' E.

SEA: 2 WIND: FORCE 2 WIRE ANGLE: 20°, 22°, 0°*
DIRECTION NNE.

0*	20.97	35.64	4.91	94	25.02	0.36
25	20.95	35.64	4.35	83	25.02	0.32
50	21.00	35.64	4.88	93	25.01	0.32
75	21.00	35.66	4.85	92	25.02	0.33
100	21.03	35.66	4.79	91	25.02	0.32
150	21.00	35.66	4.23	81	25.02	0.36
200	19.47	35.61	4.16	77	25.39	0.43
300	17.34	35.50	4.16	75	25.83	0.61
500	12.84	35.17	4.61	76	26.57	0.81
684	9.33	34.72	4.49	69	26.86	1.15
885	7.05	34.51	4.40	64	27.04	1.48
1316	3.94	34.51	3.73	51	27.41	1.89

DATE: 23.vi.58. TIME: 0121 hrs STATION No.: 100

LATITUDE: 35°07' S. LONGITUDE: 155°15' E.

SEA: 2 WIND: FORCE 5 WIRE ANGLE: 10°, 5°*
DIRECTION NW.

0	17.18	35.53	5.06	90	25.89	0.44
25	17.03	35.53	4.61	82	25.93	0.49
50	16.40	35.48	4.85	85	26.04	0.45
75	16.01	35.43	4.82	84	26.09	0.50
100	15.10	35.32	4.49	77	26.21	0.55
150	13.67	35.26	4.61	77	26.45	0.70
200	12.75	35.16	4.58	76	26.59	0.76
300	11.08	34.94	4.44	71	26.73	1.00
500	8.18	34.61	4.47	67	26.94	1.40
739	6.14	34.49	4.32	62	27.13	1.64
983	4.72	34.49	3.97	55	27.31	1.86
1477	2.89	34.60	3.57	47	27.58	2.12

CO₂ UPTAKE

INCUBATION		Depth	ACTIVITY			PRODUCTION	
Method	Period		Light	Dark	Net	mgC/m ³	gC/day/m ²

DATE: 22.vi.58 TIME: 0700 STATION NO.: 99
 LATITUDE: 34°30' S. LONGITUDE: 153°57' E.

<u>In situ</u>	1 day	0	604	114	490	2.77	
		25	758	112	646	3.65	0.21
		50	603	205	398	2.25	
		100	153	153	0	0	

DATE: 22.vi.58 TIME: 0700 STATION NO.: 99
 LATITUDE: 34°30' S. LONGITUDE: 153°57' E.

Bath	4 hrs	0	503	39	464	0.66	
		25	561	17	544	0.77	0.83
		50	732	53	679	0.96	
		100	566	23	543	0.77	

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 22.vi.58

STATION NO.: 99

LATITUDE: 34°30' S. LONGITUDE: 153°57' E. DEPTH 1% S.L.: 99 m

SOLAR ALT.: 30°

TIME: 0600

1100

0	0.38	0.11	0.58	0.16	0.08	0	100
25	0.36	0.03	0.42	0.11	0.11	10	84
50	0.43	0.13	0.73	0.16	0.07	20	68
100	0.39	0.15	0.80	0.16	0.04	30	46
150	0.44	0.14	0.63	0.21	0.05	40	35
200	0.33	0.18	0.93	0.29		50	25
						60	23
						70	11
						80	5.4

DATE: 22.vi.58

STATION NO.: 99

LATITUDE: 34°30' S. LONGITUDE: 153°57' E. DEPTH 1% S.L.: 83 m

SOLAR ALT.: 31°

TIME: 1300

1230

0	0.46	0.16	0.62	0.17	0.06	0	100
25	0.45	0.09	0.84	0.18	0.08	10	70
50	0.56	0.12	0.87	0.14	0.12	20	60
100	0.50	0.11	0.82	0.14	0.08	30	47
150	0.14	0.06	0.56	0.18		40	30
200	0.14	0.06	0.59	0.14		50	22
						60	10
						70	9.5
						80	5.7

STATION: Port Hacking m

CO₂ UPTAKE

INCUBATION		Depth	ACTIVITY			PRODUCTION	
Method	Period		Light	Dark	Net	mgC/m ³	gC/day/m ²

DATE: 22.vi.58 TIME: 1300 STATION NO.: 99
 LATITUDE: 34°30' S. LONGITUDE: 153°57' E.

Bath	4 hrs	0	659	41	618	0.86	
		25	831	(40)	791	1.10	0.95
		50	757	107	650	0.90	
		100	707	36	671	0.93	

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 22.vi.58

STATION NO.: 99

LATITUDE: 34°30' S. LONGITUDE: 153°57' E. DEPTH 1% S.L.: 66 m

SOLAR ALT.: 23°

1410

0	100
10	
20	75
30	50
40	29
50	9.4
60	6.5
70	4.3
80	1.6

F.R.V. "Derwent Hunter"

Cruise 11

1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ o/o sat.	σ _t	Total P μg.at/l
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DATE: 23.vi.58. TIME: 1235 hrs STATION No.: 102

LATITUDE: 35°25' S. LONGITUDE: 156°44' E.

SEA: 2 WIND: FORCE 2 WIRE ANGLE: 5°
DIRECTION W.

0	18.43	35.57	5.06	93	25.62	0.44
25	18.41	35.57	5.06	93	25.63	0.43
50	18.49	35.57	4.38	80	25.61	0.42
75	18.50	35.59	5.01	92	25.62	0.43
100	18.45	35.59	4.94	90	25.63	0.37
150	16.14	35.43	4.29	75	26.06	0.57
200	14.81	35.35	4.58	78	26.30	0.64
300	12.64	35.12	4.41	73	26.57	0.95
500	9.21	34.72	4.10	63	26.88	1.22
750	6.59	34.51	4.35	63	27.10	1.12
1000	5.19	34.49	4.16	59	27.27	1.73
1500	3.07	34.58	4.43	59	27.55	2.14

DATE: 23.vi.58. TIME: 2252 hrs STATION No.: 104

LATITUDE: 34°38' S. LONGITUDE: 156°09' E.

SEA: 3 WIND: FORCE 3 WIRE ANGLE: 7°
DIRECTION N.

0	17.62	35.57	5.37	97	25.82	0.48
25	17.30	35.57	5.28	94	25.90	0.35
50	16.68	35.55	4.83	86	26.03	0.34
75	16.55	35.57	4.71	83	26.08	0.43
100	16.35	35.53	4.94	87	26.10	0.34
150	13.80	35.25	4.44	74	26.43	0.63
200	12.76	35.12	4.40	73	26.55	0.75
300	10.90	34.88	4.23	67	26.72	0.96
500	8.14	34.60	4.23	63	26.96	1.12
750	6.21	34.49	4.35	63	27.13	1.53
1000	4.80	34.49	4.00	56	27.31	1.75
1500	3.10	34.58	3.52	47	27.55	2.06

F.R.V. "Derwent Hunter" Cruise 11 1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ ‰ sat.	σ _t	Total P μg.at/l
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DATE: 24.vi.58. TIME: 1250 hrs STATION No.: 106
 LATITUDE: 34°15' S. LONGITUDE: 154°46' E.
 SEA: 3 WIND: FORCE 6 WIRE ANGLE: 50°-60°,
 DIRECTION S. 40°

0	20.85	35.64	4.79	91	25.05	0.34
17	20.88	35.64	4.56	87	25.04	0.34
34	20.91	35.64	4.23	80	25.03	0.35
51	20.91	35.64	4.76	90	25.03	0.32
68	20.91	35.64	4.44	84	25.03	0.34
100	20.78	35.66	4.23	80	25.09	0.30
136	20.10	35.64	4.59	86	25.26	0.40
208	18.50	35.57	4.56	84	25.61	0.44
382	14.02	35.07	4.44	75	26.42	0.78
442	12.30	35.10	4.44	73	26.62	0.83
527	10.59	34.90	4.40	70	26.79	0.91
716	8.53	34.67	4.44	67	26.95	1.28

DATE: 24.vi.58. TIME: 2228 hrs STATION No.: 107
 LATITUDE: 33°55' S. LONGITUDE: 154°09' E.
 SEA: 3 WIND: FORCE 4 WIRE ANGLE: 32°
 DIRECTION S.

0	20.80					
21	20.72	35.64	4.23	80	25.08	0.44
42	20.77	35.64	4.74	90	25.07	0.34
63	20.77	35.66	4.67	89	25.09	0.34
84	20.82	35.66	4.74	90	25.07	0.45
128	20.75	35.64	4.85	92	25.07	0.41
172	20.47	35.64	4.74	89	25.15	0.42
256	18.60	35.57	4.26	78	25.58	0.54
428	13.70	35.21	4.56	77	26.43	0.73

F.R.V. "Derwent Hunter" Cruise 11 1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ % sat.	σ _t	Total P μg.at/l
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DATE: 25.vi.58. TIME: 0959 hrs STATION No.: 108

LATITUDE: 33°40' S. LONGITUDE: 153°28' E.

SEA: 3 WIND: FORCE 6 WIRE ANGLE: 28°-30°
DIRECTION S.

0	21.13	35.57	4.76	91	24.92	0.33
20	21.20	35.59	4.91	94	24.92	0.33
40	21.21	35.59	4.67	89	24.91	0.34
60	21.03	35.59	4.23	81	24.97	0.37
80	20.92	35.59	4.71	90	24.99	0.34
120	18.70	35.55	4.16	76	25.54	0.53
160	17.80	35.52	4.19	76	25.74	0.59
244	15.65	35.37	4.29	75	26.12	0.64
414	11.47	34.97	4.35	70	26.69	0.94

DATE: 26.vi.58. TIME: 0108 hrs STATION No.: 109

LATITUDE: 33°24' S. LONGITUDE: 152°08' E.

SEA: 3 WIND: FORCE 5 WIRE ANGLE: 32°-35°
DIRECTION SW.

0	18.65	35.59	4.99	92	25.58	0.41
19	18.70	35.61	4.56	84	25.59	0.27
38	18.78	35.61	4.53	83	25.57	0.43
57	18.74	35.59	4.96	91	25.57	0.35
76	17.88	35.53	4.35	79	25.72	0.38
116	16.04	35.41	4.10	72	26.08	0.75
154	14.55	35.26	3.91	67	26.29	0.76
230	13.35	35.21	4.49	75	26.51	0.93
400	10.22	34.83	4.49	70	26.80	1.05

F.R.V. "Derwent Hunter" Cruise 13 1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ o/o sat.	σ _t	Total P μg.at/l
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DATE: 29.vii.58. TIME: 0312 hrs STATION No.: 111

LATITUDE: 34°12' S. LONGITUDE: 151°27' E.

SEA: 2 WIND: FORCE 2 WIRE ANGLE: -
DIRECTION W.

0	19.55	35.57			25.35	0.52
25	19.60	35.59			25.35	0.41
50	19.42	35.57			25.38	0.55
75	17.55	35.48			25.77	0.55
100	15.50	35.30			26.11	0.98
150	12.60	35.08			26.54	0.88

DATE: 1.viii.58. TIME: 0916 hrs STATION No.: 113

LATITUDE: 34°14' S. LONGITUDE: 151°34' E.

SEA: 2 WIND: FORCE 4 WIRE ANGLE: 40°, 45°
DIRECTION W.

0	20.15	35.66	4.83	97	25.25	0.41
25	20.15	35.66	4.74	95	25.25	0.26
36	19.93	35.57	4.68	93	25.25	0.34
55	19.27	35.59	4.77	94	25.43	0.43
73	19.15	35.59	4.65	92	25.45	0.39
110	17.85	35.55	4.50	87	25.76	1.36
147	17.30	35.53	4.65	88	25.87	0.46
220	13.15	35.14	4.08	71	26.48	0.89
368	11.20	34.92	4.27	71	26.70	0.97
550	9.57	34.70	4.17	67	26.81	1.13

CO₂ UPTAKE

INCUBATION		Depth	ACTIVITY			PRODUCTION	
Method	Period		Light	Dark	Net	mgC/m ³	gC/day/m ²

DATE: 1.viii.58 TIME: 0530 STATION NO.: 113
 LATITUDE: 34°14' S. LONGITUDE: 151°34' E.

<u>In situ</u>	½ day	0	1011	47	964	10.90	
		25	1300	46	1254	14.18	0.82
		50	807	30	777	8.79	
		100	73	49	24	0.01	

DATE: 1.viii.58 TIME: 0530 STATION NO.: 113
 LATITUDE: 34°14' S. LONGITUDE: 151°34' E.

Bath	4 hrs	0	264	6	258	0.35	
		25	527	7	520	0.71	
		50	172	20	152	0.21	
		100	293	8	285	0.39	

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 1.viii.58

STATION NO.: 113

LATITUDE: 34°14' S. LONGITUDE: 151°34' E. DEPTH 1% S.L.: 99 m

SOLAR ALT.: 18°

TIME: 0600

0	0.84	0.12	0.93	0.66
25	0.78	0	0.96	0.42
50	0.61	0.06	0.67	0.33
100	0.59	0.22	0.76	0.61

0830

0	100
10	77
20	50
30	29
40	16
50	11
60	6.6
70	4.3
80	2.5

F.R.V.

"Derwent Hunter"

Cruise 13

1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ % sat.	σ_t	Total P μg.at/l
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DATE: 1.viii.58. TIME: 1420 hrs STATION No.: 114

LATITUDE: 34°14' S. LONGITUDE: 151°47' E.

SEA: 2 WIND: FORCE 5 WIRE ANGLE: 30°, 17°
DIRECTION W.

0	18.40	35.59	5.13	100	25.64	0.39
25	17.60	35.59	5.13	98	25.84	0.55
50	17.68	35.59	5.03	96	25.84	0.52
75	17.40	35.57	5.03	96	25.88	0.50
100	17.15	35.52	4.86	92	25.89	0.62
150	16.45	35.50	4.88	91	26.05	0.55
200	16.06	35.50	4.88	91	26.14	0.53
300	13.96	35.25	4.45	79	26.39	0.83
468	10.60	34.85	4.41	73	26.75	0.95
714	8.08	34.60	4.38	68	26.96	1.26
960	5.77	34.45	4.32	64	27.17	1.68
1459	3.07	34.56	3.61	50	27.54	1.88

DATE: 1.viii.58. TIME: 1912 hrs STATION No.: 115

LATITUDE: 34°21' S. LONGITUDE: 152°15' E.

SEA: 2 WIND: FORCE 4 WIRE ANGLE: 50°-60°,
DIRECTION SW. 30°-32°

0	19.00	35.53	4.97	98	25.44	0.43
17	19.00	35.55	4.88	96	25.47	0.43
36	19.06	35.55	4.97	98	25.47	0.41
57	18.58	35.55	4.77	93	25.58	0.41
77	18.60	35.61	4.77	93	25.61	0.41
120	18.10	35.61	4.74	92	25.73	0.45
164	18.05	35.62	4.98	96	25.75	0.50
255	16.80	35.46	4.45	84	25.93	0.60
317	15.40	35.44	4.77	87	26.24	0.54
493	11.47	34.96	4.32	73	26.68	0.95
702	8.55	34.63	4.36	69	26.91	1.24
1135	4.93	34.47	4.02	58	27.29	1.34

F.R.V. "Derwent Hunter" Cruise 13 1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ ‰ sat.	σ _t	Total P μg.at/l
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DATE: 2.viii.58. TIME: 0754 hrs STATION No.: 116
 LATITUDE: 34°19' S. LONGITUDE: 152°49' E.
 SEA: 2 WIND: FORCE 4 WIRE ANGLE: 15°
 DIRECTION SW.

0	19.68	35.61	4.80	95	25.35	0.39
25	19.70	35.59	4.94	98	25.33	0.39
50	19.50	35.59			25.37	0.39
75	18.02	35.62	4.88	96	25.76	0.34
100	18.05	35.62	5.07	98	25.76	0.52
150	18.10	35.62	4.86	94	25.76	0.44
200	18.05	35.62	4.21	81	25.76	0.50
300	18.00	35.62	4.80	93	25.77	0.34
500	12.85	35.12	4.68	81	26.53	0.74
750	8.63	34.63	4.53	71	26.90	0.80
1000	6.32	34.49	4.38	65	27.12	1.55
1500	3.53	34.52	3.71	52	27.46	1.86

CO₂ UPTAKE

INCUBATION		Depth	ACTIVITY			PRODUCTION	
Method	Period		Light	Dark	Net	mgC/m ³	gC/day/m ²

DATE: 2.viii.58 TIME: 0545 STATION NO.: 116
 LATITUDE: 34°19' S. LONGITUDE: 152°49' E.

<u>In situ</u>	1 day	0	1165	120	1045	5.91	
		25	736	13	723	4.09	0.28
		50	551	60	491	2.78	
		100	11	10	1	0.01	

DATE: 2.viii.58 TIME: 0545 STATION NO.: 116
 LATITUDE: 34°19' S. LONGITUDE: 152°49' E.

Bath	4 hrs	0	573	23	550	0.78	
		25	1532	27	1505	2.13	
		50	1566	51	1515	2.14	

DATE: 2.viii.58 TIME: 0740 STATION NO.: 116
 LATITUDE: 34°19' S. LONGITUDE: 152°49' E.

Bath	4 hrs	0	1867	14	1853	2.47	
		25	1822	17	1805	2.40	
		50	1920	14	1906	2.54	

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 2.viii.58

STATION NO.: 116

LATITUDE: 34°19' S. LONGITUDE: 152°49' E. DEPTH 1/2 S.L.: 82 m

SOLAR ALT.: 23°

TIME: 0615

0	0.85	0.13	1.34	0.80
25	0.72	0.21	1.06	0.80
50	0.67	0.20	0.78	0.72
100	0.38	0.19	0.87	0.99

0900

0	100
10	71
20	50
30	29
40	15
50	7.9
60	4.1
70	2.2

CO₂ UPTAKE

INCUBATION		Depth	ACTIVITY			PRODUCTION	
Method	Period		Light	Dark	Net	mgC/m ³	gC/day/m ²

DATE: 2.viii.58 TIME: 1200 STATION NO.: 116
 LATITUDE: 34°19' S. LONGITUDE: 152°49' E.

Bath	4 hrs	0	409	6	403	0.57
		25	815	(5)	810	1.15
		50	277	3	274	0.39

DATE: 2.viii.58 TIME: 1400 STATION NO.: 116
 LATITUDE: 34°19' S. LONGITUDE: 152°49' E.

Bath	4 hrs	0	517	6	511	0.72
		25	1674	9	1665	2.35
		50	1014	7	1007	1.42

DATE: 2.viii.58 TIME: 1550 STATION NO.: 116
 LATITUDE: 34°19' S. LONGITUDE: 152°49' E.

Bath	4 hrs	0	2076	19	2057	2.91
		25	2192	20	2172	3.07
		50	1579	8	1571	2.22

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 2.viii.58

STATION NO.: 116

LATITUDE: 34°19' S. LONGITUDE: 152°49' E. DEPTH 1% S.L.: 92 m

SOLAR ALT.: 36°

TIME: 1300

0	0.81	0.17	0.84	0.28	0.08
25	0.83	0.18	1.10	0.29	0.05
50	0.81	0.17	1.02	0.23	0.08

1100

0	100
10	78
20	55
30	36
40	22
50	12
60	7.5
70	3.9
80	2.1

CO₂ UPTAKE

INCUBATION		Depth	ACTIVITY			PRODUCTION	
Method	Period		Light	Dark	Net	mgC/m ³	gC/day/m ²

DATE: 2.viii.58

TIME: 1745

STATION NO.: 116

LATITUDE: 34°19' S.

LONGITUDE: 152°49' E.

Bath	4 hrs	0	1374	24	1350	1.99
		25	854	19	835	1.23
		50	961	13	948	1.40

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 2.viii.58

STATION NO.: 116

LATITUDE: 34°19' S. LONGITUDE: 152°49' E. DEPTH 1/2 S.L.: 78 m

SOLAR ALT.: 28°

TIME: 1750

1415

0	0.91	0.17	1.25	0.21	0.12
25	0.91	0.17	1.01	0.21	0.13
50	0.91	0.17	1.01	0.24	0.12

0	100
10	76
20	53
30	26
40	14
50	6.7
60	3.5
70	1.7

F.R.V. "Derwent Hunter" Cruise 14 1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ % sat.	σ _t	Total P μg.at/l
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DATE: 6.viii.58. TIME: 0750 hrs STATION No.: 117a
 LATITUDE: 34°42' S. LONGITUDE: 152°45' E.

SEA: 3 WIND: FORCE 4-5 WIRE ANGLE: 30°
 DIRECTION ENE.

0	17.90	35.59	5.28	102	25.77	0.43
216	14.85	35.37	4.74	86	26.31	0.62
433	11.06	34.92	4.36	73	26.72	0.96
606	8.64	34.67	4.45	70	26.93	1.28
784	7.04	34.52	4.45	68	27.05	1.48
972	5.63	34.47	4.24	62	27.19	1.57
1168	4.53	34.49	3.98	57	27.34	1.78
1366	3.56	34.54	3.71	52	27.47	1.91

DATE: 6.viii.58. TIME: 1345 hrs STATION No.: 117b
 LATITUDE: 34°54' S. LONGITUDE: 152°54' E.

SEA: 2 WIND: FORCE 4-5 WIRE ANGLE: 30°
 DIRECTION NE.

0	18.45	35.59			25.63	
242	15.15	35.39			26.24	
484	10.53	34.85			26.75	
680	7.93	34.56			26.95	
872	6.35	34.47			27.11	
1072	5.02	34.47			27.27	
1268	4.02	34.52			27.42	
1464	3.17	34.56			27.53	

DATE: 6.viii.58. TIME: 2035 hrs STATION No.: 117c
 LATITUDE: 34°42' S. LONGITUDE: 152°45' E.

SEA: 3 WIND: FORCE 5-6 WIRE ANGLE: 45°
 DIRECTION N.

0	18.73	35.57			25.55	
200	16.30	35.48			26.07	
400	11.56	34.96			26.66	
560	9.02	34.67			26.88	
728	7.52	34.54			27.00	
866	6.38	34.49			27.12	
1090	4.94	34.47			27.29	
1268	4.02	34.52			27.42	

CO₂ UPTAKE

INCUBATION		Depth	ACTIVITY			PRODUCTION	
Method	Period		Light	Dark	Net	mgC/m ³	gC/day/m ²
DATE: 6.viii.58			TIME: 0530			STATION NO.: 117	
LATITUDE: 34°54' S.						LONGITUDE: 152°54' E.	
<u>In situ</u>	1 day	0	619	30	589	3.33	
		25	600	22	578	3.27	0.18
		50	302	50	252	1.43	
		100	17	15	2	0.01	

DATE: 6.viii.58 TIME: 0530 STATION NO.: 117
 LATITUDE: 34°54' S. LONGITUDE: 152°54' E.

Bath	4 hrs	0	1524	91	1433	2.32	
		25	1442	93	1349	2.18	
		50	6996	256	6740	10.89	

DATE: 6.viii.58 TIME: 0740 STATION NO.: 117
 LATITUDE: 34°54' S. LONGITUDE: 152°54' E.

Bath	4 hrs	0	1905	31	1874	2.65	
		25	2582	32	2550	3.61	
		50	1481	34	1447	2.05	

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 6.viii.58

STATION NO.: 117

LATITUDE: 34°54' S. LONGITUDE: 152°54' E.

TIME:	0600					
0	0.68	0.35	0.53	0.22	0.01	
25	0.73	0.17	1.00	0.28		
50	0.93	0.30	1.20	0.27		

CO₂ UPTAKE

INCUBATION		Depth	ACTIVITY			PRODUCTION	
Method	Period		Light	Dark	Net	mgC/m ³	gC/day/m ²

DATE: 6.viii.58 TIME: 0935 STATION NO.: 117
 LATITUDE: 34°54' S. LONGITUDE: 152°54' E.

Bath	4 hrs	0	3307	46	3261	4.61
		25	2892	27	2865	4.05
		50	1013	43	970	1.37

DATE: 6.viii.58 TIME: 1135 STATION NO.: 117
 LATITUDE: 34°54' S. LONGITUDE: 152°54' E.

Bath	4 hrs	0	2697	30	2667	3.77
		25	1523	26	1497	2.12
		50	373	15	358	0.51

DATE: 6.viii.58 TIME: 1335 STATION NO.: 117
 LATITUDE: 34°54' S. LONGITUDE: 152°54' E.

Bath	4 hrs	0	909	24	885	1.25
		25	870	(25)	845	1.19
		50	66	(25)	41	0.06

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 6.viii.58

STATION NO.: 117

LATITUDE: 34°54' S. LONGITUDE: 152°54' E. DEPTH 1% S.L.: 73 m

SOLAR ALT.: 30°

0945

0	100
10	73
20	50
30	22
40	11.4
50	5.3
60	3.4
70	2.1

DATE: 6.viii.58

STATION NO.: 117

LATITUDE: 34°54' S. LONGITUDE: 152°54' E. DEPTH 1% S.L.: 88 m

SOLAR ALT.: 37°

TIME: 1210

1300

0	0.88	0.16	0.92	0.18	0.12
25	0.70	0.19	0.73	0.20	0.06
50	0.31	0.15	0.89	0.27	

0	100
10	74
20	40
30	30
40	21
50	14
60	9.9
70	8.2
80	4.9

F.R.V. "Derwent Hunter" Cruise 14 1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ ‰ sat.	σ _t	Total P μg.at/l
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DATE: 7.viii.58. TIME: 0815 hrs STATION No.: 117d
 LATITUDE: 35°12' S. LONGITUDE: 153°03' E.

SEA: 2 WIND: FORCE 4 WIRE ANGLE: 30°
 DIRECTION N.

0	19.09	35.57			25.46	
240	14.97	35.39			26.31	
482	10.12	34.81			26.80	
676	7.88	34.56			26.96	
837	6.25	34.47			27.13	
1065	4.88	34.49			27.31	
1249	3.87	34.52			27.44	
1469	3.20	34.56			27.54	

DATE: 7.viii.58. TIME: 1250 hrs STATION No.: 117e
 LATITUDE: 35°12' S. LONGITUDE: 153°03' E.

SEA: 2 WIND: FORCE 3 WIRE ANGLE: 20°
 DIRECTION NW.

0	19.31	35.59			25.42	
247	14.39	35.26			26.32	
494	9.68	34.78			26.85	
692	7.37	34.54			27.02	
892	5.95	34.49			27.17	
1092	4.71	34.49			27.32	
1292	3.65	34.52			27.46	
1492	3.11	34.56			27.54	

DATE: 7.viii.58. TIME: 1800 hrs STATION No.: 117f
 LATITUDE: 34°57' S. LONGITUDE: 153°19' E.

SEA: 2 WIND: FORCE 3 WIRE ANGLE: 10°
 DIRECTION WNW.

0	19.30	35.57	5.03	99	25.41	0.51
250	14.63	35.46	5.25	95	26.41	0.62
500	9.28	34.72	4.53	72	26.86	1.18
700	7.26	34.52	4.38	67	27.02	1.42
900	5.62	34.47	4.21	62	27.19	1.71
1100	4.47	34.49	3.92	55	27.34	1.83
1300	3.58	34.54	3.68	51	27.46	1.91
1500	3.01	34.58	3.58	49	27.55	1.98

CO₂ UPTAKE

INCUBATION		Depth	ACTIVITY			PRODUCTION	
Method	Period		Light	Dark	Net	mgC/m ³	gC/day/m ²

DATE: 7.viii.58 TIME: 0530 STATION NO.: 117
 LATITUDE: 35°12' S. LONGITUDE: 153°03' E.

Bath	4 hrs	0	852	25	827	1.22
		25	945	52	893	1.32
		50	581	21	560	0.83

DATE: 7.viii.58 TIME: 0940 STATION NO.: 117
 LATITUDE: 35°12' S. LONGITUDE: 153°03' E.

Bath	4 hrs	0	1320	29	1291	1.83
		25	1092	20	1072	1.52
		50	781	30	751	1.06

DATE: 7.viii.58 TIME: 1240 STATION NO.: 117
 LATITUDE: 35°12' S. LONGITUDE: 153°03' E.

Bath	4 hrs	0	1845	72	1773	2.51
		25	1628	20	1608	2.27
		50	858	32	826	1.17

LATITUDE:

LONGITUDE:

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 7.viii.58

STATION NO.: 117

LATITUDE: 35°12' S. LONGITUDE: 153°03' E.

TIME: 0800

0	0.49	0.10	0.75	0.20	0
25	0.54	0.12	0.90	0.35	
50	0.47	0.19	0.57	0.47	

DATE: 7.viii.58

STATION NO.: 117

LATITUDE: 35°12' S. LONGITUDE: 153°03' E.

TIME: 1230

0	0.61	0.16	0.71	0.14	0.11
25	0.58	0.13	0.71	0.20	0.07
50	0.42	0.10	0.60	0.33	

CO₂ UPTAKE

INCUBATION		Depth	ACTIVITY			PRODUCTION	
Method	Period		Light	Dark	Net	mgC/m ³	gC/day/m ²

DATE: 7.viii.58 TIME: 1445 STATION NO.: 117
 LATITUDE: 35°12' S. LONGITUDE: 153°03' E.

Bath	4 hrs	0	1406	62	1344	1.90
		25	1079	29	1050	1.48
		50	578	26	552	0.78

DATE: 7.viii.58 TIME: 1640 STATION NO.: 117
 LATITUDE: 35°12' S. LONGITUDE: 153°03' E.

Bath	4 hrs	0	930	26	904	1.28
		25	945	36	909	1.29
		50	961	36	925	1.31

DATE: 7.viii.58 TIME: 1930 STATION NO.: 117
 LATITUDE: 35°12' S. LONGITUDE: 153°03' E.

Bath	4 hrs	0	527	64	463	0.64
		25	516	25	491	0.68
		50	470	20	450	0.62

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 7.viii.58

STATION NO.: 117

LATITUDE: 35°12' S. LONGITUDE: 153°03' E.

TIME: 1745

0	0.69	0.25	0.63	0.15	0.08
25	0.51	0.22	0.53	0.20	0.05
50	0.45	0.19	0.35	0.25	

CO₂ UPTAKE

INCUBATION		Depth	ACTIVITY			PRODUCTION	
Method	Period		Light	Dark	Net	mgC/m ³	gC/day/m ²

DATE: 7.viii.58

TIME: 2320

STATION NO.: 117

LATITUDE: 35°12' S.

LONGITUDE: 153°03' E.

Bath	4 hrs	0	729	38	691	0.96
		25	665	28	637	0.88
		50	656	62	594	0.82

F.R.V. "Derwent Hunter" Cruise 15 1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ % sat.	σ _t	Total P μg.at/l
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DATE: 16.viii.58. TIME: 2036 hrs STATION No.: 118

LATITUDE: 33°38' S. LONGITUDE: 152°35' E.

SEA: - WIND: FORCE 5 WIRE ANGLE: 50°, 30°
DIRECTION W.

0	19.50	35.39	4.99	99	25.21	0.33
23	19.48	35.44	4.96	98	25.27	0.37
45	19.45	35.43	5.02	99	25.27	0.37
66	18.63	35.53	4.82	94	25.54	0.43
88	17.85	35.50	4.37	84	25.71	0.62
132	14.90	35.23	3.96	72	26.20	0.84
178	14.24	35.25	4.42	79	26.35	0.95
273	12.42	35.07	4.48	77	26.58	0.81
308	11.90	35.01			26.64	0.85
456	9.40	34.70	4.42	71	26.83	1.04
626	7.60	34.54	4.47	69	26.98	1.41
985	4.81	34.45	4.08	59	27.28	1.59

DATE: 17.viii.58. TIME: 0800 hrs STATION No.: 119

LATITUDE: 33°26' S. LONGITUDE: 153°49' E.

SEA: - WIND: FORCE 5 WIRE ANGLE: 45°, 12°
DIRECTION W.

0	20.50	35.61	4.90	99	25.12	0.33
25	20.56	35.59	4.84	98	25.09	0.33
50	20.53	35.59			25.09	0.32
75	20.54	35.59	4.88	98	25.09	0.33
100	20.55	35.59	4.93	99	25.09	0.40
150	20.63	35.59	4.82	97	25.07	0.40
200	20.15	35.59	4.69	94	25.19	0.40
300	19.50	35.55	4.37	87	25.35	0.47
388	17.40	35.50			25.93	0.45
599	12.73	35.05			26.51	0.85
819	8.54	34.65	4.34	68	26.85	1.13
1278	4.83	34.47			27.29	1.59

CO₂ UPTAKE

INCUBATION		Depth	ACTIVITY			PRODUCTION	
Method	Period		Light	Dark	Net	mgC/m ³	gC/day/m ²

DATE: 17.viii.58

TIME: 0745

STATION NO.: 119

LATITUDE: 33°26' S.

LONGITUDE: 153°49' E.

Bath	4 hrs	0	542	38	504	0.71
		25	549	137	412	0.58
		50	508	35	473	0.67
		100	546	7	539	0.76

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 17.viii.58

STATION NO.: 119

LATITUDE: 33°26' S. LONGITUDE: 153°49' E. DEPTH 1% S.L.: 80 m

SOLAR ALT.: 40°

TIME: 0745

1030

0	0.27	0.17	0.59	0.15		0	100
25	0.17	0.08	0.35	0.07		10	84
50	0.19	0.13	0.74	0.16		20	69
100	0.18	0.06	0.44	0.15		30	66
						40	50
						50	33
						60	30
						70	20
						80	13

F.R.V. "Derwent Hunter" Cruise 15 1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ ‰ sat.	σ _t	Total P μg.at/l
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DATE: 17.viii.58. TIME: 2004 hrs STATION No.: 120
 LATITUDE: 32°39' S. LONGITUDE: 154°46' E.

SEA: - WIND: FORCE 5 WIRE ANGLE: 30°, 20°
 DIRECTION WSW.

0	20.63	35.64	4.93	100	25.12	0.34
24	20.61	35.62	4.84	98	25.10	0.34
48	20.55	35.61	4.88	99	25.11	0.31
72	20.64	35.61			25.08	0.31
95	20.61	35.59	4.93	100	25.08	0.44
143	20.73	35.61	4.88	99	25.06	0.40
191	20.67	35.62	4.78	97	25.08	0.44
290	18.70	35.53			25.52	0.44
476	15.55	35.39	4.25	78	26.17	0.55
720	10.29	34.79	4.28	70	26.76	1.01
968	7.12	34.52	4.34	66	27.04	1.21
1466	4.01	34.51	3.82	54	27.41	1.53

DATE: 18.viii.58. TIME: 0822 hrs STATION No.: 121
 LATITUDE: 32°07' S. LONGITUDE: 155°58' E.

SEA: - WIND: FORCE 5 WIRE ANGLE: 42°, 22°
 DIRECTION WSW.

0	20.63	35.59	4.93	100	25.07	0.36
24	20.55	35.59	4.90	99	25.09	0.32
48	19.68	35.61	4.78	95	25.35	0.32
72	19.73	35.61	4.90	98	25.34	0.32
95	19.10	35.61	4.84	95	25.48	0.32
143	18.85	35.61	4.66	91	25.55	0.42
190	17.50	35.50	4.23	81	25.79	0.55
286	14.99	35.26	4.12	75	26.20	0.77
374	13.25	35.14	4.04	71	26.47	0.77
583	9.59	34.74	4.41	71	26.84	1.05
805	7.22	34.52	4.27	65	27.02	1.15
1266	4.22	34.51	4.86	69	27.38	1.71

CO₂ UPTAKE

INCUBATION		Depth	ACTIVITY			PRODUCTION	
Method	Period		Light	Dark	Net	mgC/m. ³	gC/day/m ²

DATE: 17.viii.58 TIME: 1945 STATION NO.: 120
 LATITUDE: 32°39' S. LONGITUDE: 154°46' E.

Bath	4 hrs	0	374	36	338	0.48
		25	393	38	355	0.50
		50	384	104	280	0.40
		100	451	28	423	0.60

DATE: 18.viii.58 TIME: 0745 STATION NO.: 121
 LATITUDE: 32°07' S. LONGITUDE: 155°58' E.

Bath	4 hrs	0	1526	73	1453	2.05
		25	1927	30	1897	2.68
		50	1560	31	1529	2.16
		100	331	45	286	0.40

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 17.viii.58

STATION NO.: 120

LATITUDE: 32°39' S. LONGITUDE: 154°46' E.

TIME: 2000

0	0.27	0.18	0.79	0.18
25	0.28	0.19	0.72	0.16
50	0.28	0.16	1.08	0.20
100	0.32	0.17	0.63	0.25

DATE: 18.viii.58

STATION NO.: 121

LATITUDE: 32°07' S. LONGITUDE: 155°58' E. DEPTH 1% S.L.: 89 m

SOLAR ALT.: 43°

TIME: 0815

1045

0	0.58	0.20	0.73	0.15	0.01	0	100
25	0.60	0.19	0.77	0.15	0.03	10	68
50	0.43	0.16	0.27	0.12	0.05	20	65
100	0.22	0.16	0.48	0.26		30	44
						40	32
						50	30
						60	21
						70	8.3

F.R.V. "Derwent Hunter" Cruise 15 1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ ‰ sat.	σ _t	Total P μg.at/l
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DATE: 18.viii.58. TIME: 1920 hrs STATION No.: 122

LATITUDE: 31°58' S. LONGITUDE: 156°45' E.

SEA: - WIND: FORCE 4 WIRE ANGLE: 0, 15°
DIRECTION WSW.

0	20.12	35.61	4.84	97	25.22	0.30
25	20.05	35.61	4.84	97	25.24	0.21
50	20.00	35.61	3.03	61	25.26	0.21
75	19.93	35.61	4.78	95	25.28	0.33
100	19.35	35.59	4.49	89	25.40	0.43
150	18.30	35.55	4.47	87	25.64	0.45
200	16.80	35.43	4.01	76	25.91	0.35
300	14.44	35.30	4.49	81	26.35	0.61
500	10.43	34.87	4.36	72	26.79	1.01
750	7.35	34.56	4.43	68	27.03	1.36
1000	5.49	34.49	4.14	60	27.22	1.61
1500	3.05	34.56	3.55	49	27.54	1.86

DATE: 19.viii.58. TIME: 0635 hrs STATION No.: 123

LATITUDE: 31°47' S. LONGITUDE: 157°44' E.

SEA: - WIND: FORCE 4 WIRE ANGLE: 17°, 10°
DIRECTION WSW.

0	19.96	35.62	4.90	98	25.28	0.31
25	19.96	35.61	4.52	90	25.27	0.23
50	19.70	35.61	4.81	96	25.34	0.31
75	19.69	35.61	4.90	97	25.35	0.25
100	19.35	35.61	4.93	97	25.42	0.45
150	18.81	35.59	4.81	94	25.54	0.32
200	17.55	35.50	4.27	82	25.78	0.44
300	15.37	35.34	4.23	77	26.17	0.60
500	11.05	34.92	4.33	72	26.73	0.94
750	7.72	34.69			27.08	1.08
1000	5.51	34.47	4.01	59	27.21	1.58
1500	3.22	34.56	3.52	48	27.52	1.77

CO₂ UPTAKE

INCUBATION		Depth	ACTIVITY			PRODUCTION	
Method	Period		Light	Dark	Net	mgC/m ³	gC/day/m ²

DATE: 18.viii.58 TIME: 1830 STATION NO.: 122
 LATITUDE: 31°58' S. LONGITUDE: 156°45' E.

Bath	4 hrs	0	746	53	693	0.98
		25	716	36	680	0.96
		50	680	31	649	0.92
		100	71	31	40	0.06

DATE: 19.viii.58 TIME: 0610 STATION NO.: 123
 LATITUDE: 31°47' S. LONGITUDE: 157°44' E.

Bath	4 hrs	0	1298	701	597	0.84
		25				
		50	1366	36	1330	1.88
		100	1249	65	1184	1.67

LATITUDE:

LONGITUDE:

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 19.viii.58

STATION NO.: 122

LATITUDE: 31°58' S. LONGITUDE: 156°45' E. DEPTH 1% S.L.: 90 m

SOLAR ALT.: 30°

TIME: 1900

0845

0	0.27	0.12	0.29	0.11	0.03	0	100
25	0.34	0.10	0.33	0.09	0.05	10	63
50	0.47	0.12	0.44	0.13	0.06	20	41
100	0.27	0.09	0.37	0.08	0.08	30	35
						40	21
						50	10
						60	5.8

DATE: 19.viii.58

STATION NO.: 123

LATITUDE: 31°47' S. LONGITUDE: 157°44' E.

TIME: 0630

0	0.44	0.25	0.76	0.16	0.02
25	0.41	0.22	0.79	0.11	0.05
50	0.37	0.22	0.76	0.18	
100	0.24	0.12	0.37	0.10	0

F.R.V. "Derwent Hunter"

Cruise 15

1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ o/o sat.	σ_t	Total P $\mu\text{g.at/l}$
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DATE: 21.viii.58. TIME: 0746 hrs STATION No.: 124

LATITUDE: 31°26' S. LONGITUDE: 158°56' E.

SEA: - WIND: FORCE 6 WIRE ANGLE: 12°, 3°
DIRECTION WSW.

0	18.79	35.61	4.98	97	25.57	0.41
25	18.66	35.66	4.95	97	25.64	0.66
50	18.50	35.62	4.66	91	25.64	0.34
75	18.54	35.62	4.95	96	25.63	0.32
100	18.50	35.62	4.95	96	25.64	0.44
150	18.06	35.57	4.57	88	25.72	0.47
200	17.30	35.50	4.43	84	25.84	0.44
300	14.65	35.32	4.43	80	26.32	0.71
500	10.55	34.90	4.43	73	26.79	1.07
750	7.65	34.58	4.43	68	27.01	1.54
1000	5.69	34.47	4.14	61	27.18	1.73
1500	3.26	34.56			27.52	1.97

DATE: 22.viii.58. TIME: 1150 hrs STATION No.: 125

LATITUDE: 31°07' S. LONGITUDE: 157°25' E.

SEA: - WIND: FORCE 4 WIRE ANGLE: 47°, 27°
DIRECTION SW.

0	17.00	35.68	5.36	102	26.06	0.45
22	16.93	35.52	5.30	100	25.94	0.35
44	16.68	35.52	5.26	99	26.01	0.41
65	16.00	35.50	5.07	94	26.16	0.51
87	15.80	35.50	5.21	96	26.20	0.55
130	15.10	35.43	4.78	87	26.29	0.63
174	14.05	35.28	4.57	81	26.42	0.79
260	11.98	35.07	4.60	78	26.67	0.68
336	10.50	34.88	4.38	72	26.79	1.11
516	8.49	34.63	4.54	71	26.93	1.17
716	6.94	34.65	4.38	66	27.17	1.12
1164	4.11	34.52	4.01	57	27.40	1.84

CO₂ UPTAKE

INCUBATION		Depth	ACTIVITY			PRODUCTION	
Method	Period		Light	Dark	Net	mgC/m ³	gC/day/m ²

DATE: 21.viii.58 TIME: 0545 STATION NO.: 124
 LATITUDE: 31°26' S. LONGITUDE: 158°56' E.

Bath	1 day	0	2168	118	2050	11.59	
		25	1648	181	1467	8.30	0.42
		50	385	119	266	1.50	
		100	186	72	114	0.64	

DATE: 21.viii.58 TIME: 0545 STATION NO.: 124
 LATITUDE: 31°26' S. LONGITUDE: 158°56' E.

Bath	4 hrs	0	1232	97	1135	1.60	
		25	1174	98	1076	1.52	1.02
		50	701	26	675	0.95	
		100	286	52	234	0.33	

DATE: 21.viii.58 TIME: 1630 STATION NO.: 124
 LATITUDE: 31°26' S. LONGITUDE: 158°56' E.

Bath	4 hrs	0	1462	68	1394	1.97	
		25	1578	43	1535	2.17	1.45
		50	866	70	796	1.13	
		100	748	74	674	0.95	

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 21.viii.58

STATION NO.: 124

LATITUDE: 31°26' S. LONGITUDE: 158°56' E.

TIME: 0600

0	0.53	0.21	0.52	0.13	0.09
25	1.38	0.84	6.37	0.92	
50	0.30	0.20	0.65	0.13	
100	0.15	0.08	0.40	0.11	

DATE: 21.viii.58

STATION NO.: 124

LATITUDE: 31°26' S. LONGITUDE: 158°56' E.

TIME: 1630

0	0.79	0.49	1.77	0.30	
25	0.67	0.30	1.22	0.17	0.38
50	0.36	0.24	0.68	0.10	0.73

CO₂ UPTAKE

INCUBATION		Depth	ACTIVITY			PRODUCTION	
Method	Period		Light	Dark	Net	mgC/m ³	gC/day/m ²

DATE: 22.viii.58

TIME: 1130

STATION NO.: 125

LATITUDE: 31°07' S.

LONGITUDE: 157°25' E.

Bath	4 hrs	0	958	76	882	1.25
		25	1573	79	1494	2.11
		50	1742	44	1698	2.40

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 22.viii.58

STATION NO.: 125

LATITUDE: 31°07' S. LONGITUDE: 157°25' E.

TIME: 1415

0	0.32	0.07	0.40	0.10	0.05
25	0.27	0.11	0.45	0.08	0.04
50	0.46	0.16	0.86	0.14	0.05
100	0.36	0.15	1.09	0.17	

F.R.V. "Derwent Hunter" Cruise 15 1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ o/o sat.	σ _t	Total P μg.at/l
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DATE: 23.viii.58. TIME: 1212 hrs STATION No.: 126

LATITUDE: 31°03' S. LONGITUDE: 158°01' E.

SEA: - WIND: FORCE 3 WIRE ANGLE: 52°, 25°
DIRECTION W.

0	19.19	35.61	5.09	100	25.46	0.31
23	19.05	35.61	4.83	95	25.50	0.33
45	18.95	35.61	5.04	99	25.52	0.29
67	18.99	35.61	4.98	98	25.52	0.33
90	19.00	35.61	5.02	99	25.51	0.44
137	18.45	35.57	4.49	87	25.62	0.54
185	16.97	35.46	4.14	78	25.90	0.67
245	14.04	35.23	4.33	77	26.38	0.68
284	13.89	35.23	4.04	72	26.41	0.82
389	11.15	34.90	4.17	70	26.69	1.09
546	9.08	34.70	4.54	72	26.89	1.20
886	5.98	34.49	4.41	65	27.17	1.71

DATE: 24.viii.58. TIME: 0809 hrs STATION No.: 127

LATITUDE: 30°58' S. LONGITUDE: 156°57' E.

SEA: - WIND: FORCE 2-3 WIRE ANGLE: 18°, 7°
DIRECTION SE.

0	19.21	35.61	5.09	100	25.45	0.41
25	19.06	35.62	5.11	101	25.50	0.60
50	18.84	35.61	4.95	97	25.55	0.50
75	17.71	35.52	4.72	90	25.76	0.65
100	16.78	35.46	4.43	83	25.93	0.61
150	15.86	35.43	4.43	82	26.13	0.64
200	15.28	35.39	4.98	91	26.22	0.64
300	12.41	35.14	4.63	80	26.64	0.78
441	9.50	34.74	4.54	73	26.85	1.16
673	7.11	34.54	4.43	67	27.06	1.54
900	5.68	34.51	4.27	63	27.22	1.57
1384	3.45	34.56	3.60	50	27.50	1.97

CO₂ UPTAKE

INCUBATION		Depth	ACTIVITY			PRODUCTION	
Method	Period		Light	Dark	Net	mgC/m ³	gC/day/m ²

DATE: 23.viii.58 TIME: 0530 STATION NO.: 126
 LATITUDE: 31°03' S. LONGITUDE: 158°01' E.

<u>In situ</u>	1 day	0	962	240	722	4.08	
		25	1699	262	1437	8.13	0.43
		50	977	131	846	4.78	

DATE: 23.viii.58 TIME: 0530 STATION NO.: 126
 LATITUDE: 31°03' S. LONGITUDE: 158°01' E.

Bath	4 hrs	0	1203	85	1118	1.58	
		25	1497	67	1430	2.02	
		50	1356	28	1328	1.88	
		100	70	40	30	0.04	

DATE: 23.viii.58 TIME: 1130 STATION NO.: 126
 LATITUDE: 31°03' S. LONGITUDE: 158°01' E.

Bath	4 hrs	0	1432	58	1374	1.94	
		25	1440	83	1357	1.92	
		50	1486	56	1430	2.02	
		100	187	54	133	0.36	

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 23.viii.58

STATION NO.: 126

LATITUDE: 31°03' S. LONGITUDE: 158°01' E. DEPTH 1% S.L.: 98 m

SOLAR ALT.: 30°

TIME: 0700

0830

0	0.44	0.13	0.78	0.12	0.05	0	100
25	0.44	0.14	0.82	0.19	0.03	10	86
50	0.36	0.14	0.65	0.11	0.05	20	62
100	0.19	0.01	0.69	0.17		30	44
						40	27
						50	14
						60	9.0
						70	5.1
						80	3.1

DATE: 23.viii.58

STATION NO.: 126

LATITUDE: 31°03' S. LONGITUDE: 158°01' E. DEPTH 1% S.L.: 99 m

SOLAR ALT.: 47°

TIME: 1200

1120

0	0.44	0.18	0.73	0.13	0.04	0	100
25	0.47	0.20	0.74	0.16	0.03	10	80
50	0.50	0.14	0.91	0.14	0.05	20	99
100	0.35	0.12	0.76	0.10	0.06	30	81
						40	58
						50	40
						60	25
						70	16
						80	8.2

CO₂ UPTAKE

INCUBATION		Depth	ACTIVITY			PRODUCTION	
Method	Period		Light	Dark	Net	mgC/m ³	gC/day/m ²

DATE: 23.viii.58

TIME: 1745

STATION NO.: 126

LATITUDE: 31°03' S.

LONGITUDE: 158°01' E.

Bath	4 hrs	0	745	84	661	0.93
		25	474	37	437	0.61
		50	506	47	459	0.65
		100	466	79	387	0.55

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 23.viii.58

STATION NO.: 126

LATITUDE: 31°03' S. LONGITUDE: 158°01' E. DEPTH 1% S.L.: 99 m

SOLAR ALT.: 31°

TIME: 1745

1420

0	0.44	0.10	0.89	0.10	0.05	0	100
25	0.51	0.17	1.19	0.18	0.02	10	81
50	0.48	0.19	0.78	0.14	0.04	20	65
						30	43
						40	30
						50	19
						60	12
						70	6.0
						80	3.4

CO₂ UPTAKE

INCUBATION		Depth	ACTIVITY			PRODUCTION	
Method	Period		Light	Dark	Net	mgC/m ³	gC/day/m ²

DATE: 24.viii.58 TIME: 0745 STATION NO.: 127
 LATITUDE: 30°58' S. LONGITUDE: 156°57' E.

Bath	4 hrs	0	1722	84	1638	2.32
		25	1434	232	1202	1.70
		50	986	80	906	1.28
		100				

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 24.viii.58

STATION NO.: 127

LATITUDE: 30°58' S. LONGITUDE: 156°57' E. DEPTH 1% S.L.: 102 m

SOLAR ALT.: 36°

TIME: 0900

0920

0	0.50	0.12	0.88	0.10	0.09	0	100
25	0.51	0.27	0.91	0.12	0.11	10	78
50	0.43	0.17	0.42	0.12	0.08	20	63
100	0.10	0.04	0.14	0.09		30	44
						40	28
						50	17
						60	10
						70	6.3
						80	3.9

F.R.V. "Derwent Hunter"

Cruise 15

1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ % sat.	σ_t	Total P $\mu\text{g.at/l}$
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DATE: 28.viii.58. TIME: 0500 hrs STATION No.: 129
 LATITUDE: 31°20' S. LONGITUDE: 153°54' E.

SEA: - WIND: FORCE 3 WIRE ANGLE: 10°, 10°
 DIRECTION SW.

0	20.89	35.68	5.04	102	25.08	0.44
25	20.92	35.62	5.02	102	25.02	0.35
50	20.42	35.68	4.96	100	25.19	0.43
75	20.09	35.68	4.99	100	25.30	0.42
100	19.93	35.64	4.73	94	25.30	0.40
150	19.04	35.61	4.15	82	25.50	0.48
200	17.41	35.52	4.02	77	25.83	0.64
300	14.65	35.28	4.12	74	26.29	0.84
500	10.71	34.88	4.37	72	26.75	1.12
750	7.34	34.56	4.44	68	27.03	1.45
1000	6.83	34.51	4.15	63	27.07	1.62
1500	3.28	34.61	3.45	48	27.56	1.80

DATE: 28.viii.58. TIME: 1637 hrs STATION No.: 130
 LATITUDE: 31°59' S. LONGITUDE: 154°34' E.

SEA: - WIND: FORCE 5 WIRE ANGLE: 10°, 7°
 DIRECTION S.

0	20.07	35.62	4.95	99	25.24	0.35
25	20.09	35.62	5.02	101	25.24	0.34
50	20.07	35.64	4.95	99	25.27	0.71
75	20.05	35.62	4.98	100	25.25	0.34
100	20.12	35.62	4.95	99	25.23	0.35
150	20.10	35.62			25.23	0.34
200	19.76	35.62	4.60	92	25.33	0.42
300	17.85	35.59	4.36	84	25.78	0.62
500	13.49	35.16	4.23	74	26.44	0.89
750	9.14	34.70	4.46	71	26.88	1.27
1000	6.51	34.52	4.41	66	27.12	1.32
1500	3.63	34.54	3.64	51	27.47	1.91

F.R.V. "Derwent Hunter" Cruise 15 1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ ‰ sat.	σ _t	Total P μg.at/l
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DATE: 29.viii.58. TIME: 0735 hrs STATION No.: 131
 LATITUDE: 32°43' S. LONGITUDE: 154°57' E.

SEA: - WIND: FORCE 5 DIRECTION S. WIRE ANGLE: 37°, 20°

0	19.93	35.62	4.52	90	25.28	0.43
24	19.81	35.62			25.32	0.35
48	19.79	35.62	5.07	101	25.33	0.35
72	19.73	35.70	5.02	100	25.39	0.34
96	19.86	35.64	4.95	99	25.33	0.34
144	19.71	35.64	4.93	98	25.36	0.32
193	19.33	35.61	4.52	89	25.42	0.52
292	17.36	35.52	4.43	84	25.84	0.64
492	14.30	35.35	4.98	89	26.41	0.65
700	11.70	34.99	4.54	77	26.66	0.76
950	7.58	34.63			27.06	1.16
1448	4.32	34.51	3.81	54	27.38	1.84

DATE: 30.viii.58. TIME: 0608 hrs STATION No.: 132
 LATITUDE: 33°28' S. LONGITUDE: 156°12' E.

SEA: 4 WIND: FORCE 5-6 DIRECTION S. WIRE ANGLE: 40°, 17°

0	16.72	35.50	5.27	99	25.98	0.43
22	16.77	35.55	5.47	103	26.01	0.47
42	16.67	35.61	5.20	98	26.08	0.80
65	16.20	35.48	4.93	92	26.09	0.53
87	15.84	35.50	5.07	94	26.18	0.56
134	14.97	35.43	5.02	91	26.33	0.61
182	13.20	35.16	4.47	78	26.50	0.86
278	11.60	34.99	4.52	76	26.68	0.95
477	9.14	34.70	4.47	71	26.88	1.24
616	7.49	34.56	4.12	63	27.02	1.45
847	5.95	34.47	4.18	62	27.15	1.57
1337	3.59	34.54	3.53	49	27.47	1.89

F.R.V. "Derwent Hunter" Cruise 15 1958

Depth (m)	Temp. °C	Chlorinity ‰	O ₂ ml/l	O ₂ ‰ sat.	σ _t	Total P μg.at/l
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DATE: 31.viii.58. TIME: 0815 hrs STATION No.: 133

LATITUDE: 34°57' S. LONGITUDE: 156°24' E.

SEA: - WIND: FORCE 6 WIRE ANGLE: 20°, 15°
DIRECTION: S.

0	19.69	35.61	4.76	95	25.34	0.42
25	19.69	35.61	4.88	97	25.34	0.36
50	19.65	35.61	4.76	95	25.36	0.37
75	19.53	35.61	4.82	96	25.37	0.34
100	19.20	35.61	4.76	94	25.46	0.42
150	17.86	35.52	4.37	84	25.72	0.51
200	14.65	35.32	4.47	81	26.32	0.67
300	12.30	35.05	4.39	75	26.59	0.95
500	8.94	34.70	4.44	70	26.91	1.36
750	6.76	34.51	4.34	65	27.08	1.36
1000	5.12	34.47	4.02	58	27.26	1.66
1500	3.12	34.60	3.51	48	27.56	1.89

F.R.V. "Derwent Hunter" Cruise 16 1958

Depth (m)	Temp. °C	S ‰	O ₂ ml/l	O ₂ o/o sat.	σ _t	Total P μg.at/l
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DATE: 3.x.58. TIME: 0100 hrs STATION No.: 134

LATITUDE: 34°12' S. LONGITUDE: 151°31' E.

SEA: 1 WIND: FORCE 1 WIRE ANGLE: 2°
DIRECTION SE.

0	17.27	35.57	5.63	107	25.91	0.33
25	17.01	35.57	5.63	107	25.97	0.29
50	16.15	35.48	4.81	89	26.11	0.44
75	14.75	35.37	4.52	82	26.34	0.61
100	14.05	35.32	4.52	81	26.44	0.65
150	13.20	35.30	5.15	90	26.61	0.66
200	12.75	35.28	5.05	88	26.68	0.67
250	12.35	35.21	5.02	86	26.70	0.70

DATE: 3.x.58. TIME: 0740 hrs STATION No.: 135

LATITUDE: 34°15' S. LONGITUDE: 151°37' E.

SEA: 1 WIND: FORCE 1 WIRE ANGLE: -
DIRECTION NW.

0	17.30	35.55	5.64	107	25.88	0.33
25	17.15	35.55	5.65	107	25.92	0.37
50	16.85	35.55	5.55	105	26.00	0.39
75	15.67	35.44	4.73	87	26.18	0.65
100	14.20	35.34	4.50	81	26.43	0.82
150	13.70	35.32	4.82	85	26.51	0.76
200	12.92	35.23	4.94	86	26.61	0.79
300	11.05	34.96	4.70	78	26.75	0.96
500	9.60	34.83	4.76	77	26.92	1.19
750	6.46	34.51	4.46	67	27.12	1.52

CO₂ UPTAKE

INCUBATION		Depth	ACTIVITY			PRODUCTION	
Method	Period		Light	Dark	Net	mgC/m ³	gC/day/m ²

DATE: 3.x.58 TIME: 0430 STATION NO.: 135
 LATITUDE: 34°15' S. LONGITUDE: 151°37' E.

<u>In situ</u>	½ day	0	58.8	18.2	40.6	5.07
		25	45.3	13.3	32.0	4.00
		50	33.2	2.9	30.3	3.78
		100	59.3	13.4	35.9	4.48

DATE: 3.x.58 TIME: 0430 STATION NO.: 135
 LATITUDE: 34°15' S. LONGITUDE: 151°37' E.

Bath	4 hrs	0	48.2	20.2	28.0	0.44
		25	82.2	53.8	28.4	0.44
		100	67.0	9.8	57.2	0.89

DATE: 3.x.58 TIME: 1130 STATION NO.: 135
 LATITUDE: 34°15' S. LONGITUDE: 151°37' E.

Bath	4 hrs	0	49.4	12.7	36.7	0.57
		25	88.4	3.6	84.8	1.32
		50	68.2	17.3	50.9	0.79
		100	30.3	9.1	21.2	0.33

0.08

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 3.x.58

STATION NO.: 135

LATITUDE: 34°15' S. LONGITUDE: 151°37' E. DEPTH 1% S.L.: 81 m

SOLAR ALT.: 52°

TIME: 0445

1000

0	0.43	0.13	0.53	0.21	0.10	0	100
25	0.37	0.17	0.77	0.32	0.02	10	81
50	1.01	0.11	0.80	0.34	0.19	20	68
100	0.69	0.23	1.18	0.43	0.12	30	45
						40	30
						50	16
						60	7.2
						70	3.3
						80	2.0

DATE: 3.x.58

STATION NO.: 135

LATITUDE: 34°15' S. LONGITUDE: 151°37' E. DEPTH 1% S.L.: 89 m

SOLAR ALT.: 59°

TIME: 1130

1200

0	0.28	0.14	0.65	0.20	0.04	0	100
25	0.35	0.13	0.98	0.18	0.07	10	86
50	0.64	0.13	0.79	0.28	0.11	20	71
100	0.25	0.09	0.70	0.23	0.07	30	54
						40	38
						50	22
						60	11
						70	4.7
						80	2.4

F.R.V. "Derwent Hunter"

Cruise 16

1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ ‰ sat.	σ _t	Total P μg.at/l
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DATE: 3.x.58. TIME: 1350 hrs STATION No.: 136

LATITUDE: 34°15' S. LONGITUDE: 151°46' E.

SEA: 2 WIND: FORCE 3-4 WIRE ANGLE: 42°, 30°
DIRECTION NNE.

0	17.84	35.59	5.49	106	25.79	0.37
23	17.40	35.59	5.53	106	25.89	0.31
32	17.25	35.55	5.55	106	25.90	0.25
52	16.42	35.52	5.06	95	26.07	0.48
96	15.40	35.39	4.37	80	26.20	0.66
140	14.65	35.39	4.76	86	26.36	0.67
190	13.60	35.30	4.70	84	26.52	0.71
277	12.20	35.19	4.88	84	26.72	0.78
390	10.17	34.87	4.66	76	26.85	1.08
600	8.16	34.65	4.46	69	26.99	1.34
807	6.23	34.51	4.31	65	27.15	1.58
1230	3.65	34.56	3.68	51	27.48	1.97

DATE: 3.x.58. TIME: 1350 hrs STATION No.: 137

LATITUDE: 34°31' S. LONGITUDE: 152°02' E.

SEA: 2 WIND: FORCE 4 WIRE ANGLE: 45°, 30°
DIRECTION NE-NW.

0	17.80	35.62	5.31	102	25.81	0.43
22	17.78	35.61	5.34	102	25.81	0.48
44	17.65	35.59	5.27	101	25.82	0.47
71	16.25	35.48	5.02	94	26.08	0.56
89	15.70	35.48	5.40	100	26.21	0.52
134	14.65	35.43	5.05	91	26.40	0.64
136	14.60	35.41	4.95	89	26.39	0.65
181	13.10	35.19	4.52	79	26.54	0.87
377	11.90		5.44			0.74
578	7.95	34.58	4.52	70	26.97	1.43
792	5.90	34.47	4.37	64	27.17	2.09
1248	3.46	34.54	3.82	53	27.49	1.93

F.R.V.

"Derwent Hunter"

Cruise 16

1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ o/o sat.	σ_t	Total P $\mu\text{g.at/l}$
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DATE: 4.x.58. TIME: 1315 hrs STATION No.: 138

LATITUDE: 35°06' S. LONGITUDE: 152°56' E.

SEA: 2 WIND: FORCE 3 WIRE ANGLE: 48°, 33°
DIRECTION N.

0	19.11	35.62	5.31	105	25.48	0.54
21	18.68	35.62	5.36	105	25.60	0.39
40	17.70	35.59	5.23	100	25.82	0.41
61	17.47	35.59	5.27	101	25.87	0.41
84	16.68	35.50	4.58	86	26.00	0.64
127	15.38	35.44	4.85	89	26.24	0.62
172	14.37	35.35	4.64	83	26.40	0.68
264	11.61	34.99	4.39	74	26.68	1.04
322	10.96	34.96	4.46	74	26.77	1.07
479	9.33	34.79	4.70	75	26.92	1.24
635	7.13	34.54	4.37	66	27.05	1.43
932	4.49	34.51	3.84	55	27.36	1.67

DATE: 5.x.58. TIME: 1814 hrs STATION No.: 139

LATITUDE: 35°01' S. LONGITUDE: 155°02' E.

SEA: 2 WIND: FORCE 3 WIRE ANGLE: 25°, 35°, 35°*
DIRECTION N.

0	18.39	35.55	5.27	102	25.62	0.43
17	18.07	35.55	5.34	103	25.70	0.42
34	18.00	35.57	5.40	104	25.72	0.52
51	17.77	35.57	5.36	103	25.78	0.43
70	17.60	35.55	5.48	105	23.81	0.43
109	16.65	35.44	5.06	95	25.96	0.61
148	15.73	35.43	4.94	91	26.16	0.75
230*	13.70	35.25	4.58	81	26.46	0.95
423	10.41	34.87	4.55	75	26.79	1.27
641	8.29	34.63	4.43	69	26.96	1.40
890	6.55	34.47	4.43	66	27.07	1.80
1336	3.76	34.54	3.87	54	27.46	2.00

CO₂ UPTAKE

INCUBATION		Depth	ACTIVITY			PRODUCTION	
Method	Period		Light	Dark	Net	mgC/m ³	gC/day/m ²

DATE: 4.x.58 TIME: 0430 STATION NO.: 138
 LATITUDE: 35°06' S. LONGITUDE: 152°56' E.

<u>In situ</u>	1 day	0	155.0	23.7	131.3	8.20
		25	329.6	15.4	314.2	19.62
		50	278.0	8.5	269.5	16.83

DATE: 4.x.58 TIME: 0430 STATION NO.: 138
 LATITUDE: 35°06' S. LONGITUDE: 152°56' E.

Bath	4 hrs	0	163.0	6.8	156.2	2.44
		25	187.3	11.4	175.9	2.75
		50	328.5	10.0	318.5	4.97
		100	108.5	10.4	98.1	1.53

DATE: 4.x.58 TIME: 1220 STATION NO.: 138
 LATITUDE: 35°06' S. LONGITUDE: 152°56' E.

Bath	4 hrs	0	232.6	8.8	223.8	3.49
		25	287.6	7.1	280.5	4.38
		50	180.1	13.1	167.0	2.61

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 4.x.58 STATION NO.: 138
 LATITUDE: 35°06' S. LONGITUDE: 152°56' E. DEPTH 1% S.L.: 94 m
 SOLAR ALT.: 31°

TIME:						0800		
0	0.64	0.18	0.60	0.46		0	100	
25	0.96	0.11	1.20	0.21	0.18	10	82	
50	2.95	0.17	1.63	0.25	0.50	20	58	
100	0.64	0.07	1.05	0.23	0.08	30	38	
						40	30	
						50	24	
						60	19	
						70	11	
						80	4.3	

DATE: 4.x.58 STATION NO.: 138
 LATITUDE: 35°06' S. LONGITUDE: 152°56' E. DEPTH 1% S.L.: 82 m
 SOLAR ALT.: 48°

TIME:						1345		
0	0.96		1.96	0.07	0.31	0	100	
25	1.32	0.03	2.58	0.16	0.32	10	75	
50	1.88	0.02	2.53	0.20	0.42	20	61	
						30	42	
						40	24	
						50	13	
						60	6.0	
						70	2.6	
						80	1.4	

CO₂ UPTAKE

INCUBATION		Depth	ACTIVITY			PRODUCTION	
Method	Period		Light	Dark	Net	mgC/m ³	gC/day/m ²

DATE: 4.x.58

TIME: 1715

STATION NO.: 138

LATITUDE: 35°06' S.

LONGITUDE: 152°56' E.

Bath	4 hrs	0	95.8	10.2	85.6	1.34
		25	168.0	4.1	163.9	2.56
		50	111.3	4.1	107.2	1.67

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 4.x.58

STATION NO.: 138

LATITUDE: 35°06' S. LONGITUDE: 152°56' E. DEPTH 1% S.L.: 86 m.

SOLAR ALT.: 22°

TIME: 1715

0	1.14	0.24	1.46	0.28	0.29
25	1.35	0.17	1.31	0.22	0.34
50	0.78	0.22	0.77	0.16	0.18

1600

0	100
10	67
20	43
30	28
40	17
50	12
60	6.8
70	3.2
80	1.6

CO₂ UPTAKE

INCUBATION		Depth	ACTIVITY			PRODUCTION	
Method	Period		Light	Dark	Net	mgC/m ³	gC/day/m ²

DATE: 5.x.58 TIME: 0445 STATION NO.: 139
 LATITUDE: 35°01' S. LONGITUDE: 155°02' E.

<u>In situ</u>	1 day	25	148.8	25.9	122.9	7.68
		50	100.9	9.5	91.4	5.71
		100	21.6	6.7	14.9	0.93

DATE: 5.x.58 TIME: 0445 STATION NO.: 139
 LATITUDE: 35°01' S. LONGITUDE: 155°02' E.

Bath	4 hrs	0	57.0	1.8	55.2	0.86
		25	103.9	3.9	100.0	1.56
		50	75.1	1.7	73.4	1.15
		100	30.2	21.1	9.1	0.14

DATE: 5.x.58 TIME: 1245 STATION NO.: 139
 LATITUDE: 35°01' S. LONGITUDE: 155°02' E.

Bath	4 hrs	0	86.6	1.7	84.9	1.33
		25	66.0	4.9	61.1	0.95
		50	68.5	6.1	62.4	0.97
		100	23.6	7.7	15.9	0.25

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 5.x.58

STATION NO.: 139

LATITUDE: 35°01' S. LONGITUDE: 155°02' E. DEPTH 1% S.L.: 189 m

SOLAR ALT.: 33°

TIME: 0520

0806

0	0.42	0.11	1.06	0.16	0.04	0	100
25	0.64	0.18	1.72	0.27	0.61	10	92
50	0.55	0.15	1.64	0.24	0	20	80
100	0.38	0.17	0.96	0.36	0	30	63
						40	47
						50	36
						60	28
						70	22
						80	14

CO₂ UPTAKE

INCUBATION		Depth	ACTIVITY			PRODUCTION	
Method	Period		Light	Dark	Net	mgC/m ³	gC/day/m ²

DATE: 5.x.58

TIME: 1730

STATION NO.: 139

LATITUDE: 35°01' S.

LONGITUDE: 155°02' E.

Bath	4 hrs	0	42.3	5.9	36.4	0.57
		25	37.1	7.8	29.3	0.46
		50	36.1	5.0	31.1	0.49
		100	26.7	8.5	18.2	0.28

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 5.x.58

STATION NO.: 139

LATITUDE: 35°01' S. LONGITUDE: 155°02' E.

TIME: 1330

0	0.33	0.12	0.78	0.15	0.04
25	0.47	0.22	1.06	0.24	
50	0.64	0.22	1.06	0.19	0.12
100	0.35	0.12	0.70	0.14	0.09

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 5.x.58

STATION NO.: 139

LATITUDE: 35°01' S. LONGITUDE: 155°02' E.

TIME: 1730

0	0.38	0.19	0.54	0.14	0.06
25	0.51	0.22	0.64	0.11	0.15
50	0.42	0.26	0.84	0.16	0.57
100	0.43	0.13	0.93	0.21	

F.R.V. "Derwent Hunter" Cruise 16 1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ o/o sat.	σ _t	Total P μg.at/l
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DATE: 6.x.58. TIME: 0150 hrs STATION No.: 140

LATITUDE: 35°13' S. LONGITUDE: 155°45' E.

SEA: 2 WIND: FORCE 2 WIRE ANGLE: 30°, 12°
DIRECTION N.

0	18.97	35.57	5.11	100	25.49	0.41
23	18.90	35.66	5.11	100	25.57	0.42
46	18.75	35.62	5.00	98	25.58	0.62
69	18.72	35.62	4.95	96	25.59	0.52
93	18.35	35.62	5.02	97	25.68	0.51
140	17.75	35.53	4.37	84	25.76	
187	16.20	35.41	4.31	80	26.04	0.73
285	13.95	35.25	4.42	79	26.41	0.82
423	11.04	34.90	4.21	70	26.71	1.03
637	8.66	34.65	4.42	70	26.92	1.38
856	6.60	34.51	4.42	66	27.10	1.52
1305	3.98	34.63	4.12	58	27.51	1.69

DATE: 6.x.58. TIME: 1425 hrs STATION No.: 142

LATITUDE: 35°51' S. LONGITUDE: 157°04' E.

SEA: 0 WIND: FORCE 1 WIRE ANGLE: 20°, 12°
DIRECTION NW.

0	16.23	35.41	5.69	106	26.03	0.45
25	15.90	35.46	5.73	106	26.15	0.75
50	15.51	35.44	5.40	99	26.21	0.52
75	14.92	35.44	5.36	97	26.35	0.53
100	14.65	35.43	5.54	100	26.40	0.53
150	13.53	35.25	4.55	80	26.49	0.76
200	12.75	35.16	4.64	81	26.59	0.84
300	11.19	34.94	4.52	75	26.72	1.03
472	8.96	34.70	4.55	72	26.91	1.18
710	6.94	34.52	4.47	68	27.06	1.64
951	5.25	34.47	4.18	61	27.24	1.71
1445	3.15	34.58	3.62	50	27.55	1.97

F.R.V. "Derwent Hunter"

Cruise 16

1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ % sat.	σ_t	Total P μg.at/l
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DATE: 7.x.58. TIME: 0350 hrs STATION No.: 145

LATITUDE: 36°40' S. LONGITUDE: 158°54' E.

SEA: 0 WIND: FORCE 2 WIRE ANGLE: 20°, 12°
DIRECTION N.

0	17.48	35.55	5.40	103	25.84	0.43
25	17.55	35.55	5.50	105	25.82	0.43
49	17.30	35.55	5.27	101	25.87	0.40
73	16.20	35.46	4.88	91	26.08	0.65
97	15.70	35.46	5.15	95	26.19	0.53
145	15.10	35.44	5.40	98	26.30	0.44
191	14.24	35.35	5.05	91	26.43	0.54
290	12.70	35.17	4.90	85	26.61	0.76
475	9.60	34.74	4.66	75	26.82	1.18
709	7.57	34.56	4.49	69	27.01	1.51
956	5.42	34.47	4.21	61	27.22	1.72
1436	3.28	34.56	3.59	50	27.52	1.95

DATE: 7.x.58. TIME: 1927 hrs STATION No.: 147

LATITUDE: 35°25' S. LONGITUDE: 159°04' E.

SEA: - WIND: FORCE 0-1 WIRE ANGLE: 5°, 0°
DIRECTION WNW.

0	17.65	35.53	5.27	101	25.78	0.41
25	17.15	35.53	5.17	98	25.90	0.42
50	16.70	35.52	5.27	99	26.00	0.43
75	16.47	35.50	5.36	100	26.04	0.37
100	16.10	35.50	5.15	96	26.13	0.51
150	15.35	35.41	4.85	89	26.22	0.62
200	14.35	35.32	4.64	83	26.38	0.74
300	12.80	35.17	4.82	84	26.62	0.80
500	9.58	34.76	4.46	72	26.86	0.75
750	7.11	34.54	4.39	67	27.06	1.56
1000	5.32	34.49	4.25	62	27.24	1.67
1500	3.13	34.60	3.56	49	27.56	2.06

F.R.V. "Derwent Hunter" Cruise 16 1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ o/o sat.	σ _t	Total P μg.at/l
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DATE: 8.x.58. TIME: 0902 hrs STATION No.: 150

LATITUDE: 34°56' S. LONGITUDE: 157°47' E.

SEA: - WIND: FORCE 0-1 WIRE ANGLE: 35°, 10°
DIRECTION N.

0	18.58	35.61	5.27	103	25.61	0.59
22	18.20	35.59	5.34	104	25.69	0.40
45	17.80	35.57	5.34	103	25.77	0.45
67	17.35	35.55	5.27	100	25.87	0.43
90	16.20	35.48	5.36	100	26.09	0.53
137	15.45	35.44	5.60	103	26.22	0.53
184	14.78	35.43	5.27	95	26.37	0.71
280	13.50	35.28	4.90	86	26.53	0.79
382	12.08	35.08	4.79	82	26.66	0.86
572	9.37	34.74	4.39	70	26.88	1.16
764	7.38	34.54	4.42	68	27.02	1.49
1159	4.51	34.49	3.96	56	27.34	1.91

DATE: 8-9.x.58. TIME: 0146 hrs STATION No.: 153

LATITUDE: 34°21' S. LONGITUDE: 156°16' E.

SEA: 2 WIND: FORCE 2-3 WIRE ANGLE: 25°, 22°, 20°*
DIRECTION S

0	18.50	35.62	5.33	104	25.64	0.53
25	18.50	35.62	5.20	101	25.64	0.52
50	18.45	35.62	5.30	103	25.65	0.44
75	18.39	35.62	5.20	101	25.66	0.42
100	18.35	35.61	5.18	101	25.67	0.55
150	18.37	35.61	5.15	100	25.66	0.47
200	18.35	35.66	5.12	99	25.71	0.56
300	17.60	35.55	4.63	86	25.81	0.55
479	13.25	35.37	4.63	81	26.65	0.92
730	9.05	34.70	4.49	71	26.90	1.39
975	6.80	34.51	4.39	66	27.07	1.46
1473*	3.85	34.54	3.79	53	27.45	1.94

F.R.V. "Derwent Hunter"

Cruise 16

1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ ‰ sat.	σ _t	Total P μg.at/l
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DATE: 9.x.58. TIME: 1030 hrs STATION No.: 154
 LATITUDE: 33°21' S. LONGITUDE: 155°12' E.

SEA: 2 WIND: FORCE 2-3 WIRE ANGLE: 27°, 18°
 DIRECTION S.

0	18.93	35.61	5.25	103	25.52	0.42
25	18.59	35.62	5.36	104	25.62	0.42
50	18.45	35.62	5.11	99	25.64	0.53
75	18.43	35.62	5.19	101	25.65	0.46
100	18.35	35.62	5.15	100	25.67	0.50
150	18.35	35.61	5.11	99	25.66	0.63
200	17.70	35.55	4.63	89	25.78	0.65
300	15.60	35.41	4.46	82	26.18	0.74
474	12.15	35.05	4.57	78	26.62	1.05
714	8.55	34.65	4.48	70	26.94	1.55
956	5.92	34.47	4.39	65	27.15	1.63
1441	3.52	34.56	3.67	51	27.49	2.11

DATE: 9.x.58 TIME: 2115 hrs STATION No.: 155
 LATITUDE: 33°55' S. LONGITUDE: 153°52' E.

SEA: - WIND: FORCE 1-2 WIRE ANGLE: 32°, 13°
 DIRECTION NE.

0	21.58	35.68	4.90	101	24.87	0.41
23	21.39	35.66	4.93	101	24.92	0.42
47	21.44	35.66	4.84	99	24.90	0.42
70	21.42	35.66	4.87	100	24.91	0.52
94	20.96	35.66	5.01	102	25.04	0.41
141	19.35	35.64	5.04	100	25.44	0.48
197	19.30	35.64	4.99	99	25.46	0.48
283	17.71	35.49	4.41	84	25.77	0.65
368	14.90	35.28	4.09	74	26.23	0.84
573	10.80	34.88	4.39	73	26.74	1.24
824	7.74	34.58	4.49	69	27.00	1.93
1232	4.47	34.49	3.95	56	27.35	2.76

F.R.V. "Derwent Hunter" Cruise 16 1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ o/o sat.	σ _t	Total P μg.at/l
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DATE: 10.x.58 TIME: 0510 hrs STATION NO.: 156
 LATITUDE: 34°14' S. LONGITUDE: 152°56' E.
 SEA: 3 WIND: FORCE 4 DIRECTION NE. WIRE ANGLE: 50°, 5°, 8°*

0*	23.08	35.66	4.84	102	24.44	0.32
25	23.01	35.66	4.79	101	24.46	0.29
50	22.40	35.66	4.34	90	24.63	0.41
75	21.21	35.61	3.99	81	24.92	0.53
100	20.35	35.61	3.90	78	25.15	0.63
146	18.40	35.52	3.87	75	25.59	0.63
210	16.08	35.39	3.93	73	26.05	
276	13.58	35.16	4.15	73	26.41	0.88
300	12.49	35.05	4.02	69	26.55	0.99
323	11.87	34.70	4.42	75	26.41	1.25
654	7.52	34.58	4.47	69	27.03	1.43

F.R.V. "Derwent Hunter" Cruise 17 1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ ‰ sat.	σ _t	Total P μg.at/l
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DATE: 16.x.58. TIME: 1100 hrs STATION No.: 160
 LATITUDE: 33°32' S. LONGITUDE: 153°33' E.

SEA: 2 WIND: FORCE 4 WIRE ANGLE: 30°, 30°
 DIRECTION N.

0	21.06	35.64	4.96	101	24.99	0.53
17	20.80	35.64	4.81	97	25.07	0.32
34	20.38	35.62	4.72	95	25.16	0.39
53	20.22	35.62	4.75	95	25.20	0.44
72	19.72	35.62	5.07	101	25.34	0.42
112	18.60	35.53	3.96	77	25.55	0.59
156	17.89	35.53	4.14	80	25.73	0.59
246	16.83	35.48	4.44	84	25.94	0.61
368	14.13	35.28	4.54	81	26.38	0.73
550	10.49	34.85	4.41	73	26.77	1.20
733	7.86	34.60	4.41	68	26.99	1.41
1217	4.73	34.51	4.04	58	27.34	1.79

DATE: 16.x.58. TIME: 2250 hrs STATION No.: 161
 LATITUDE: 33°05' S. LONGITUDE: 154°32' E.

SEA: 2 WIND: FORCE 3 WIRE ANGLE: 0°, 0°
 DIRECTION N.

0	21.18	35.66	4.81	98	24.98	0.40
25	21.19	35.66	4.78	97	24.97	0.37
50	21.12	35.66	4.90	100	24.99	0.39
75	20.86	35.66	4.72	96	25.06	0.32
100	19.60	35.62	4.78	97	25.37	0.47
150	19.86	35.66	4.86	97	25.34	0.42
200	18.95	35.61	4.49	89	25.52	0.50
300	17.51	35.52	4.38	84	25.80	0.57
500	12.35	35.10	4.38	75	26.62	0.87
750	8.07	34.60	4.38	68	26.96	1.28
1000	5.74	34.45	4.17	61	27.17	1.56
1500	3.26	34.60	3.75	52	27.55	1.94

F.R.V. "Derwent Hunter" Cruise 17 1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ ‰ sat.	σ _t	Total P μg.at/l
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DATE: 16.x.58. TIME: 1227 hrs STATION No.: 163

LATITUDE: 32°39' S. LONGITUDE: 155°30' E.

SEA: 1 WIND: FORCE 2 WIRE ANGLE: 10°, 5°
DIRECTION SE.

0	19.78	35.52	5.18	103	25.24	0.46
25	18.70	35.55	5.36	105	25.54	0.42
50	17.96	35.53	5.30	102	25.71	0.46
75	17.18	35.53	5.06	96	25.91	0.55
100	16.45	35.46	4.72	88	26.02	0.62
150	15.45	35.37	4.66	85	26.17	0.75
200	13.90	35.26	4.44	79	26.42	0.69
300	11.95	35.05	4.66	79	26.65	0.94
444	9.51	34.76	4.63	74	26.87	1.17
680	7.15	34.54	4.38	66	27.05	1.67
926	5.39	34.47	4.34	63	27.23	1.81
1425	3.15	34.58	3.64	50	27.54	2.11

DATE: 21.x.58. TIME: 1354 hrs STATION No.: 165

LATITUDE: 31°25' S. LONGITUDE: 159°09' E.

SEA: 2 WIND: FORCE 3 WIRE ANGLE: 32°, 15°
DIRECTION W.

0	20.80	35.71	4.58	93	25.12	0.39
21	20.65	35.70	4.93	100	25.14	0.39
42	20.41	35.70	4.69	95	25.20	0.34
64	19.72	35.62	4.34	86	25.34	0.44
87	19.80	35.66	4.75	95	25.35	0.45
134	19.15	35.59	4.27	84	25.46	0.53
182	18.14	35.59	4.27	83	25.71	0.54
278	15.97	35.44	4.34	80	26.12	0.67
472	11.64	35.01	4.34	73	26.68	0.96
718	8.53	34.67	4.38	69	26.94	1.27
966	6.24	34.51	4.27	64	27.15	1.55
1464	4.04	34.56	3.66	51	27.45	2.00

CO₂ UPTAKE

INCUBATION		Depth	ACTIVITY			PRODUCTION	
Method	Period		Light	Dark	Net	mgC/m ³	gC/day/m ²

DATE: 21.x.58 TIME: 0415 STATION NO.: 165
 LATITUDE: 31°25' S. LONGITUDE: 159°09' E.

<u>In situ</u>	1 day	0	207	32	175	10.94	0.63
		25	176	24	152	9.45	
		50	125	11	114	7.09	
		100	31	31	0	0	

DATE: 21.x.58 TIME: 0420 STATION NO.: 165
 LATITUDE: 31°25' S. LONGITUDE: 159°09' E.

Bath	4 hrs	0	225	5	219	3.43	1.68
		25	245	28	217	3.40	
		50	74	12	62	0.97	
		100	20	10	10	0.15	

DATE: 21.x.58 TIME: 1630 STATION NO.: 165
 LATITUDE: 31°25' S. LONGITUDE: 159°09' E.

Bath	4 hrs	0	50	6	44	0.69	0.73
		25	73	10	63	0.98	
		50	90	22	68	1.05	
		100	13	13	0	0	

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 21.x.58

STATION NO.: 165

LATITUDE: 31°25' S. LONGITUDE: 159°09' E.

TIME: 0500

0	0.65	0.12	0.71	0.17	0.11
25	0.83	0.13	0.65	0.17	0.13
50	0.73	0.14	0.76	0.10	0.22
100	0.11	0.04	0.73	0.27	

DATE: 21.x.58

LATITUDE: 31°25' S. LONGITUDE: 159°09' E.

TIME: 1630

0	0.30	0.08	0.81	0.23	
25	0.41	0.12	0.62	0.16	0.03
50	0.64	0.13	0.49	0.14	0.12
100	0.40	0.13	0.48	0.17	0.02

F.R.V. "Derwent Hunter" Cruise 17 1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ % sat.	σ _t	Total P μg.at/l
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DATE: 22.x.58. TIME: 0845 hrs STATION No.: 166

LATITUDE: 31°06' S. LONGITUDE: 157°25' E.

SEA: 0 WIND: FORCE 1 WIRE ANGLE: 0°, 0°
DIRECTION W.

0	21.74	35.71	4.93	101	24.85	0.34
25	19.49	35.61	3.79	75	25.38	0.51
50	19.37	35.59	5.08	101	25.40	0.43
75	19.20	35.61	4.99	98	25.46	0.51
100	18.55	35.57	4.63	90	25.59	0.43
150	17.65	35.57	4.58	88	25.82	0.52
200	15.99	35.46	4.69	87	26.13	0.60
300	14.24	35.34	4.58	82	26.40	0.72
500	10.59	34.90	4.60	76	26.79	1.08
750	7.68	34.60	4.36	67	27.02	0.75
1000	5.46	34.51	4.17	61	27.25	1.86
1500	3.23	34.61	3.44	48	27.57	2.13

DATE: 23.x.58. TIME: 1400 hrs STATION No.: 168

LATITUDE: 30°28' S. LONGITUDE: 155°42' E.

SEA: 0 WIND: FORCE 1 WIRE ANGLE: 12°, 5°
DIRECTION SE.

0	21.88	35.68	4.63	95	24.79	0.39
25	20.78	35.71	4.87	99	25.12	0.37
50	20.39	35.64	5.01	101	25.17	0.38
75	20.04	35.64	4.63	93	25.28	0.45
100	19.85	35.66	4.84	97	25.34	0.35
150	19.60	35.64	4.60	91	25.38	0.47
200	19.35	35.62	4.75	94	25.43	0.42
300	18.40	35.57	4.34	84	25.63	0.52
483	14.89	35.34	4.37	79	26.27	0.75
722	9.54	34.76	4.37	70	26.86	1.18
970	6.83	34.51	4.31	65	27.07	1.51
1466	3.73	34.54	3.64	51	27.46	1.90

CO₂ UPTAKE

INCUBATION		Depth	ACTIVITY			PRODUCTION	
Method	Period		Light	Dark	Net	mgC/m ³	gC/day/m ²

DATE: 22.x.58

TIME: 0815

STATION NO.: 166

LATITUDE: 31°06' S.

LONGITUDE: 157°25' E.

Bath	5 hrs	0	142	10	131	1.64	1.40
		25	261	17	243	3.05	
		50	108	15	92	1.15	
		100	30	30	0	0	

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 22.x.58

STATION NO.: 166

LATITUDE: 31°06' S. LONGITUDE: 157°25' E.

TIME: 0815

0	0.40	0.08	0.44	0.12	0.03
25	0.51	0.08	0.50	0.20	0
50	0.43	0.08	0.26	0.20	0.06
100	0.10	0.09	0.19	0.13	

CO₂ UPTAKE

INCUBATION		Depth	ACTIVITY			PRODUCTION	
Method	Period		Light	Dark	Net	mgC/m ³	gC/day/m ²

DATE: 23.x.58 TIME: 0430 STATION NO.: 168
 LATITUDE: 30°28' S. LONGITUDE: 155°42' E.

<u>In situ</u>	1 day	0	77	9	68	4.25	0.56
		25	99	17	82	5.12	
		50	174	11	163	10.14	
		100	14	14	0	0	

DATE: 23.x.58 TIME: 0430 STATION NO.: 168
 LATITUDE: 30°28' S. LONGITUDE: 155°42' E.

Bath	4 hrs	0	56	16	40	0.62	0.71
		25	52	14	38	0.59	
		50	88	7	81	1.26	
		100	11	7	4	0.06	

DATE: 23.x.58 TIME: 1110 STATION NO.: 168
 LATITUDE: 30°28' S. LONGITUDE: 155°42' E.

Bath	4 hrs	0	52	5	47	0.73	1.30
		25	81	7	74	1.16	
		50	112	9	103	1.60	
		100	90	7	83	1.29	

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 23.x.58

STATION NO.: 168

LATITUDE: 30°28' S. LONGITUDE: 155°42' E.

TIME: 0500

0	0.16	0.08	0.08	0.12	
25	0.21	0.03	0.66	0.12	
50	0.45	0.07	0.74	0.19	0.01
100	0.20	0.08	0.56	0.24	

DATE: 23.x.58

STATION NO.: 168

LATITUDE: 30°28' S. LONGITUDE: 155°42' E.

TIME: 1115

0	0.22	0.09	0.82	0.17
25	0.20	0.07	0.37	0.13
50	0.43	0.18	0.45	0.21
100	0.03	0.09	0.48	0.18

CO₂ UPTAKE

INCUBATION		Depth	ACTIVITY			PRODUCTION	
Method	Period		Light	Dark	Net	mgC/m ³	gC/day/m ²

DATE: 23.x.58

TIME: 1615

STATION NO.: 168

LATITUDE: 30°28' S.

LONGITUDE: 155°42' E.

Bath	4 hrs	0	42	7	35	0.54	0.62
		25	36	0	36	0.57	
		50	66	6	60	0.94	
		100	22	8	14	0.23	

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 23.x.58

STATION NO.: 168

LATITUDE: 30°28' S. LONGITUDE: 155°42' E.

TIME:	1620					
0	0.19	0.02	0.27	0.10		
25	0.21	0.05	0.62	0.12		
50	0.44	0.06	0.89	0.15	0.02	
100	0.44	0.16	0.62	0.13	0.08	

F.R.V. "Derwent Hunter" Cruise 17 1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ o/o sat.	σ _t	Total P μg.at/l
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DATE: 24.x.58. TIME: 0810 hrs STATION No.: 169

LATITUDE: 30°23' S. LONGITUDE: 154°27' E.

SEA: 0 WIND: FORCE 3 WIRE ANGLE: 40°, 28°
DIRECTION NNW.

0	22.77	35.70	4.84	101	24.54	0.41
21	22.70	35.70	4.93	103	24.56	0.37
40	22.66	35.70	4.81	101	24.57	0.37
61	22.61	35.70	4.69	98	24.58	0.39
80	22.60	35.70	4.69	98	24.60	0.40
129	21.70	35.68	4.72	95	24.84	0.42
177	21.30	35.66	4.54	93	24.94	0.39
276	19.05	35.57	4.20	83	25.47	0.51
370	16.88	35.46	4.24	80	25.92	0.59
571	11.74	34.97	4.27	72	26.63	0.87
792	8.68	34.67	4.38	69	26.93	1.20
1271	5.09	34.51	4.11	59	27.30	1.60

DATE: 24.x.58. TIME: 1920 hrs STATION No.: 170

LATITUDE: 30°27' S. LONGITUDE: 153°34' E.

SEA: 2 WIND: FORCE 6 WIRE ANGLE: 57°, 43°
DIRECTION SW.

0	23.70	35.71	4.61	98	24.28	0.33
15	23.62	35.71	4.66	99	24.31	0.34
30	23.56	35.71	4.78	101	24.33	0.30
45	23.04	35.71	4.69	99	24.48	0.41
64	22.05	35.70	4.87	101	24.75	0.34
98	20.55	35.66	4.72	95	25.14	0.39
136	20.10	35.66	4.69	94	25.27	0.39
209	18.05	35.52	4.17	81	25.67	0.54
416	11.61	34.96	4.14	70	26.64	0.91
658	7.71	34.56	4.41	68	26.98	1.51
902	6.01	34.49	4.20	62	27.17	1.51
1396	3.62	34.54	3.73	52	27.47	1.85

F.R.V. "Derwent Hunter"

Cruise 17 1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ o/o sat.	σ_t	Total P $\mu\text{g.at/l}$
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DATE: 26.x.58 TIME: 2113 hrs STATION No.: 171

LATITUDE: 31°11' S. LONGITUDE: 153°48' E.

SEA: 4 WIND: FORCE 3 WIRE ANGLE: 42°, 30°
DIRECTION NW.

0	22.00	35.70	4.81	100	24.77	0.36
21	21.98	35.70	4.75	98	24.78	0.41
40	22.06	35.70	4.78	99	24.75	0.34
60	22.06	35.70	4.81	100	24.75	0.39
80	22.00	35.70	4.78	99	24.77	0.39
119	20.65	35.66	4.14	84	25.12	0.51
159	19.70	35.68	4.72	94	25.38	0.41
242	18.45	35.59	4.34	84	25.63	0.53
360	15.75	35.39	3.89	72	26.13	0.71
554	10.47	34.87	4.34	71	26.78	1.08
759	7.66	34.60	4.38	67	27.02	1.33
1211	4.86	34.51	4.01	58	27.32	1.68

DATE: 27.x.58. TIME: 0912 hrs STATION No.: 173

LATITUDE: 32°06' S. LONGITUDE: 154°29' E.

SEA: 3 WIND: FORCE 4 WIRE ANGLE: 50°, 28°
DIRECTION NW.

0	20.19	35.64	4.93	99	25.23	0.40
21	20.08	35.64	3.06	61	25.27	0.39
40	19.86	35.61	4.30	86	25.29	0.49
60	18.90	35.61	4.90	96	25.53	0.40
83	18.85	35.64	4.78	94	25.58	0.41
124	18.55	35.62	4.84	94	25.63	0.49
168	18.13	35.61	4.78	92	25.72	0.46
260	16.35	35.48	4.14	77	26.06	0.61
303	15.45	35.43	4.78	88	26.21	0.56
463	12.25	35.05	4.30	74	26.59	0.91
635	10.35	34.94	4.69	78	26.87	0.91
1023	5.89	34.52	4.27	63	27.21	1.63

F.R.V. "Derwent Hunter" Cruise 17 1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ % sat.	σ _t	Total P μg.at/l
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DATE: 27.x.58. TIME: 2253 hrs STATION No.: 175

LATITUDE: 32°59' S. LONGITUDE: 154°51' E.

SEA: 4 WIND: FORCE - WIRE ANGLE: 50°, 22°
DIRECTION -

0	19.16	35.64	4.75	94	25.49	0.37
22	19.08	35.64	5.23	103	25.52	0.33
44	18.72	35.61	4.96	97	25.58	0.49
65	18.42	35.61	4.99	97	25.65	0.46
89	18.06	35.61	4.90	95	25.74	0.43
134	16.60	35.46	4.33	82	25.98	0.64
174	15.85	35.43	4.54	85	26.13	0.61
265	13.25	35.23	4.69	83	26.53	0.36
287	13.15	35.21	4.66	83	26.54	0.76
431	10.92	34.94	4.33	73	26.76	0.99
595	9.03	34.70	4.44	72	26.90	1.20
945	6.55	34.51	4.27	65	27.11	1.65

DATE: 28.x.58. TIME: 1138 hrs STATION No.: 177

LATITUDE: 33°58' S. LONGITUDE: 155°43' E.

SEA: - WIND: FORCE - WIRE ANGLE: 0°, 0°
DIRECTION -

0	18.78	35.61	5.15	101	25.57	0.38
25	18.32	35.61	5.33	103	25.67	0.36
50	18.38	25.61	5.30	103	25.66	0.39
75	18.39	25.61	5.18	101	25.66	0.47
100	18.30	25.61	4.95	96	25.68	0.49
150	18.30	25.61	4.93	96	25.68	0.45
200	18.25	35.61	5.07	98	25.69	0.49
300	17.10	35.53	4.54	86	25.92	0.55
500	13.30	35.21	4.34	76	26.51	0.91
750	9.60	34.85	4.52	73	26.92	0.60
1000	6.27	34.51	4.36	65	27.15	1.53
1500	3.68	34.58	3.66	51	27.51	1.90

F.R.V. "Derwent Hunter"

Cruise 17

1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ o/o sat.	σ _t	Total P μg.at/l
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DATE: 29.x.58. TIME: 0023 hrs STATION No.: 179

LATITUDE: 34°55' S. LONGITUDE: 156°27' E.

SEA: 0 WIND: FORCE 0 WIRE ANGLE: 0°, 0°
DIRECTION -

0	18.94	35.66	5.11	100	25.57	0.42
25	18.79	35.64	5.20	102	25.59	0.32
50	18.84	35.66	4.84	95	25.59	0.36
75	18.45	35.62	5.02	98	25.66	0.36
100	18.26	35.62	4.72	91	25.71	0.43
150	17.83	35.57	4.47	86	25.77	0.54
200	17.30	35.53	4.36	83	25.87	0.55
300	15.27	35.39	4.49	82	26.23	0.74
500	11.55	34.97	4.38	74	26.67	1.08
750	8.21	34.61	4.54	71	26.95	1.41
1000	6.10	34.51	4.30	64	27.17	1.62
1500	3.55	34.58	3.60	50	27.51	2.17

DATE: 29.x.58. TIME: 1158 hrs STATION No.: 181

LATITUDE: 35°53' S. LONGITUDE: 157°12' E.

SEA: 1 WIND: FORCE - WIRE ANGLE: 12°, 0°
DIRECTION -

0	18.40	35.54	4.96	96	25.64	0.49
25	17.77	35.59	5.43	104	25.81	0.41
50	17.81	35.59	5.21	100	25.79	0.41
75	16.69	35.44	4.44	83	25.95	0.63
100	15.30	35.39	4.66	85	26.22	0.65
150	14.55	35.39	5.27	95	26.39	0.59
200	13.65	35.32	5.07	90	26.52	0.63
300	12.30	35.16	4.90	84	26.66	0.83
474	9.15	34.70	4.66	74	26.88	1.17
718	7.26	34.61	5.34	81	27.05	0.53
962	5.31	34.49	4.27	62	27.25	1.78
1460	3.51	34.54	3.67	51	27.48	1.98

F.R.V. "Derwent Hunter" Cruise 17 1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ o/o sat.	σ _t	Total P μg.at/l
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DATE: 29.x.58. TIME: 2207 hrs STATION No.: 183
 LATITUDE: 35°33' S. LONGITUDE: 156°07' E.

SEA: - WIND: FORCE - WIRE ANGLE: 48°, 27°
 DIRECTION -

0	18.75	35.64	5.02	98	25.60	0.32
20	18.65	35.64	5.18	101	25.63	0.40
38	18.52	35.64	5.12	100	25.66	0.41
57	18.41	35.62	5.02	98	25.67	0.44
79	18.20	35.62	4.77	92	25.72	0.53
128	17.80	35.59	4.65	89	25.79	0.55
172	16.70	35.50	4.54	85	25.99	0.56
266	14.55	35.32	4.32	78	26.33	0.83
334	12.90	35.14	4.43	77	26.53	0.85
551	9.25	34.76	4.32	69	26.91	1.22
778	6.99	34.52	4.36	66	27.06	1.48
1254	4.30	34.51	3.81	54	27.38	1.80

DATE: 30.x.58 TIME: 0022 hrs STATION No.: 184
 LATITUDE: 34°28' S. LONGITUDE: 153°26' E.

SEA: - WIND: FORCE - WIRE ANGLE: 45°, 0°
 DIRECTION -

0	20.72	35.68	4.99	101	25.11	0.39
25	20.61	35.68	4.99	101	25.14	0.41
50	20.56	35.68	4.95	100	25.15	0.41
75	20.56	35.68	5.07	102	25.15	0.36
100	20.50	35.68	4.66	94	25.17	0.42
150	19.90	35.64	4.69	94	25.32	0.44
200	19.35	35.64	4.81	95	25.44	0.44
300	18.04	35.57	4.54	88	25.72	0.47
357	16.40	35.41	4.27	80	25.99	0.75
557	13.10	35.19	4.52	79	25.63	0.78
768	9.48	34.76	4.37	70	26.88	1.26
1201	5.53	34.49	4.11	60	27.23	1.56

F.R.V. "Derwent Hunter" Cruise 18 1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ % sat.	σ _t	Total P μg.at/l
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DATE: 5.xi.58 TIME: 0010 STATION NO.: 185
 LATITUDE: 33°56' S. LONGITUDE: 152°14' E.

0 23.04 35.70 0.45

DATE: 5.xi.58 TIME: 0210 STATION NO.: 185
 LATITUDE: 34°03' S. LONGITUDE: 152°13' E.

0 23.04 35.71 0.47

DATE: 5.xi.58 TIME: 0400 STATION NO.: 185
 LATITUDE: 34°09' S. LONGITUDE: 152°13' E.

0 22.88 35.71 0.51

CO₂ UPTAKE

INCUBATION		Depth	ACTIVITY			PRODUCTION	
Method	Period		Light	Dark	Net	mgC/m ³	gC/day/m ²

DATE: 5.xi.58 TIME: 0010 STATION NO.: 185
 LATITUDE: 33°56' S. LONGITUDE: 152°14' E.

Bath	4 hrs	0	24	56		
		0	15	34		
		25	22	46		
		25	51	46		
		50	86	46		
		50	59	46	27	0.43

DATE: 5.xi.58 TIME: 0210 STATION NO.: 185
 LATITUDE: 34°03' S. LONGITUDE: 152°13' E.

Bath	4 hrs	0	65	70		
		0	52	72		
		25	60	72		
		25	83	72	0	
		50	74	72		
		50	76	72	4	

DATE: 5.xi.58 TIME: 0400 STATION NO.: 185
 LATITUDE: 34°09' S. LONGITUDE: 152°13' E.

Bath	4 hrs	0	34	10	24	0.38	0.63
		0	54	10			
		25	56	10	45	0.71	
		50	78	10			
		50	80	10	69	1.08	

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 5.xi.58

STATION NO.: 185

LATITUDE: 33°56' S. LONGITUDE: 152°14' E.

TIME: 0030

0	0.16	0.05	0.37	0.09	0.05
0	0.25	0.09	0.66	0.14	0
25	0.27	0.15	0.32	0.17	0.03
25	0.26		0.90	0.35	

DATE: 5.xi.58

STATION NO.: 185

LATITUDE: 34°03' S. LONGITUDE: 152°13' E.

TIME: 0220

0	0.31	0	1.04	0.23	
0	0.52	0.07	0.75	0.55	
25	0.47	0.02	1.45	0.50	
25	0.41	0.06	0.93	0.31	

DATE: 5.xi.58

STATION NO.: 185

LATITUDE: 34°09' S. LONGITUDE: 152°13' E.

TIME: 0415

0	0.22	0.06	0.16	0.14	0
0	0.25	0.07	0.29	0.12	0
25	0.31	0.08	0.36	0.16	0
25	0.25	0.08	0.06	0.15	0

F.R.V. "Derwent Hunter" Cruise 18 1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ ‰ sat.	σ _t	Total P μg.at/l
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DATE: 5.xi.58 TIME: 0600 STATION NO.: 185
 LATITUDE: 34°15' S. LONGITUDE: 152°12' E.

0 22.83 35.71 0.40

DATE: 5.xi.58 TIME: 0815 STATION NO.: 185
 LATITUDE: 34°22' S. LONGITUDE: 152°12' E.

0 22.93 35.71 0.45

DATE: 5.xi.58 TIME: 1015 STATION NO.: 185
 LATITUDE: 34°28' S. LONGITUDE: 152°11' E.

0 22.82 35.73 0.41

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 5.xi.58

STATION NO.: 185

LATITUDE: 34°15' S. LONGITUDE: 152°12' E.

TIME: 0615

0	0.16	0.03	0	0.18
0	0.28	0.02	0.30	0.27
25	0.27	0.02	0.29	0.18

DATE: 5.xi.58

STATION NO.: 185

LATITUDE: 34°22' S. LONGITUDE: 152°12' E.

TIME: 0830

0	0.14	0.02	0.23	0.12
0	0.13	0.06	0.40	0.08
25	0.27	0.08	0.45	0.16

DATE: 5.xi.58

STATION NO.: 185

LATITUDE: 34°28' S. LONGITUDE: 152°11' E.

TIME: 1100

0	0.20	0.03	0.13	0.22
0	0.21	0.07	0.18	0.19
25	0.18	0.02	0.23	0.09

F.R.V. "Derwent Hunter" Cruise 18 1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ % sat.	σ _t	Total P μg.at/l
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DATE: 5.xi.58 TIME: 1210 STATION NO.: 185
 LATITUDE: 34°34' S. LONGITUDE: 152°11' E.

0 22.94 35.71 0.52

DATE: 5.xi.58 TIME: 1415 STATION NO.: 185
 LATITUDE: 34°22' S. LONGITUDE: 152°11' E.

0 22.98 35.71 0.36

DATE: 5.xi.58 TIME: 1610 STATION NO.: 185
 LATITUDE: 34°25' S. LONGITUDE: 152°11' E.

0 22.92 35.71 0.40

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 5.xi.58

STATION NO.: 185

LATITUDE: 34°34' S. LONGITUDE: 152°11' E.

TIME: 1230

0	0.10	0.12	0.17	0.19
0	0.13	0.09	0.25	0.13
25	0.16	0.12	0.22	0.24

DATE: 5.xi.58

STATION NO.: 185

LATITUDE: 34°22' S. LONGITUDE: 152°11' E.

TIME: 1430

0	0.14	0.02	0.08	0.12
0	0.18	0.02	0.25	0.12
25	0.20	0.05	0.25	0.21

DATE: 5.xi.58

STATION NO.: 185

LATITUDE: 34°25' S. LONGITUDE: 152°11' E.

TIME: 1620

0	0.15	0.01	0.14	0.18
0	0.14	0.00	0.38	0.10
25	0.14	0.05	0.53	0.39

F.R.V. "Derwent Hunter" Cruise 18 1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ ‰ sat.	σ _t	Total P μg.at/l
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DATE: 5.xi.58 TIME: 1800 STATION NO.: 185
 LATITUDE: 34°28' S. LONGITUDE: 152°10' E.

0 22.79 35.71 0.38

DATE: 5.xi.58 TIME: 2015 STATION NO.: 185
 LATITUDE: 34°31' S. LONGITUDE: 152°09' E.

0 22.77 35.73 0.49

DATE: 5.xi.58 TIME: 2225 STATION NO.: 185
 LATITUDE: 34°34' S. LONGITUDE: 152°08' E.

0 22.70 35.71 0.52

CO₂ UPTAKE

INCUBATION		Depth	ACTIVITY			PRODUCTION	
Method	Period		Light	Dark	Net	mgC/m ³	gC/day/m ²

DATE: 5.xi.58 TIME: 1800 STATION NO.: 185
 LATITUDE: 34°28' S. LONGITUDE: 152°10' E.

Bath	4 hrs	0	39	19			0.82
		0	10	12	10	0.16	
		25	141	10			
		25	36	10	78	1.23	
		50	85	10			
		50	100	10	83	1.30	

DATE: 5.xi.58 TIME: 2015 STATION NO.: 185
 LATITUDE: 34°31' S. LONGITUDE: 152°09' E.

Bath	4 hrs	0	14	20			0.06
		0	21	11	5	0.08	
		25	23	10			
		25	16	10	9	0.15	
		50	22	10			
		50	32	10	17	0.03	

DATE: 5.xi.58 TIME: 2225 STATION NO.: 185
 LATITUDE: 34°34' S. LONGITUDE: 152°08' E.

Bath	2 hrs	0	11	18			0.05
		0	10	17	0	0	
		25	12	10			
		25	23	10	8	0.12	
		50	11	10			
		50	15	10	3	0.05	

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 5.xi.58

STATION NO.: 185

LATITUDE: 34°28' S. LONGITUDE: 152°10' E.

TIME: 1820

0	0.09	0.04	0.28	0.16
0	0.17	0.0	0.46	0.10
25	0.18	0.01	0.55	0.29

DATE: 5.xi.58

STATION NO.: 185

LATITUDE: 34°31' S. LONGITUDE: 152°09' E.

TIME: 2030

0	0.11	0.01	0.02	0.09
0	0.17	0	0.11	0.13
25	0.20	0	0.12	0.16

DATE: 5.xi.58

STATION NO.: 185

LATITUDE: 34°34' S. LONGITUDE: 152°08' E.

TIME: 2240

0	0.13	0.02	0.07	0.08	0.01
0	0.11	0.04	0.0	0.39	
25	0.18	0.07	0.23	0.24	

F.R.V. "Derwent Hunter" Cruise 18 1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ % sat.	σ _t	Total P μg.at/l
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DATE: 6.xi.58 TIME: 0010 STATION NO.: 185
 LATITUDE: 34°37' S. LONGITUDE: 152°08' E.

0 22.53 35.73 0.43

DATE: 6.xi.58 TIME: 0210 STATION NO.: 185
 LATITUDE: 34°40' S. LONGITUDE: 152°07' E.

0 22.37 35.71 0.36

DATE: 6.xi.58 TIME: 0410 STATION NO.: 185
 LATITUDE: 34°42' S. LONGITUDE: 152°06' E.

0 22.34 35.71 0.42

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 6.xi.58

STATION NO.: 185

LATITUDE: 34°37' S. LONGITUDE: 152°08' E.

TIME: 0025

0	0.16	0.03	0.10	0.10	0.01
0	0.18	0.07	0.17	0.15	
25	0.16	0.08	0.22	0.14	

DATE: 6.xi.58

STATION NO.: 185

LATITUDE: 34°40' S. LONGITUDE: 152°07' E.

TIME: 0325

0	0.24	0.13	0.33	0.22	
0	0.25	0.14	0.40	0.13	
25	0.26	0.12	0.45	0.22	

DATE: 6.xi.58

STATION NO.: 185

LATITUDE: 34°42' S. LONGITUDE: 152°06' E.

TIME: 0430

0	0.27	0.06	0.14	0.10	0.02
0	0.27	0.08	0.11	0.10	0.02
25	0.28	0.09	0.12	0.20	

F.R.V. "Derwent Hunter" Cruise 18 1958

Depth (m)	Temp. °C	S ‰	O ₂ ml/l	O ₂ ‰ sat.	σ _t	Total P μg.at/l
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DATE: 6.xi.58 TIME: 0630 STATION NO.: 185
 LATITUDE: 34°46' S. LONGITUDE: 152°09' E.

0 22.47 35.71 0.55

DATE: 6.xi.58 TIME: 0805 STATION NO.: 185
 LATITUDE: 34°50' S. LONGITUDE: 152°12' E.

0 22.50 35.73 0.47

DATE: 6.xi.58 TIME: 1020 STATION NO.: 185
 LATITUDE: 34°54' S. LONGITUDE: 152°15' E.

0 22.54 35.73 0.43

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 6.xi.58

STATION NO.: 185

LATITUDE: 34°46' S. LONGITUDE: 152°09' E.

TIME: 0640

0	0.16	0.09		0.17	
0	0.21	0.09	0.24	0.11	0
25	0.25	0.07	0.34	0.11	

DATE: 6.xi.58

STATION NO.: 185

LATITUDE: 34°50' S. LONGITUDE: 152°12' E.

TIME: 0820

0	0.17	0.01	0.04	0.11	
0	0.21	0.04	0.02	0.13	
25	0.17	0.04	0.33	0.13	

DATE: 6.xi.58

STATION NO.: 185

LATITUDE: 34°54' S. LONGITUDE: 152°15' E.

TIME: 1030

0	0.15	0.09		0.09	0
0	0.15	0.11	0	0.09	
25	0.18	0.11		0.08	0.03

CO₂ UPTAKE

INCUBATION		Depth	ACTIVITY			PRODUCTION	
Method	Period		Light	Dark	Net	mgC/m ³	gC/day/m ²

DATE: 6.xi.58 TIME: 1210 STATION NO.: 185
 LATITUDE: 34°57' S. LONGITUDE: 152°18' E.

Bath	4 hrs	0	62	10				
		0	16	5	32	0.50		0.79
		25	36	10				
		25	52	10	34	0.54		
		50	117	10				
		50	106	10	101	1.59		

DATE: 6.xi.58 TIME: 1400 STATION NO.: 185
 LATITUDE: 34°41' S. LONGITUDE: 152°19' E.

Bath	4 hrs	0	110	4				
		0	105	10	100	1.56		1.17
		25	163	10				
		25	126	10	134	2.10		
		50	79	10				
		50	93	10	76	1.19		

DATE: 6.xi.58 TIME: 1605 STATION NO.: 185
 LATITUDE: 34°30' S. LONGITUDE: 152°19' E.

Bath	4 hrs	0	97	6				
		0	121	6	103	1.61		0.68
		25	87	10				
		25	126	10	97	1.52		
		50	29	10				
		50	25	10	17	0.27		

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 6.xi.58

STATION NO.: 185

LATITUDE: 34°57' S. LONGITUDE: 152°18' E.

TIME: 1235

0	0.19	0.07	0.22	0.07	0.01
0	0.22	0.05	0.17	0.07	
25	0.21	0.09	0.18	0.06	0.04

DATE: 6.xi.58

STATION NO.: 185

LATITUDE: 34°41' S. LONGITUDE: 152°19' E.

TIME: 1420

0	0.29	0	0.39	0.12	0.02
0	0.31	0.04	0.30	0.08	0.02
25	0.44	0.01	0.37	0.12	0.03

DATE: 6.xi.58

STATION NO.: 185

LATITUDE: 34°30' S. LONGITUDE: 152°19' E.

TIME: 1615

0	0.41		0.67	0.09	0.07
0	0.41	0.03	0.47	0.08	0.10
25	0.52	0.04	0.45	0.13	0.06

F.R.V. "Derwent Hunter" Cruise 18 1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ % sat.	σ _t	Total P μg.at/l
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DATE: 6.xi.58 TIME: 1800 STATION NO.: 185
 LATITUDE: 34°32' S. LONGITUDE: 152°19' E.

0 21.46 35.70 0.43

DATE: 6.xi.58 TIME: 2000 STATION NO.: 185
 LATITUDE: 34°35' S. LONGITUDE: 152°19' E.

0 22.45 35.73 0.51

DATE: 6.xi.58 TIME: 2210 STATION NO.: 185
 LATITUDE: 34°38' S. LONGITUDE: 152°19' E.

0 22.52 35.73 0.44

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 6.xi.58

STATION NO.: 185

LATITUDE: 34°32' S. LONGITUDE: 152°19' E.

TIME: 1820

0	0.25	0.02	0.17	0.08	0.03
0	0.27	0.04	0.44	0.10	0.03
25	0.25	0.04	0.41	0.10	0.02

DATE: 6.xi.58

STATION NO.: 185

LATITUDE: 34°35' S. LONGITUDE: 152°19' E.

TIME: 2040

0	0.22	0.06	0.33	0.10	
0	0.22	0.06	0.33	0.14	
25	0.24	0.07	0.40	0.10	0

DATE: 6.xi.58

STATION NO.: 185

LATITUDE: 34°38' S. LONGITUDE: 152°19' E.

TIME: 2220

0	0.35	0.08	0.50	0.11	0.04
0	0.34	0.06	0.60	0.14	0.10
25	0.38	0.06	0.59	0.08	0.11

F.R.V. "Derwent Hunter" Cruise 18 1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ o/o sat.	σ _t	Total P μg.at/l
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DATE: 6.xi.58

TIME: 2400

STATION NO.: 185

LATITUDE: 34°41' S.

LONGITUDE: 152°19' E.

0 22.45 35.73

0.43

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 6.xi.58

STATION NO.: 185

LATITUDE: 34°41' S. LONGITUDE: 152°19' E.

TIME:	0	0	25	0.38	0.45	0.43	0.04	0.04	0.06	0.18	0.19	0.45	0.11	0.11	0.13	0.05	0.05	0.04
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F.R.V. "Derwent Hunter" Cruise 20 1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ o/o sat.	σ _t	Total P μg.at/l
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DATE: 1.xii.58 TIME: 1710 hrs STATION NO.: 186
 LATITUDE: 33°51' S. LONGITUDE: 152°28' E.
 SEA: 2 WIND: FORCE 2-3 WIRE ANGLE: 50°, 20°
 DIRECTION SE.

0	22.68	35.57	4.96	104	24.48	0.38
24	21.35	35.61	4.74	97	24.88	0.83
48	18.70	35.50	3.85	75	25.50	0.72
71	16.67	35.43	3.78	71	25.94	0.86
95	15.07	35.25	3.88	70	26.15	0.83
144	13.68	35.12	3.91	69	26.35	0.99
194	13.06	35.10	4.04	71	26.48	1.04
294	11.60	35.01	4.58	77	26.70	0.94
354	10.16	34.83	4.37	71	26.81	0.71
553	8.15	34.63	4.40	69	26.97	1.30
769	6.57	34.49	4.35	65	27.08	1.54
1228	3.97	34.52	3.67	52	27.42	1.90

DATE: 2.xii.58 TIME: 0540 hrs STATION NO.: 188
 LATITUDE: 33°51' S. LONGITUDE: 153°35' E.
 SEA: 2 WIND: FORCE 2 WIRE ANGLE: 30°, 8°
 DIRECTION SE.

0	24.95	35.73	4.68	102	23.93	0.38
25	24.86	35.73	4.49	97	23.95	0.37
50	24.70	35.75	4.65	101	24.02	0.33
75	23.93	35.73	4.68	100	24.24	0.27
100	22.38	35.71	4.29	89	24.68	0.36
150	21.21	35.66	3.80	78	24.96	0.52
200	18.95	35.64	4.04	79	25.55	0.51
300	15.93	35.39	3.97	73	26.08	0.51
357	12.29	34.99	3.97	68	26.55	0.63
571	9.31	34.72	4.40	70	26.87	0.89
800	7.08	34.51	4.82	73	27.04	1.38
1271	4.28	34.49	3.75	53	27.37	1.74

CO₂ UPTAKE

INCUBATION		Depth	ACTIVITY			PRODUCTION	
Method	Period		Light	Dark	Net	mgC/m ³	gC/day/m ²

DATE: 1.xii.58 TIME: 1630 STATION NO.: 186
 LATITUDE: 33°51' S. LONGITUDE: 152°28' E.

Bath	4 hrs	0	517	226	291	0.46	6.22
		25	2992	143	2849	4.54	
		50	4875	223	4652	10.28	
		100	3770	209	3561	5.68	

DATE: 2.xii.58 TIME: 0515 STATION NO.: 188
 LATITUDE: 33°51' S. LONGITUDE: 153°35' E.

Bath	4 hrs	0	1606	391	1215	1.94	1.29
		25	1139	263	876	1.40	
		50	1066	168	898	1.43	
		100	617	209	408	0.65	

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 1.xii.58

STATION NO.: 186

LATITUDE: 33°51' S. LONGITUDE: 152°28' E.

TIME: 1630

0	0.49	0.27	0.90	0.34	
25	0.78	0.39	0.98	0.31	0.06
50	0.58	0.57	0.64	0.27	
100	0.32	0.18	0.48	0.37	

DATE: 2.xii.58

STATION NO.: 188

LATITUDE: 33°51' S. LONGITUDE: 153°35' E.

TIME: 0530

0	0.18	0.09	0.34	0.15	
25	0.15	0.12	0.30	0.13	
50	0.24	0.09	0.68	0.12	0.01
100	0.33	0.14	0.87	0.22	

F.R.V. "Derwent Hunter" Cruise 20 1958

Depth (m)	Temp. °C	S ‰	O ₂ ml/l	O ₂ ‰ sat.	σ _t	Total P μg.at/l
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DATE: 2.xii.58 TIME: 1858 hrs STATION NO.: 189
 LATITUDE: 33°03' S. LONGITUDE: 154°14' E.
 SEA: 3 WIND: FORCE 4 WIRE ANGLE: 40°, 25°
 DIRECTION SE.

0	24.56	35.81	4.54	98	24.11	0.36
24	24.54	35.82	4.75	103	24.12	0.36
46	24.53	35.82	4.60	99	24.12	0.36
68	23.68	35.77	4.72	100	24.34	0.37
91	22.90	35.73	4.54	95	24.54	0.37
138	21.75	35.71	4.33	89	24.85	0.49
185	20.45	35.68	4.00	81	25.19	0.59
280	19.20	35.68	4.49	89	25.52	0.38
408	15.77	35.39	3.88	71	26.12	0.73
627	11.19	34.97	4.30	72	26.74	1.01
856	7.87	34.63	4.33	67	27.02	1.18
1338	4.44	34.52	3.83	54	27.37	1.60

DATE: 3.xii.58 TIME: 0650 hrs STATION NO.: 190
 LATITUDE: 32°13' S. LONGITUDE: 154°51' E.
 SEA: 3 WIND: FORCE 4 WIRE ANGLE: 30°
 DIRECTION SE.

0	24.43	35.66	4.37	94	24.03	0.44
23	24.41	35.75	4.65	100	24.05	0.40
46	23.86	35.71	4.77	102	24.24	0.41
68	23.26	35.73	4.70	99	24.43	0.40
91	22.50	35.71	4.61	96	24.64	0.47
137	21.40	35.64	4.07	83	24.90	0.81
183	20.55	35.64	4.49	91	25.13	0.53
276	18.70	35.52	4.00	78	25.52	0.84
470	14.92	35.28	3.97	72	26.23	0.86
709	10.80	34.90	4.35	72	26.75	1.01
951	7.68	34.54	4.16	64	26.97	1.36
1444	3.94	34.49	3.60	50	27.40	1.97

CO₂ UPTAKE

INCUBATION		Depth	ACTIVITY			PRODUCTION	
Method	Period		Light	Dark	Net	mgC/m ³	gC/day/m ²

DATE: 2.xii.58 TIME: 1830 STATION NO.: 189
 LATITUDE: 33°03' S. LONGITUDE: 154°14' E.

Bath	4 hrs	0	342	52	290	0.46	0.16
		25	68	28	40	0.06	
		50	82	21	61	0.10	
		100	151	34	117	0.19	

DATE: 3.xii.58 TIME: 0615 STATION NO.: 190
 LATITUDE: 32°13' S. LONGITUDE: 154°51' E.

Bath	5 hrs	0	355	163	192	0.24	
		25	374	23	351	0.45	
		50		32			
		100	91	44	47	0.06	

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 2.xii.58

STATION NO.: 189

LATITUDE: 33°03' S. LONGITUDE: 154°14' E.

TIME: 1830

0	0.18	0.07	0.66	0.16
25	0.16	0.12	0.48	0.18
50	0.28	0.22	0.71	0.19
100	0.33	0.21	0.77	0.31

DATE: 3.xii.58

STATION NO.: 190

LATITUDE: 32°13' S. LONGITUDE: 154°51' E.

TIME: 0630

0	0.20	0.14	0.41	0.17
25	0.22	0.13	0.54	0.20
50	0.16	0.09	0.27	0.14
100	0.40	0.24	1.00	0.36

F.R.V. "Derwent Hunter" Cruise 20 1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ ‰ sat.	σ _t	Total P μg.at/l
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DATE: 3.xii.58 TIME: 2045 hrs STATION NO.: 191
 LATITUDE: 32°03' S. LONGITUDE: 156°00' E.
 SEA: 2 WIND: FORCE 2 WIRE ANGLE: 45°, 30°
 DIRECTION ESE.

0	21.45	35.62	4.55	93	24.87	0.42
22	20.70	35.64	4.91	99	25.10	0.35
43	19.05	35.57	4.70	93	25.46	0.42
64	18.05	35.57	4.80	93	25.72	0.40
87	17.68	35.53	4.45	85	25.78	0.51
131	16.53	35.46	4.40	82	26.00	0.65
176	15.43	35.37	4.29	79	26.17	0.82
268	13.58	35.19	4.10	72	26.45	0.92
460	10.39	34.83	4.10	67	26.77	1.22
676	7.84	34.58	4.29	66	26.98	1.52
918	5.86	34.45	4.04	60	27.15	1.54
1412	3.46	34.54	3.91	54	27.48	2.04

DATE: 4.xii.58 TIME: 1050 hrs STATION NO.: 193
 LATITUDE: 31°51' S. LONGITUDE: 157°12' E.
 SEA: 2 WIND: FORCE 2 WIRE ANGLE: 35°, 25°
 DIRECTION NE.

0	22.70	35.73	4.74	99	24.60	0.35
21	21.23	35.66	4.91	100	24.96	0.30
43	20.05	35.62	4.23	85	25.25	0.43
64	19.07	35.61	4.29	84	25.49	0.41
84	18.40	35.57	4.16	81	25.63	0.60
126	17.95	35.55	4.29	83	25.72	0.52
169	16.83	35.46	4.16	78	25.93	0.71
261	14.77	35.32	4.16	75	26.29	0.72
454	10.92	34.90	4.07	68	26.73	1.09
682	7.82	34.58	4.35	67	26.97	1.32
920	5.84	34.45	4.10	61	27.15	1.64
1417	3.64	34.54	3.57	50	27.47	2.01

CO₂ UPTAKE

INCUBATION		Depth	ACTIVITY			PRODUCTION	
Method	Period		Light	Dark	Net	mgC/m ³	gC/day/m ²

DATE: 4.xii.58

TIME: 1000

STATION NO.: 193

LATITUDE: 31°51' S.

LONGITUDE: 157°12' E.

Bath	4 hrs	0	520	48	472	0.75	0.63
		25	756	68	688	1.10	
		50	475	44	431	0.69	
		100	63	63	0	0	

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 4.xii.58

STATION NO.: 193

LATITUDE: 31°51' S. LONGITUDE: 157°12' E.

TIME: 1030

0	0.15	0.08	0.52	0.20	
25	0.12	0.03	0.09	0.12	0.02
50	0.45	0.18	0.97	0.16	0.04
100	0.08	0.06	0.54	0.23	

F.R.V. "Derwent Hunter" Cruise 20 1958

Depth (m)	Temp. °C	S ‰	O ₂ ml/l.	O ₂ ‰ sat.	σ _t	Total P μg.at/l
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DATE: 7.xii.58 TIME: 0808 hrs STATION NO.: 194
 LATITUDE: 31°21' S. LONGITUDE: 158°31' E.
 SEA: 0 WIND: FORCE 1 WIRE ANGLE: 20°, 15°
 DIRECTION N.

0	22.75	35.71	4.77	100	24.57	0.29
25	22.14	35.73	4.85	101	24.75	0.25
49	22.13	35.90	4.80	100	24.88	0.48
73	20.87	35.68	4.85	98	25.08	0.38
97	19.98	35.64	4.66	93	25.30	0.36
146	19.52	35.62	4.70	93	25.38	0.39
195	19.01	35.61	4.40	87	25.51	0.50
292	17.86	35.55	4.55	88	25.75	0.48
487	13.36	35.17	4.37	77	26.48	0.81
728	9.20	34.72	4.23	67	26.89	0.89
973	6.55	34.47	4.16	62	27.07	1.29
1468	3.75	34.56	3.57	50	27.48	1.76

DATE: 7.xii.58 TIME: 0904 hrs STATION NO.: 196
 LATITUDE: 31°03' S. LONGITUDE: 156°46' E.
 SEA: 1 WIND: FORCE 1-2 WIRE ANGLE: 0, 12°
 DIRECTION SE.

0	22.98	35.68	4.85	102	24.48	0.51
24	22.70	35.68	4.70	98	24.55	0.48
47	19.94	35.61	3.91	78	25.27	0.71
70	18.79	35.61	4.55	89	25.56	0.52
93	18.26	35.61	4.55	88	25.69	0.64
139	17.12	35.52	4.45	84	25.90	0.75
185	15.87	35.44	4.35	80	26.14	0.82
278	13.56	35.25	4.35	77	26.49	1.01
464	9.97	34.81	4.29	70	26.83	1.25
750	6.67	34.51	4.23	64	27.09	1.68
1000	4.93	34.49	3.91	56	27.29	1.90
1500	3.01	34.60	3.40	47	27.57	2.17

CO₂ UPTAKE

INCUBATION		Depth	ACTIVITY			PRODUCTION	
Method	Period		Light	Dark	Net	mgC/m ³	gC/day/m ²

DATE: 7.xii.58 TIME: 0340 STATION NO.: 194
 LATITUDE: 31°21' S. LONGITUDE: 158°31' E.

<u>In situ</u>	½ day	0	379	114	265	3.38	0.38
		25	480	48	432	5.51	
		50	434	97	337	4.30	
		100	252	140	112	1.43	

DATE: 7.xii.58 TIME: 0340 STATION NO.: 194
 LATITUDE: 31°21' S. LONGITUDE: 158°31' E.

Bath	4 hrs	0	304	114	190	0.30	0.46
		25	414	47	367	0.58	
		50	352	63	289	0.46	
		100	319	60	259	0.41	

DATE: 7.xii.58 TIME: 1130 STATION NO.: 194
 LATITUDE: 31°21' S. LONGITUDE: 158°31' E.

Bath	4 hrs	0	192	45	147	0.23	0.39
		25	351	49	302	0.48	
		50	419	71	348	0.55	
		100	134	54	80	0.13	

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 7.xii.58

STATION NO.: 194

LATITUDE: 31°21' S. LONGITUDE: 158°31' E. DEPTH 1% S.L.: 118 m

SOLAR ALT.: 67°

TIME: 0400

0940

0	0.17	0.05	0.41	0.12		0	100
25	0.13	0.06	0.39	0.16		10	75
50	0.16	0.06	0.29	0.16		20	65
100	0.30	0.12	0.25	0.22	0.03	30	57
						40	48
						50	40
						60	30
						70	20
						80	11

DATE: 7.xii.58

STATION NO.: 194

LATITUDE: 31°21' S. LONGITUDE: 158°31' E.

TIME: 1120

0	0.09	0.06	0.40	0.16
25	0.09	0.01	0.28	0.16
50	0.09	0.01	0.13	0.16
100	0.20	0.13	0.49	0.29

CO₂ UPTAKE

INCUBATION		Depth	ACTIVITY			PRODUCTION	
Method	Period		Light.	Dark	Net	mgC/m ³	gC/day/m ²

DATE: 8.xii.58 TIME: 0345 STATION NO.: 196
 LATITUDE: 31°03' S. LONGITUDE: 156°46' E.

<u>In situ</u>	1 day	0	585	96	489	3.12	0.85
		25	1501	149	1352	8.62	
		50	2512	77	2435	15.52	
		100	158	61	97	0.62	

DATE: 8.xii.58 TIME: 0345 STATION NO.: 196
 LATITUDE: 31°03' S. LONGITUDE: 156°46' E.

Bath	4 hrs	0	487	47	440	0.80	0.81
		25	484	51	433	0.79	
		50	789	45	744	1.36	
		100	97	96	1	0	

DATE: 8.xii.58 TIME: 1140 STATION NO.: 196
 LATITUDE: 31°03' S. LONGITUDE: 156°46' E.

Bath	4 hrs	0	415	38	377	0.60	0.95
		25	755	54	701	1.12	
		50	1010	52	958	1.53	
		100	104	60	44	0.07	

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 8.xii.58

STATION NO.: 196

LATITUDE: 31°03' S. LONGITUDE: 156°46' E. DEPTH 1% S.L.: 102 m

SOLAR ALT.: 53°

TIME: 0400

0840

0	0.08	0.02	0.20	0.17		0	100
25	0.13	0.06	0.27	0.28		10	90
50	0.42	0.11	0.62	0.16	0.04	20	80
100	0.09	0.06	0.27	0.51		30	60
						40	50
						50	36
						60	20
						70	13
						80	6.5

DATE: 8.xii.58

STATION NO.: 196

LATITUDE: 31°03' S. LONGITUDE: 156°46' E. DEPTH 1% S.L.: 106 m

SOLAR ALT.: 78°

TIME: 1145

1045

0	0.10	0.07	0.43	0.14		0	100
25	0.13	0.08	0.53	0.15		10	87
50	0.38	0.09	0.63	0.19	0.02	20	79
100	0.15	0.03	0.12	0.24		30	67
						40	46
						50	37
						60	21
						70	12
						80	7.3

CO₂ UPTAKE

INCUBATION		Depth	ACTIVITY			PRODUCTION	
Method	Period		Light	Dark	Net	mgC/m ³	gC/day/m ²

DATE: 8.xii.58

TIME: 1715

STATION NO.: 196

LATITUDE: 31°03' S.

LONGITUDE: 156°46' E.

Bath	4 hrs	0	259	45	214	0.34	0.55
		25	229	58	171	0.27	
		50	793	66	727	1.16	
		100	73	58	15	0.02	

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 8.xii.58

STATION NO.: 196

LATITUDE: 31°03' S. LONGITUDE: 156°46' E. DEPTH 1% S.L.: 109 m

SOLAR ALT.: 70°

TIME: 1720

1245

0	0.11	0.06	0.43	0.28
25	0.15	0.09	0.57	0.40
50	0.27	0.07	0.43	0.19
100	0.21	0.10	0.60	0.33

0	100
10	83
20	76
30	62
40	51
50	39
60	24
70	17
80	11

F.R.V. "Derwent Hunter" Cruise 20 1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ o/o sat.	σ _t	Total P μg.at/l
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DATE: 9.xii.58 TIME: 1022 hrs STATION NO.: 197
 LATITUDE: 30°22' S. LONGITUDE: 155°30' E.
 SEA: 0 WIND: FORCE 1-2 WIRE ANGLE: 7°
 DIRECTION ENE.

0	22.80	35.77	4.77	100	24.60	0.32
25	22.23	35.64	4.85	101	24.66	0.51
50	21.71	35.62	4.47	92	24.79	0.42
75	19.60	35.59	3.88	77	25.35	0.63
100	18.63	35.57	4.40	86	25.57	0.36
150	16.63	35.37	3.78	71	25.90	0.67
200	15.46	35.44	4.53	83	26.22	0.67
300	13.14	35.23	4.77	83	26.56	0.76
500	9.85	34.78	4.33	70	26.82	1.38
750	7.23	34.54	4.37	67	27.03	1.68
1000	5.46	34.45	4.04	59	27.20	1.66
1500	3.26	34.58	3.52	49	27.53	1.85

DATE: 10.xii.58 TIME: 0140 hrs STATION NO.: 198
 LATITUDE: 30°20' S. LONGITUDE: 154°32' E.
 SEA: 2 WIND: FORCE 3 WIRE ANGLE: 30°, 40°, 27°*
 DIRECTION N.

0	23.70	35.77	4.74	101	24.33	0.55
23	23.50	35.77	4.74	101	24.38	0.42
47	23.20	35.71	4.50	95	24.44	0.52
71	23.15	35.71	4.70	99	24.45	0.51
95	23.05	35.71	4.53	95	24.48	0.53
143	22.50	35.79	4.80	100	24.70	0.52
191*	20.00	35.61	4.58	92	25.25	0.73
199	19.45	35.64	4.33	86	25.41	0.59
357	17.47	35.53	4.37	83	25.82	0.75
673	9.99	34.81	4.35	71	26.83	1.26
904	6.80	34.58	3.97	60	27.13	1.16
1382	4.84	34.51	3.83	55	27.33	1.94

CO₂ UPTAKE

INCUBATION		Depth	ACTIVITY			PRODUCTION	
Method	Period		Light	Dark	Net	mgC/m ³	gC/day/m ²

DATE: 9.xii.58 TIME: 0345 STATION NO.: 197
 LATITUDE: 30°22' S. LONGITUDE: 155°30' E.

<u>In situ</u>	1 day	0	3956	620	3336	21.22	1.01
		25	1325	522	803	5.11	
		50	2910	384	2526	16.07	
		100	113	.40	73	0.46	

DATE: 9.xii.58 TIME: 0345 STATION NO.: 197
 LATITUDE: 30°22' S. LONGITUDE: 155°30' E.

Bath	4 hrs	0	579	70	509	0.81	0.65
		25	568	44	524	0.84	
		50	579	46	533	0.85	
		100	112	60	52	0.08	

DATE: 9.xii.58 TIME: 1000 STATION NO.: 197
 LATITUDE: 30°22' S. LONGITUDE: 155°30' E.

Bath	4 hrs	0	1110	31	1079	1.72	1.72
		25	1570	45	1525	2.43	
		50	1523	45	1498	2.39	
		100	61	54	7	0.01	

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 9.xii.58

STATION NO.: 197

LATITUDE: 30°22' S. LONGITUDE: 155°30' E. DEPTH 1% S.L.: 100 m

SOLAR ALT.: 56°

TIME: 0400

0	0.15	0.07	0.43	0.18
25	0.16	0.08	0.69	0.22
50	0.27	0.10	0.65	0.20
100	0.25	0.12	0.84	0.28

0900

0	100
10	87
20	75
30	57
40	45
50	32
60	17
70	8.6
80	5.2

DATE: 9.xii.58

STATION NO.: 197

LATITUDE: 30°22' S. LONGITUDE: 155°30' E. DEPTH 1% S.L.: 107 m

SOLAR ALT.: 80°

TIME: 1015

0	0.11	0.12	0.24	0.10	
25	0.15	0.18	0.43	0.18	
50	0.24	0.07	0.55	0.10	0.04
100	0.08	0.03	0.25	0.01	

1100

0	100
10	84
20	77
30	62
40	48
50	35
60	22
70	13
80	6.9

CO₂ UPTAKE

INCUBATION		Depth	ACTIVITY			PRODUCTION	
Method	Period		Light	Dark	Net	mgC/m ³	gC/day/m ²

DATE: 9.xii.58

TIME: 1530

STATION NO.: 197

LATITUDE: 30°22' S.

LONGITUDE: 155°30' E.

Bath	4 hrs	0	572	67	505	0.80	0.90
		25	797	59	738	1.18	
		50	858	58	800	1.28	
		100	137	80	57	0.09	

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 9.xii.58

STATION NO.: 197

LATITUDE: 30°22' S. LONGITUDE: 155°30' E. DEPTH 1/2 S.L.: 119 m

SOLAR ALT.: 66°

TIME: 1530

1315

0	0.19	0.07	0.66	0.02		0	100
25	0.13	0.05	0.49	0.17		10	86
50	0.24	0.09	0.68	0.12		20	75
100	0.19	0.05	0.56	0.15	0.05	30	61
						40	49
						50	42
						60	30
						70	19
						80	11

CO₂ UPTAKE

INCUBATION		Depth	ACTIVITY			PRODUCTION	
Method	Period		Light	Dark	Net	mgC/m ³	gC/day/m ²

DATE: 10.xii.58

TIME: 0115

STATION NO.: 198

LATITUDE: 30°20' S.

LONGITUDE: 154°32' E.

Bath	3 hrs	0	1050	318	732	1.56	0.65
		25	213	49	164	0.35	
		50	424	79	345	0.73	
		100	226	(50)	176	0.37	

PIGMENTS

LIGHT PENETRATION

Depth	Chlorophyll			Astacin	Non Astacin	Time	Depth	Percentage Surface Light
	a	b	c					

DATE: 10.xii.58

STATION NO.: 198

LATITUDE: 30°20' S. LONGITUDE: 154°32' E.

TIME: 0130								
0	0.04	0.01	0.21	0.11	0.01			
25	0.15	0.07	0.50	0.14				
50	0.29	0.05	0.56	0.18				
100	0.36	0.17	0.91	0.23				

F.R.V. "Derwent Hunter" Cruise 20 1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ ‰ sat.	σ _t	Total P μg.at/l
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DATE: 12.xii.58 TIME: 0430 hrs STATION NO.: 201
 LATITUDE: 32°12' S. LONGITUDE: 154°36' E.
 SEA: 2 WIND: FORCE 3 WIRE ANGLE: 30°, 18°
 DIRECTION NNW.

0	24.35	35.73	4.65	100	24.11	0.52
25	24.33	35.77	4.63	100	24.15	0.30
50	24.29	35.73	4.57	98	24.14	0.36
75	24.30	35.82	4.26	92	24.19	0.37
100	24.28	35.75	4.65	100	24.15	0.28
150	22.50	35.70	4.30	90	24.64	0.30
200	21.10	35.68	4.36	89	25.02	0.40
300	19.50	35.66	4.57	91	25.42	0.32
500	15.63	35.37	4.11	76	26.20	0.57
750	11.39	34.99	4.20	71	26.72	0.99
1000	7.49	34.56	3.86	59	27.02	1.34
1500	4.26	34.51	3.75	53	27.29	1.61

DATE: 12.xii.58 TIME: 1720 hrs STATION NO.: 203
 LATITUDE: 33°06' S. LONGITUDE: 155°17' E.
 SEA: 1 WIND: FORCE 1 WIRE ANGLE: 35°, 15°
 DIRECTION SW.

0	24.93	35.75	4.65	101	23.95	0.37
24	24.43	35.73	4.69	101	24.08	0.44
48	24.46	35.73	4.60	99	24.07	0.33
72	23.85	35.73	4.54	97	24.26	0.27
97	22.85	35.88	4.54	95	24.65	0.41
145	21.50	35.70	4.54	93	24.92	0.38
194	20.10	35.64	4.36	87	25.25	0.42
291	18.24	35.55	4.26	83	25.65	0.63
486	13.05	35.17	4.11	72	26.54	0.88
584	11.36	34.99	4.33	73	26.72	0.93
782	8.41	34.63	4.49	70	26.94	1.25
1188	5.09	34.47	4.04	58	27.26	1.79

F.R.V. "Derwent Hunter" Cruise 20 1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ ‰ sat.	σ _t	Total P μg.at/l
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DATE: 14.xii.58 TIME: 0911 hrs STATION NO.: 208
 LATITUDE: 35°29' S. LONGITUDE: 157°28' E.
 SEA: 2 WIND: FORCE 4 WIRE ANGLE: 40°, 35°
 DIRECTION S.

0	21.43	35.70	4.84	99	24.93	0.34
22	21.38	35.68	4.77	98	24.93	0.39
45	21.39	35.71	4.65	95	24.95	0.54
68	21.48	35.68	4.72	97	24.90	0.42
91	20.50	35.66	3.83	77	25.16	0.47
137	19.50	35.62	3.70	73	25.39	0.61
183	19.00	35.53	4.11	81	25.44	0.67
275	17.50	35.55	4.23	81	25.83	0.55
459	13.63	35.26	4.36	77	26.48	0.92
689	9.39	34.78	4.36	70	26.91	1.08
876	7.22	34.54	4.26	65	27.03	1.55
1369	4.19	34.54	3.79	54	27.41	1.75

DATE: 15.xii.58 TIME: 0541 hrs STATION NO.: 209
 LATITUDE: 35°04' S. LONGITUDE: 155°04' E.
 SEA: 1 WIND: FORCE 2 WIRE ANGLE: 0
 DIRECTION S.

0	21.17	35.68	5.04	103	24.99	0.43
25	21.15	35.64	4.95	101	24.96	0.41
50	19.08	35.61	5.11	101	25.49	0.34
75	17.05	35.52	4.63	88	25.92	0.49
100	15.76	35.46	3.40	63	26.17	0.62
150	13.96	35.32	4.49	80	26.46	0.65
200	12.96	35.21	4.72	82	26.59	0.71
300	11.80	34.92	4.30	73	26.58	0.84
500	8.17	34.63	4.07	63	26.97	1.33
750	6.02	34.51	4.23	63	27.17	1.24
1000	4.57	34.47	3.98	57	27.32	1.49
1500	2.88	34.60	3.53	48	27.58	1.78

F.R.V. "Derwent Hunter" Cruise 20 1958

Depth (m)	Temp. °C	S‰	O ₂ ml/l	O ₂ o/o sat.	σ _t	Total P μg.at/l
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DATE: 15.xii.58 TIME: 1712 hrs STATION NO.: 211
 LATITUDE: 34°37' S. LONGITUDE: 153°42' E.
 SEA: 1 WIND: FORCE 3 WIRE ANGLE: 30°, 25°
 DIRECTION N.

0	21.71	35.68	4.99	103	24.84	0.43
22	21.35	35.66	5.01	103	24.92	0.35
41	21.55	35.59	5.24	107	24.81	0.35
62	18.27	35.57	5.46	106	25.65	0.41
81	17.60	35.53	5.11	98	25.79	0.51
121	16.10	35.48	4.26	96	26.11	0.64
160	15.50	35.44	4.63	85	26.21	0.64
240	13.16	35.21	4.30	75	26.54	0.86
412	9.33	34.74	4.30	69	26.88	1.39
650	7.02	34.54	4.20	64	27.06	1.75
815	5.85	34.45	4.20	62	27.15	1.80
1264	3.63	34.58	3.75	52	27.50	2.01

DATE: 16.xii.58 TIME: 0530 hrs STATION NO.: 213
 LATITUDE: 34°24' S. LONGITUDE: 152°33' E.
 SEA: 4 WIND: FORCE 5 WIRE ANGLE: 15°, 30°
 DIRECTION NE.

0	21.08	35.66	5.04	103	25.01	0.42
25	19.55	35.62	5.18	103	25.37	0.33
50	18.48	35.59	5.38	105	25.62	0.35
75	16.53	35.46	5.01	94	25.99	0.52
100	15.82	35.46	4.75	88	26.16	0.60
150	14.70	35.44	5.06	91	26.39	0.65
200	13.87	35.68	4.75	85	26.76	0.79
300	12.30	35.12	4.86	83	26.64	0.83
500	8.72	34.69	4.57	72	26.93	1.48
750	7.56	34.58	4.36	67	27.02	1.77
1000	4.97	34.49	3.95	57	27.29	1.88
1500	3.05	34.61	3.53	49	27.58	2.10

OCEANOGRAPHICAL STATION LISTS

1. Hydrological and planktological observations by F.R.V. *Warreen* in south-eastern Australian waters, 1938-39
2. Hydrological and planktological observations by F.R.V. *Warreen* in south-eastern Australian waters, 1940-42
3. Hydrological and planktological observations by F.R.V. *Warreen* in south-western Australian waters, 1947-50
4. Onshore hydrological investigations in eastern Australia, 1942-50
5. Estuarine hydrological investigations in eastern Australia, 1940-50. Queensland: Nerang and Coomera Rivers, Moreton Bay and Brisbane River, Logan River, Dunwich Oyster Lease; New South Wales: Richmond River, Clarence River, Macleay River, Hastings River, Manning River, Port Stephens, Tilligerry Creek, Hawkesbury River
6. Estuarine hydrological investigations in eastern Australia, 1940-50. New South Wales: Middle Harbour and Port Jackson, Georges River-Botany Bay
7. Estuarine hydrological investigations in eastern Australia, 1940-50. New South Wales: Port Hacking, Lake Illawarra, Shoalhaven River, Jervis Bay, Clyde River, Moruya River, Tuross River, Wagonga Inlet; Victoria: Port Phillip; Tasmania: Tamar River, Derwent River, Huon River, D'Entrecasteaux Channel, Pittwater, Lake Dobson (freshwater), Penna Dam (freshwater)
8. Hydrological investigations in south-western Australia, 1944-50
9. Records of twenty-four hourly hydrological observations at selected stations in eastern Australian estuarine systems, 1942-50. Queensland: Logan River; New South Wales: Richmond River, Clarence River, Macleay River, Hastings River, Manning River, Port Stephens, Hawkesbury River, Georges River, Port Hacking, Clyde River, Tuross River; Tasmania: Tamar River, Derwent River
10. Records of twenty-four hourly hydrological observations at Shell Point, Georges River, New South Wales, 1942-50
11. Analyses of bottom deposits in eastern Australia, 1946-50
12. Estuarine hydrological investigations in eastern and south-western Australia, 1951
13. Analysis of bottom deposits in eastern and south-western Australia, 1951 and records of twenty-four hourly hydrological observations at selected stations in eastern Australian estuarine systems, 1951
14. Onshore hydrological investigations in eastern and south-western Australia, 1951
15. Estuarine hydrological investigations in eastern and south-western Australia, 1952
16. Analysis of bottom deposits in eastern and south-western Australia, 1952 and records of twenty-four hourly hydrological observations at selected stations in eastern Australian estuarine systems, 1952
17. Onshore hydrological investigations in eastern and south-western Australia, 1952
18. Onshore hydrological investigations in eastern and south-western Australia, 1953
19. Onshore planktological investigations in eastern Australia, 1945-54
20. Surface sampling in the Tasman Sea, 1953
21. Estuarine hydrological investigations in eastern and south-western Australia, 1953
22. Further onshore planktological investigations in eastern Australia, 1945-54
23. Planktological investigations made by F.R.V. *Derwent Hunter* in eastern Australian waters, 1952-54
24. Onshore hydrological investigations in eastern and south-western Australia, 1954
25. Surface sampling in the Tasman Sea, 1954
26. Estuarine hydrological investigations in eastern and south-western Australia, 1954

OCEANOGRAPHICAL STATION LISTS

(Continued)

27. Onshore and oceanic hydrological investigations in eastern and south-western Australia, 1955
28. Surface sampling in the Tasman and Coral Seas, 1955
29. Estuarine hydrological investigations in eastern and south-western Australia, 1955
30. *Onshore and oceanic hydrological investigations in eastern and south-western Australia, 1956*
31. Surface sampling in the Tasman and Coral Seas and the south-eastern Indian Ocean, 1956
32. Estuarine hydrological investigations in eastern and south-western Australia, 1956
33. Coastal hydrological investigations in eastern and south-western Australia, 1957
34. Coastal hydrological investigations at Port Hacking, New South Wales, 1957
35. Coastal hydrological investigations at Eden, New South Wales, 1957
36. Surface sampling in the Tasman and Coral Seas, 1957
37. Hydrological investigations from F.R.V. *Derwent Hunter*, 1957
38. Coastal hydrological investigations in the New South Wales tuna fishing area, 1958
39. Surface sampling in the Coral and Tasman Seas, 1958
40. Coastal hydrological investigations in south-eastern Australia, 1958
41. Oceanic investigations in eastern Australian waters, F.R.V. *Derwent Hunter*, 1958