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Woods Hole Oceanographic Institution

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DATE 10/24/72

ATLANTIS II CRUISE 59, Legs 5 and 6

by

Nathaniel Corwin

June 1972

TECHNICAL REPORT

*Prepared for the Atomic Energy Commission
under Contract AT(11-1) 3564.*

WOODS HOLE, MASSACHUSETTS 02543

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Woods Hole, Massachusetts 02543

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TECHNICAL REPORT

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Department of Biology

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ATLANTIS II CRUISE 59, Legs 5 and 6

This report gives in detail the chemical and physical data collected, with a cruise track and station positions.

The analytical techniques used were standard oceanographic procedures, most of which are published in detail in the literature. A brief statement concerning these methods is given below.

Temperature was determined with calibrated deep-sea reversing thermometers. Corrected depths were calculated from paired protected and unprotected thermometers at various depths within the cast. At stations shallower than 100 meters no depth correction has been made.

Salinities were analyzed with a Bradshaw and Schleicher (1956) Conductivity Bridge, upon return to the laboratory.

Dissolved oxygen was determined by the Winkler method as described by Thompson and Robinson (1939) and modified by Carritt and Carpenter (1966).

Ammonia Nitrogen were determined colorimetrically using the Phenol-hypochlorite method as described by Lucia Solórzono (1969).

Silicates were determined colorimetrically as described by Strickland and Parsons (1968).

Carbon fixation ^{14}C , assimilated in situ, was measured using the ^{14}C technique as described by Steemann Nielsen (1952) but with minor modifications as described by Ryther, Hall, Pease, Bakun and Jones (1966).

Particulate carbon was analyzed using a Perkin Elmer Model 240 CHN Analyzer.

Dissolved organic carbon was measured as described by Menzel and Vaccaro (1964).

Phosphorus Inorganic phosphate was determined colorimetrically by the single solution method described by Murphy and Riley (1962).

Total phosphorus determined colorimetrically as described by Menzel and Corwin (1965).

Nitrite and Nitrate Nitrogen were determined colorimetrically; Nitrite by the method described by Strickland and Parsons (1968), Nitrate by cadmium - copper reduction to Nitrite as described by Wood, Armstrong and Richards (1967).

Chlorophyll a was measured by fluorescence emission of acetone extract in a Turner Fluorometer. (Holm-Hansen, Lorenzen, Holmes and Strickland 1965.)

References

- Bradshaw, A. L. and K. E. Schleicher. 1956. A conductivity bridge for the measurement of salinity of sea water. Woods Hole Oceanographic Institution Technical Report No. 56-20.
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- Menzel, D. W. and R. F. Vaccaro. 1964. The measurement of dissolved organic and particulate carbon in sea water. Limnol. and Oceanog., 9: 138-142.
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Solorzono, Lucia 1969. Determination of Ammonia in Natural Waters by the Phenol-hypochlorite Method. Limnol. and Oceanog., Vol 14, No. 5, pp. 799-801.

Steemann Neilsen, E. 1952. The use of radioactive carbon (^{14}C) for measuring radioactive production in the sea. J. Cons. Perm. Int. Explor. Mer., 18: 117-140.

Strickland, J.D.H. and T. R. Parsons. 1968. A manual of sea water analysis. Bulletin No. 167, Published by the Fisheries Research Board of Canada.

Thompson, T. G. and R. J. Robinson. 1939. Notes on the determination of dissolved oxygen in sea water. J. Mar. Res., 2: 1-8.

Wood, E. D., F.A.J. Armstrong and F. A. Richards. 1967. Determination of nitrate in sea water by Cadmium - Copper Reduction to Nitrate. J. mar. bio. assn. U.K. 47: 23-31.

STATION NO. 1731

CRUISE NO. 59

VESSEL Atlantis II

DATE 19 Sept. 1970

REDUCED DATA

LAT. 34° 30' N

LONG. 17° 17' E

DEPTH 3091

TIME 1730 GMT

WEATHER _____

WIND _____

ZOOPLANKTON VOL. _____ ml.

[illegible]

STATION NO. 1732
CRUISE NO. 59
VESSEL Atlantis II
DATE 21 Sept. 1970

REDUCED DATA

LAT. 33° 01' N.
LONG. 17° 18' E.

DEPTH _____
TIME _____
WEATHER _____
WIND _____
ZOOPLANKTON VOL. _____ ml.

[illegible]

STATION NO. 1733
CRUISE NO. 59
VESSEL Atlantis II
DATE 22, Sept. 1970

REDUCED DATA

LAT. 31° 50' N.
LONG. 17° 18' E.

DEPTH _____
TIME 1114 GMT
WEATHER _____
WIND _____
ZOOPLANKTON VOL. _____ ml

[illegible]

DATE 23. Sept. 1970

LONG. 17° 49' W.

ZOOPLANKTON VOL. _____ ml

DEPTH	PART-C	PART-N
	µg/L	µg/L
714	8.1	
952	13.1	
1447	9.6	
1955	5.9	

STATION NO. 1735
CRUISE NO. 59
VESSEL Atlantis II
DATE 24, Sept. 1970
25, Sept. 1970

REDUCED DATA

LAT. 35° 30' N.
LONG. 18° 30' E.

DEPTH 3850 m.
TIME 15:13 GMT
WEATHER _____
WIND _____
ZOOPLANKTON VOL. _____ ml.

[illegible]

STATION NO. 1736
CRUISE NO. 59
VESSEL Atlantis II
DATE 27 Sept. 1970

REDUCED DATA

LAT. 37° 12' N.
LONG. 08° 35' E

DEPTH 162 m.
TIME 2017 GMT
WEATHER _____
WIND _____
ZOOPLANKTON VOL. _____ ml.

[illegible]

STATION NO. 1737
CRUISE NO. 59
VESSEL Atlantis II
DATE 28 Sept. 1970

REDUCED DATA

LAT. 37° 22' N.
LONG. 08° 27' E

DEPTH _____
TIME 0035 GMT
WEATHER _____
WIND _____
ZOOPLANKTON VOL. _____ ml.

[illegible]

STATION NO. 1738
CRUISE NO. 59
VESSEL Atlantis II
DATE 28 Sept. 1970

REDUCED DATA

LAT. 37° 19.5' N.
LONG. 08° 11.5' E.

DEPTH 2032 M.
TIME 2159 - GMT
WEATHER _____
WIND _____
ZOOPLANKTON VOL. _____ ml.

[illegible]

STATION NO. 1739
CRUISE NO. 59
VESSEL Atlantis II
DATE 29. Sept. 1970
30. Sept. 1970

REDUCED DATA

LAT. 38° 34' N.
LONG. 06° 52' E.

DEPTH 2724 M.
TIME 2157 GMT
WEATHER _____
WIND _____
ZOOPLANKTON VOL. _____ ml.

[illegible]

STATION NO. 1740
CRUISE NO. 59
VESSEL Atlantis II
DATE 3, October, 1970

REDUCED DATA

LAT. 35° 02' N.
LONG. 8° 31' W.

DEPTH 3000 M.
TIME 2012 GMT
WEATHER _____
WIND _____
ZOOPLANKTON VOL. _____ ml.

[illegible]

STATION NO. 1741
 CRUISE NO. 59
 VESSEL Atlantis II
 DATE 11 October 1970

REDUCED DATA

LAT. 23° 45' N.
 LONG. 17° 02' W.

DEPTH 260 M.
 TIME 2211 GMT
 WEATHER _____
 WIND _____
 ZOOPLANKTON VOL. _____ ml.

DEPTH	TEMP	SAL.‰	σ_t	O ₂ ml/L	PO ₄ -P μg A/L	PART-P μg A/L	TOTAL-P μg A/L	NO ₂ -N μg A/L	NO ₃ -N μg A/L	NH ₄ -N μg A/L	SiO ₃ -Si μg A/L	DEPTH	CHL. a mg/m ³	C ¹⁴ INSITU mg C/m ³ /d
1	19.57	36.427		5.150	0.10	0.11	0.38	0.04	0.32	4.28	1.30	1	0.27	6.14
10	19.57	36.423		5.355	0.04	0.10	0.28	0.04	0.31	1.32	1.01	8	0.26	5.22
20	19.50	36.416		5.316	0.04	0.11	0.29	0.03	0.38	2.18	1.04	16	0.28	12.7
39	18.46	36.362		4.633	0.32	0.10	0.58	0.17	5.66	1.41	2.91	27	0.30	13.0
59	17.83	36.300		4.399	0.48	0.05	0.69	0.18	0.73	1.27	3.87	54	0.38	4.74
78	17.03	36.213		3.468	0.66	0.08	0.81	0.11	12.77	0.96	4.95			
98	16.19	36.223		3.385	0.78	0.02	0.96	0.08	12.58	0.71	4.90			
122	16.38	36.125		3.101	0.83	0.04	0.99	0.07	15.56	0.90	5.92			
147	15.77	35.984		2.599	1.09	0.04	1.24	0.08	19.04	0.71	7.26			
196	14.81	35.781		2.187	1.38	-	1.51	0.07	24.11	0.94	9.43			
245	-	35.780		2.131	1.44	-	1.54	0.07	22.21	-	10.47			
												DEPTH	PART-C μg/L	Diss. Org. C mg/L
												1	69	105
												10	82	0.67
												20	73	0.99
												39	78	0.73
												59	58	0.73
												78	58	0.61
												98	30	0.59
												122	27	0.61
												147	38	0.53
												196	50	?
												245	29	0.53

STATION NO. 1742
 CRUISE NO. 59
 VESSEL Atlantis II
 DATE 12 October, 1970

REDUCED DATA

LAT. 23° 52.3' N.
 LONG. 17° 00.5' W.

DEPTH _____
 TIME 1353 GMT
 WEATHER _____
 WIND _____
 ZOOPLANKTON VOL. _____ ml.

DEPTH	TEMP.	SAL.‰	σ_t	O ₂ ml/L	PO ₄ -P μg A/L	PART-P μg A/L	TOTAL-P μg A/L	NO ₂ -N μg A/L	NO ₃ -N μg A/L	NH ₄ -N μg A/L	SiO ₃ -Si μg A/L	DEPTH	CHL. a mg/m ³	C ¹⁴ INSITU mg C/m ³ /d
														D
1	21.09	36.635		5.172	0.28	0.003	0.49	0.04	0.18	0.54	1.87	1	0.16	1.71
10	21.09	36.619		5.309	0.02	0.06	0.23	0.04	0.29	0.85	1.16	10	0.14	5.93
20	21.17	36.668		5.363	0.01	0.02	0.15	0.04	0.34	0.99	1.04	20	0.14	4.31
39	21.11	36.679		5.219	0.10	0.04	0.20	0.03	0.15	0.80	0.95	39	0.15	3.41
59	20.25	36.780		5.193	0.74	0.09	1.00	0.03	0.10	1.18	0.99	59	0.56	2.85
78	19.21	36.658		4.945	0.16	0.05	0.38	0.07	2.33	1.41	1.47	78	0.29	
98	19.03	36.672		4.789	0.20	0.02	0.35	0.08	2.27	0.71	1.47	98	0.18	
122	17.89	36.518		4.425	0.31		0.42	0.05	7.14	0.90	2.30	122	0.02	
147	17.44	36.481		4.346	0.34		0.46	0.04	6.97	0.85	2.59	147	0.01	
196	16.05	36.158		3.399	0.72		0.83	0.02	12.27	1.65	5.18	196	0.01	
392	12.17	35.563		2.600	1.33		1.37	0.02	23.44	1.17	10.37	392	0.006	
588	9.32	35.194		2.068	1.87		1.90	0.02	22.21	N.G.	17.44	588	0.002	
784	7.80	35.053		2.551	1.92		2.03	0.02	20.17	0.43	20.74	784	0.001	
980	6.62	35.008		3.078	1.92		1.99	0.02	27.60	1.13	21.88	980	0.003	
												DEPTH	PART-C μg/L	Diss. Org. C mg/L
												1	38	1.90
												10	55	1.60
												20	47	0.96
												39	57	1.28
												59	70	1.60
												78	58	1.63
												98	30	1.02
												122	16	1.05
												147	20	1.16
												196	23	1.05
												392	30	1.09
												588	18	1.09
												784	18	1.05
												980	22	0.85

STATION NO. 1743
 CRUISE NO. 59
 VESSEL Atlantis II
 DATE 13 October, 1970

REDUCED DATA

LAT. 24° 03' N.
 LONG. 18° 26' W.

DEPTH 2880 M.
 TIME 20:35 GMT
 WEATHER _____
 WIND _____
 ZOOPLANKTON VOL. _____ ml.

DEPTH	TEMP.	SAL.‰	σ_t	O ₂ ml/L	PO ₄ -P μg A/L	PART-P μg A/L	TOTAL-P μg A/L	NO ₂ -N μg A/L	NO ₃ -N μg A/L	NH ₄ -N μg A/L	SiO ₃ -Si μg A/L	DEPTH	CHL. a mg/m ³	C ¹⁴ INSITU mg C/m ³ /d
														D
1	23.23	36.808		5.430	0.12	0.06	0.26	0.10	0.07	1.16	1.19	1	0.07	1.99
10	23.23	36.753		4.968	1.82	0.06	1.95	0.09	0.09	1.15	1.55	10	0.06	4.17
19	23.20	36.759		4.962	1.24	0.04	1.28	0.07	0.02	1.75	0.94	19	0.06	3.73
38	23.18	36.756		4.961	1.67	0.06	1.64	0.09	0.03	1.13	0.89	38	0.07	3.12
57	23.18	36.754		4.969	0.33	0.04	0.41	0.09	0.19	1.12	1.07	57	0.08	1.26
76	23.02	36.715		5.082	0.40	0.04	0.45	0.03	0.10	1.34	0.89	76	0.12	
96	20.96	36.540		5.023	0.40	0.04	0.55	0.13	0.29	1.16	0.95	96	0.28	
120	19.60	36.538		4.888	0.26	0.02	0.33	0.08	3.00	2.25	1.27	120	0.11	
143	19.18	36.653		4.858	0.08	0.06	0.28	0.04	2.22	1.43	1.14	143	0.04	
191	17.66	36.481		4.200	0.38	0.06	0.57	0.04	7.46	1.08	2.79	191	0.006	
383	13.58	35.834		4.071	0.76	0.04	0.88	0.02	13.63	0.59	4.62	383	0.001	
574	10.83	35.444		3.035	1.32	0.06	1.41	0.02	24.75	0.67	10.56	574	0.008	
766	8.41	35.170		2.897	1.75	0.04	1.79	0.02	28.00	0.60	17.26	766	0.001	
957	6.99	35.081		3.264	1.82	0.04	1.91	0.02	29.76	0.50	20.27	957	0.008	
												DEPTH	PART-C μg/L	Diss. Org. C mg/L
972	6.95	35.096		3.255	1.78	0.05	1.87	0.01	27.15	0.62	20.27	1	32	1.32
1458	5.55	35.205		4.546	1.52	0.02	1.59	0.01	24.99	0.67	22.44	10	45	1.32
1944	3.94	35.102		5.225	1.50		1.54	0.01	20.92	0.49	27.72	19	41	1.32
2430	3.23	34.983		5.274	1.46		1.51	0.02	22.67	0.56	33.95	38	52	1.53
2722	2.91	34.942		5.221	1.46		1.51	0.02	22.26	0.50	39.42	57	37	1.22
												76	29	1.09
												96	31	1.70?
												120	36	1.49
												143	14	2.21
												191	16	1.05
												383	20	0.64
												574	11	0.75
												766	12	1.43
												957	11	0.99
												972	11	0.96
												1458	11	1.19
												1944	13	1.12
												2430	12	2.38
												2722	10	1.97

STATION NO. 1744
CRUISE NO. 59
VESSEL Atlantis II
DATE 15 October 1970

REDUCED DATA

LAT. 26° 20' N.
LONG. 14° 37' W.

DEPTH 183 m
TIME 12:45 GMT
WEATHER _____
WIND _____
ZOOPLANKTON VOL. _____ ml

[illegible]

STATION NO. 1745
 CRUISE NO. 59
 VESSEL Atlantis II
 DATE October 16, 1970

REDUCED DATA

LAT. 26° 32' N.
 LONG. 14° 51' W.

DEPTH 1000 M.
 TIME 19:17 GMT
 WEATHER _____
 WIND _____
 ZOOPLANKTON VOL. _____ ml.

DEPTH	TEMP.	SAL.‰	σ_t	O ₂ ml/L	PO ₄ -P μg A/L	PART-P μg A/L	TOTAL-P μg A/L	NO ₂ -N μg A/L	NO ₃ -N μg A/L	NH ₄ -N μg A/L	SiO ₃ -Si μg A/L	DEPTH	CHL. a mg/m ³	C ¹⁴ INSITU mg C/m ³ /d
														D
1	22.60	36.779		4.961	0.14	0.03	0.31	0.03	0.38	1.22	1.69	1	0.06	0.527
10	22.60	36.751		5.105	3.85?	0.03	4.02?	0.02	0.30	0.94	1.04	10	0.05	14.5.67
19	22.40	36.745		5.198	0.25	0.03	0.38	0.02	0.13	0.99	0.84	19	0.06	28.4.17
39	22.39	36.755		5.149	0.13	0.04	0.24	0.02	0.10	0.77	0.89	39	0.07	44.5.01
58	22.37	36.762		5.006?	0.10	0.04	0.22	0.03	0.12	0.73	0.89	58	0.10	92.2.98
78	21.12	36.705		5.332	1.67?	0.07	1.76?	0.02	0.11	0.75	0.85	78	0.16	
97	19.85	36.700		5.257	0.33	0.02	0.44	0.09	0.13	0.54	0.76	97	0.26	
121	18.67	36.653		5.074	0.10		0.16	0.08	0?	0.41	1.05	121	0.08	
146	17.94	36.663		4.952	0.31		0.36	0.04	2.14	0.48	1.27	146	0.04	
195	16.99	36.456		4.748	0.43		0.28	0.03	4.22	0.32	1.84	195	0.008	
389	12.51	35.677		3.335	1.15		1.12	0.03	19.99	0.64	8.01	389	0.004	
584	10.39	35.406		3.045	1.53		1.52	0.02	24.57	0.29	13.01	584	0.002	
778	7.98	35.132		2.781	1.92		1.84	0.02	29.54	0.70	18.67	778	0.001	
973	6.94	35.114		3.380	1.83		1.81	0.03	25.96	0.36	21.69	973	0.001	
												DEPTH	PART-C μg/L	Diss Org. C mg/L
												1	33	1.26
												10	37	1.36
												19	49	1.12
												39	48	1.09
												58	34	1.45
												78	35	1.09
												97	31	1.12
												121	27	0.99
												146	20	1.09
												195	16	
												389	20	0.99
												584	16	0.82
												778	15	0.73
												973	12	0.61

STATION NO. 1746
 CRUISE NO. 59
 VESSEL Atlantis II
 DATE 16 October, 1970

REDUCED DATA

LAT. 26° 53' N.
 LONG. 15° 16' W.

DEPTH _____
 TIME 22:58 GMT
 WEATHER _____
 WIND _____
 ZOOPLANKTON VOL. _____ ml.

DEPTH	TEMP.	SAL.‰	σ_t	O ₂ ml/L	PO ₄ -P μg A/L	PART-P μg A/L	TOTAL-P μg A/L	NO ₂ -N μg A/L	NO ₃ -N μg A/L	NH ₄ -N μg A/L	SiO ₃ -Si μg A/L	DEPTH	CHL. a mg/m ³	C ¹⁴ INSITU mg C/m ³ /d
														D
1	22.64	36.761		4.948	0.04	0.05	0.15	0.03	0.23	0.98	0.97	1	0.06	0.4.17
9	22.54	36.763		5.036	2.20	0.04	1.38	0.03	0.25	1.06	0.99	9	0.06	12.6.61
18	22.39	36.744		5.009	0.12	0.04	0.23	0.03	0.13	1.59	0.90	18	0.06	24.5.01
37	22.35	36.762		5.195	7.55	0.04	7.18?	0.02	0.17	1.04	0.82	37	0.07	40.3.60
55	22.31	36.779		5.030	1.03	0.02	1.27	0.03	0.14	1.20	0.80	55	0.11	80.1.27
73	20.76	36.671		5.286	0.10	0.03	0.21	0.02	0.22	1.20	0.80	73	0.16	
92	19.13	36.635		5.234	1.81	0.02	2.19	0.09	1.26	1.73	1.09	92	0.30	
114	18.27	36.557		4.750	0.22		0.33	0.05	3.38	1.66	1.54	114	0.14	
137	17.90	36.558		4.765?	0.15		0.24	0.06	3.28	1.56	1.56	137	0.08	
183	16.65			4.529	0.33		0.39	0.04	6.65	1.35	2.46	183	0.04	
366	13.03			3.402	1.00		1.02	0.03	18.95	1.95	6.98	366	0.01	
549	11.02			3.602?	1.18		1.41	0.03	20.90	1.76	10.84	549	0.001	
732	8.76			2.989	1.67		1.72	0.02	27.69	1.86	16.88	732	0.0008	
915	7.78			3.403	1.67		1.73	0.02	25.15	2.00	18.39	915	0.0005	
												DEPTH	PART-C μg/L	Diss. Org. C mg/L
928	7.68			3.396	1.67		1.73	0.07	26.96			1	45	2.11
1404	5.74			4.558	1.47		1.50	0.08	23.02			9	58	1.29
1795	-			5.050	1.47		1.45	0.01	21.32			18	39	1.25
2289	3.33			5.274	1.47		1.39	0.01	23.04			37	49	1.05
2787	2.87			5.991	1.45		1.51	0.01	23.67			55	29	1.25
												73	45	1.31
												92	34	0.85
												114	24	1.23
												137	22	1.09
												183	21	1.05
												366	24	1.10
												549	19	0.85
												732	14	1.16
												915	13	1.05
												928	12	0.97
												1404	18	0.82
												1795	14	0.70
												2289	14	0.67
												2787	17	0.61

STATION NO. 1747
 CRUISE NO. 59
 VESSEL Atlantis II
 DATE 17 October, 1970

REDUCED DATA

LAT. 28° 05' N.
 LONG. 13° 13' W

DEPTH 183 M.
 TIME 23:21 GMT
 WEATHER _____
 WIND _____
 ZOOPLANKTON VOL. _____ ml.

DEPTH	TEMP.	SAL.‰	σ_t	O ₂ ml/L	PO ₄ -P μg A/L	PART-P μg A/L	TOTAL-P μg A/L	NO ₂ -N μg A/L	NO ₃ -N μg A/L	NH ₄ -N μg A/L	SiO ₃ -Si μg A/L	DEPTH	CHL. a mg/m ³	C ¹⁴ INSITU mg C/m ³ /d
														D
1	19.90			5.195	0.12	0.15	0.42	0.05	0.44	1.20	1.66	1	0.33	1 26.1
9	19.87			5.286	1.06	0.13	1.35	0.05	0.23	1.48	0.70	9	0.30	6 18.0
19	18.82			5.221	0.11	0.16	0.41	0.11	0.71	1.36	0.93	19	0.62	12 16.3
38	17.80			5.008	1.43	0.05	1.56	0.31	2.34	1.13	1.41	38	0.31	20 20.9
57	17.10			4.843	0.24	0.02	0.35	0.08	3.81	1.37	1.62	57	0.06	40 3.6
75	16.75			4.650	0.61	0.09	0.79	0.08	5.48	1.37	2.40	75	0.07	
94	16.56			4.461	0.49	0.03	0.61	0.09	5.70	1.06	3.05	94	0.07	
118	16.43			4.401	0.39	0.06	0.54	0.08	6.34	0.84	3.29	118	0.08	
142	16.44			4.393	0.48	0.06	0.63	0.08	7.15	1.01	3.54	142	0.08	
165	16.22			4.429	0.45	0.04	0.57	0.07	7.27	0.80	3.64	165	0.07	
												DEPTH	PART-C μg/L	Dis. Org. C mg/L
												1	76	1.15
												9	93	0.52
												19	106	2.31
												38	45	1.29
												57	29	1.22
												75	30	2.75
												94	29	2.31
												118	29	0.53
												142	34	-
												165	39	0.53

STATION NO. 1748
 CRUISE NO. 59
 VESSEL Atlantis II
 DATE 18 October, 1970

REDUCED DATA

LAT. 28° 19' N.
 LONG. 13° 36' W.

DEPTH 1230 M.
 TIME 0811 GMT
 WEATHER _____
 WIND _____
 ZOOPLANKTON VOL. _____ ml.

DEPTH	TEMP.	SAL.‰	σ_t	O ₂ ml/L	PO ₄ -P μgA/L	PART-P μgA/L	TOTAL-P μgA/L	NO ₂ -N μgA/L	NO ₃ -N μgA/L	NH ₄ -N μgA/L	SiO ₃ -Si μgA/L	DEPTH	CHL. a mg/m ³	C ¹⁴ INSITU mgC/m ³ /d
														D
1	21.63	36.416		5.055	0.22	0.09	0.45	0.04	0.23	1.79	1.70	1	0.15	0 4.74
10	21.43	36.410		5.218	1.04	0.03	1.24	0.03	0.25	1.83	1.23	10	0.15	14 6.77
20	21.22	36.388		5.245	0.08	0.08	0.27	0.02	0.25	1.43	1.18	20	0.13	28 5.80
39	20.52	36.434		5.266	5.05	0.05	0.51	0.02	0.24	2.38	0.83	39	0.20	46 3.57
59	19.65	36.457		5.426	0.20	0.06	0.42	0.03	0.22	1.59	0.96	59	0.26	92 1.49
78	17.17	36.475		4.900	0.83	0.03	0.92	0.10	3.03	1.35	1.43	78	0.15	
98	16.59	36.378		4.742	0.28	0.03	0.40	0.06	5.05	1.29	1.94	98	0.05	
122	16.25	36.328		4.657	0.43	0.02	0.55	0.04	6.10	1.13	2.19	122	0.04	
147	15.85	36.284		4.625	0.37		0.39	0.04	6.14	1.28	2.51	147	0.02	
196	14.81	36.063		4.406	0.53		0.54	0.03	9.23	1.16	3.60	196	0.006	
392	12.23	35.647		3.670	1.03		1.06	0.04	16.09	0.88	7.71	392	0.003	
588	10.07	35.384		3.083	1.46		1.51	0.02	23.95	0.88	12.73	588	0.002	
784	8.34	35.212		2.920	1.77		2.15	0.03	27.43	1.31	18.10	784	0.002	
980	7.01	—		3.310	1.80		2.15	0.02	28.74	1.04	19.80	980	0.002	
1176	6.80	35.246		3.865	1.67		1.60	0.02	24.75	0.72	19.33	1176	0.002	
												DEPTH	PART-C	Diss. Org. C
													μg/L	mg/L
												1	41	1.66
												10	44	1.60
												20	41	1.87
												39	41	1.77
												59	44	1.60
												78	35	1.80
												98	19	2.93
												122	15	2.04
												147	20	1.60
												196	17	2.14
												392	16	1.19
												588	13	1.19
												784	12	1.49
												980	12	2.20
												1176	12	2.14

STATION NO. 1749
CRUISE NO. 59
VESSEL Atlantis II
DATE 20 October, 1970

REDUCED DATA

LAT. 28° 49' N.
LONG. 12° 29' W.

DEPTH _____
TIME 0907 GMT
WEATHER _____
WIND _____
ZOOPLANKTON VOL. _____ ml.

[illegible]

STATION NO. 1750
CRUISE NO. 59
VESSEL Atlantis II
DATE 20 October, 1970

REDUCED DATA

LAT. 29° 20' N.
LONG. 11° 04' W.

DEPTH 165 M.
TIME 2016 GMT
WEATHER _____
WIND _____
ZOOPLANKTON VOL. _____ ml

[illegible]

DATE 21 October, 1970

LONG. 12° 44' W.

ZOOPLANKTON VOL. _____ ml.

Seamant Conception Bank

[illegible]

STATION NO. 1752
 CRUISE NO. 59
 VESSEL Atlantis II
 DATE October 22, 1970

REDUCED DATA

LAT. 30° 08.0' N.
 LONG. 12° 56' W.

DEPTH 1150 M.
 TIME 0647 GMT
 WEATHER _____
 WIND _____
 ZOOPLANKTON VOL. _____ ml.

DEPTH	TEMP.	SAL.‰	σ_t	O ₂ ml/L	PO ₄ -P μg A/L	PART-P μg A/L	TOTAL-P μg A/L	NO ₂ -N μg A/L	NO ₃ -N μg A/L	NH ₄ -N μg A/L	SiO ₃ -Si μg A/L	DEPTH	CHL. a mg/m ³	C ¹⁴ INSITU mg C/m ³ /d
														D
1	21.83			5.055	0.03	0.02	0.13	0.02	0.13	1.27	1.11	1	0.10	3.02
10	21.82			5.082	0.45	0.03	0.57	0.02	0.11	1.29	0.94	10	0.10	3.95
19	21.82			5.104	0.06	0.02	0.20	0.02	0.05	1.34	0.90	19	0.10	3.78
38	21.82			5.102	0.08	0.04	0.22	0.02	0.14	1.24	1.00	38	0.10	1.89
57	19.81			5.450	0.03	0.03	0.15	0.02	0.12	1.16	0.89	57	0.17	2.71
76	17.83			5.605	6.40?	0.04	6.15?	0.01	0.12	1.62	1.08	76	0.20	
95	17.04			5.351	1.60	0.02	1.78	0.05	0.58	1.71	1.88	95	0.18	
119	16.34			5.074	0.24	0.01	0.35	0.09	3.30	1.73	1.73	119	0.12	
142	15.83			5.045	0.30		0.37	0.03	4.80	1.69	2.23	142	0.05	
190	15.39			5.023	0.32		0.39	0.02	5.63	1.55	2.52	190	0.004	
380	12.94			4.696	0.62		0.66	0.02	9.70	1.90	3.87	380	0.001	
569	11.19			4.664	1.00		1.05	0.02	16.70	1.59	7.59	569	0.001	
759	-			4.188	1.32		1.34	0.02	22.35	1.58	11.50	759	0.005	
949	15.78			3.867	1.42		1.49	0.02	23.75	1.45	15.46	949	0.005	
												DEPTH	PART-C μg/L	Diss Org. C mg/L
												1	31	1.84
												10	33	0.41
												19	33	0.55
												38	44	0.41
												57	43	1.09
												76	34	1.16
												95	28	1.19
												119	15	1.22
												142	14	0.97
												190	14	1.12
												380	30	2.07?
												569	21	1.43
												759	17	0.58
												949	9	2.82?

STATION NO. 1753
CRUISE NO. 59
VESSEL Atlantis II
DATE 23 October, 1970

REDUCED DATA

LAT. 31° 10' N.
LONG. 13° 42' W.

DEPTH _____
TIME 0802 GMT
WEATHER _____
WIND _____
ZOOPLANKTON VOL. _____ ml.

[illegible]

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<p>This report gives in detail the chemical and physical data collected on ATLANTIS II cruise 59, Legs 5 and 6, with a cruise track and station position.</p> <p>The analytical techniques used were standard oceanographic procedures, most of which are published in detail in the literature.</p>			
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