

# OCEANOGRAPHICAL AND METEOROLOGICAL CONDITIONS OBSERVED AT ASAMUSHI, NORTHERN JAPAN, DURING NOVEMBER, 1979- NOVEMBER, 1980

著者	KYOZUKA KEI-ICHIRO, Mayama Tsutomu, Tamura Seiichi
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OCEANOGRAPHICAL AND METEOROLOGICAL CONDITIONS  
OBSERVED AT ASAMUSHI, NORTHERN JAPAN, DURING  
NOVEMBER, 1979- NOVEMBER, 1980<sup>1)</sup>

KEI-ICHIRO KYOZUKA, TSUTOMU MAYAMA and SEI-ICHI TAMURA<sup>2)</sup>

*Marine Biological Station, Tôhoku University, Asamushi,  
Aomori 039-34, Japan*

Two stations were selected for the oceanographical and meteorological observations (Fig. 1). Coastal observation was done at the pier of the Marine Biological Station, Tôhoku University ( $40^{\circ}55'N$ :  $140^{\circ}50'E$ , St. A) and offing observation was done at St. B 2 km off the Station. At St. A, air temperature (maximum and minimum of every day), humidity, water temperature of surface layer, specific gravity (converted into chlorinity), wind wave intensity, wind intensity and wind direction were measured. Atmospheric pressure was also measured using a Fortin barometer in the laboratory (Fig. 2). Specific gravity was measured using an aerometer. At St. B, water temperature, salinity (converted into chlorinity), dissolved oxygen, saturation of oxygen and pH were measured at the depths of 0, 5, 10, 20 and 30 m, respectively. Observations on color of sea and transparency were also performed (Table 1). Water temperature and salinity were measured using a salinometer (Electronic Instruments Ltd., MC5/2). Dissolved oxygen was measured by the Winkler method. Offing observation was conducted in the morning (9.00-10.00)

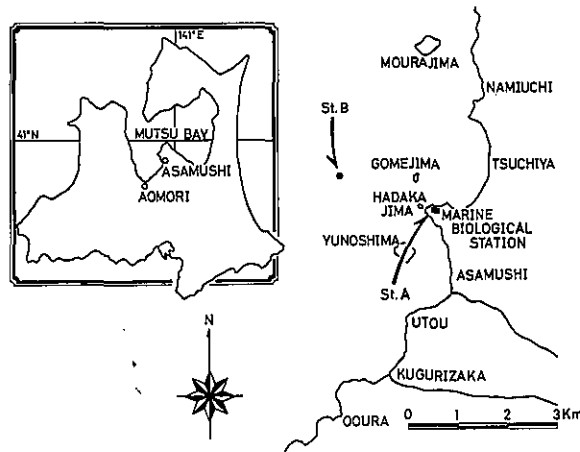


Fig. 1. The stations for the oceanographical and meteorological observations.  
A: the pier of the Marine Biological Station, Tôhoku University. B: 2 km off the Station.

1) Contribution from the Marine Biological Station, Tôhoku University, No. 457

2) 経塚啓一郎, 間山力, 田村清一

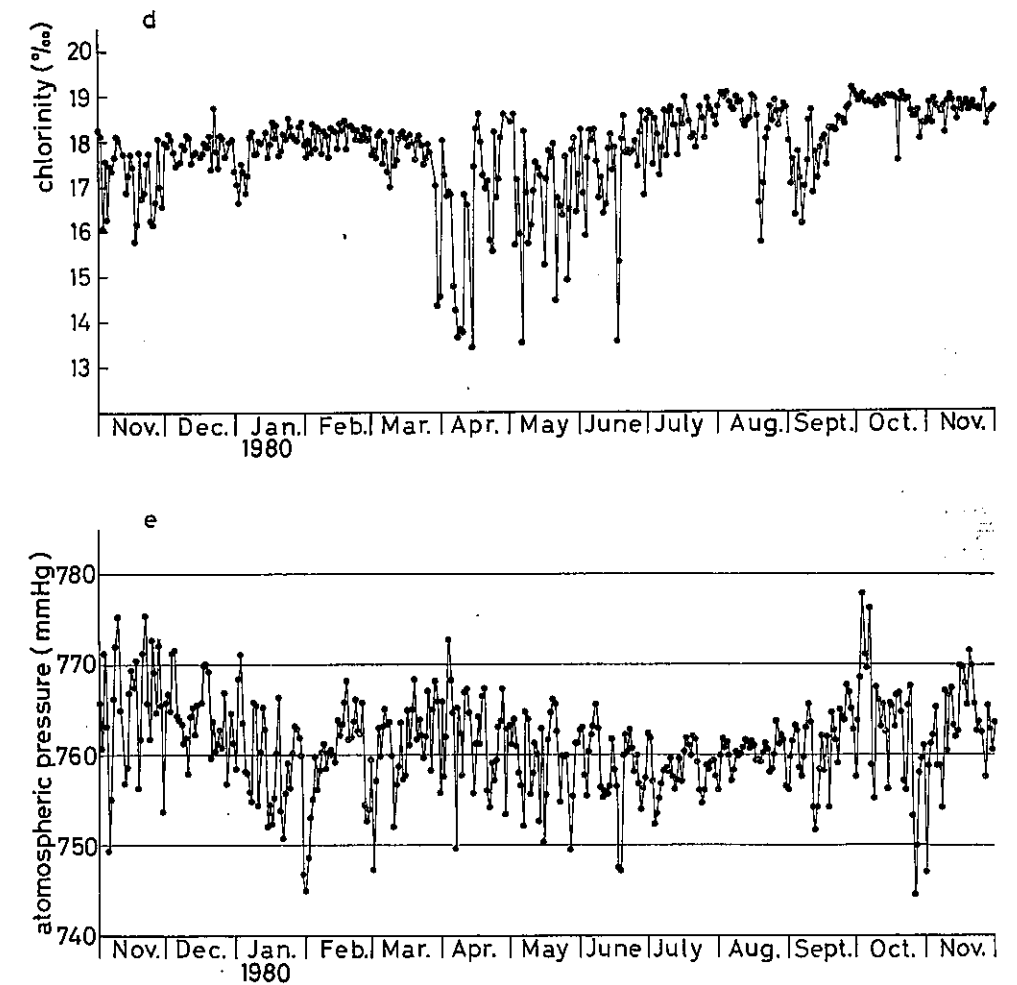
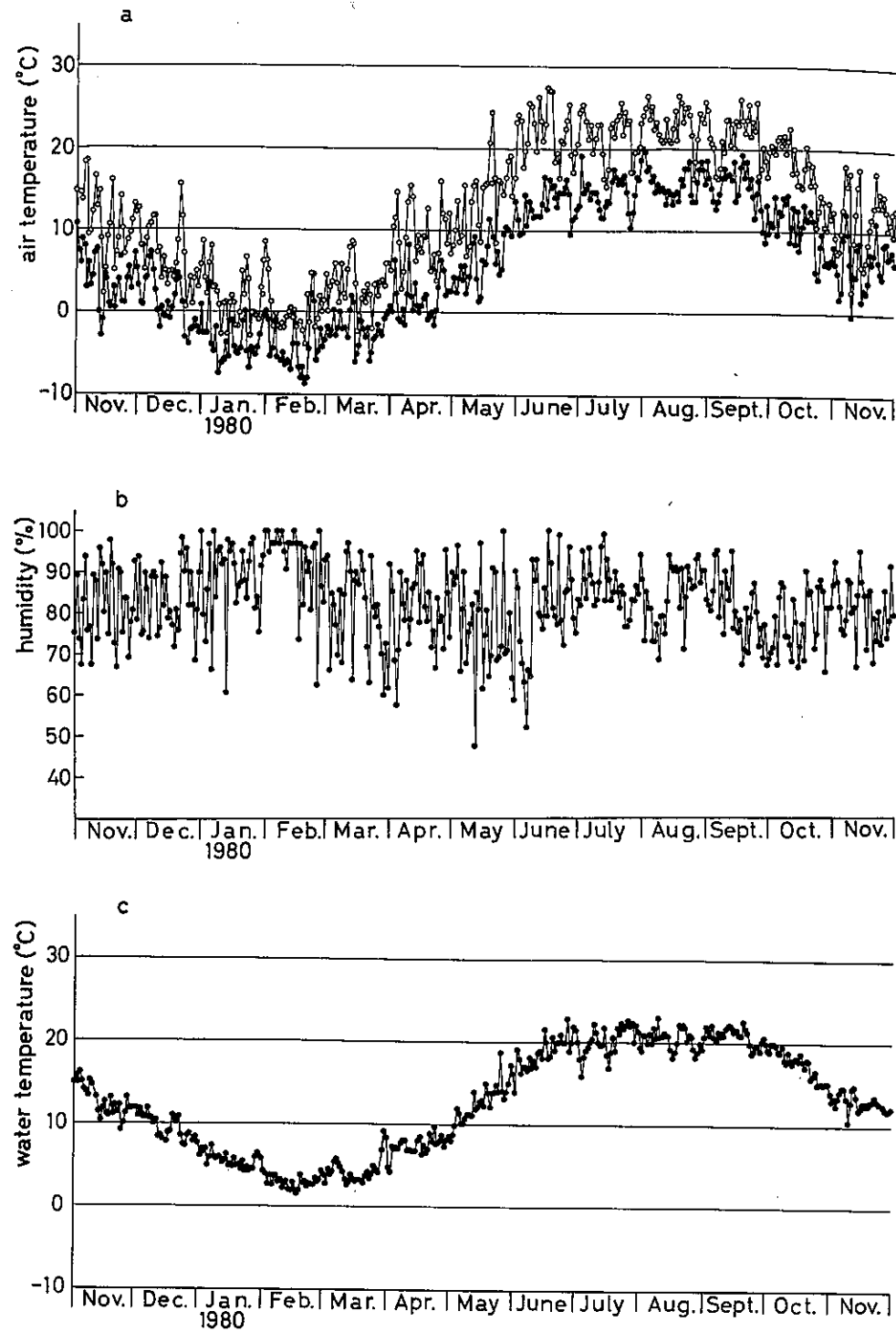


Fig. 2. Oceanographical and meteorological conditions observed at St. A during November, 1979-November, 1980.

The items of b-g were measured at 13.00.

- a: Seasonal changes in maximum (open circles) and minimum (closed circles) air temperatures of every day.
- b: Seasonal change in humidity.
- c: Seasonal change in water temperature of surface layer.
- d: Seasonal change in chlorinity.
- e: Seasonal change in atmospheric pressure.

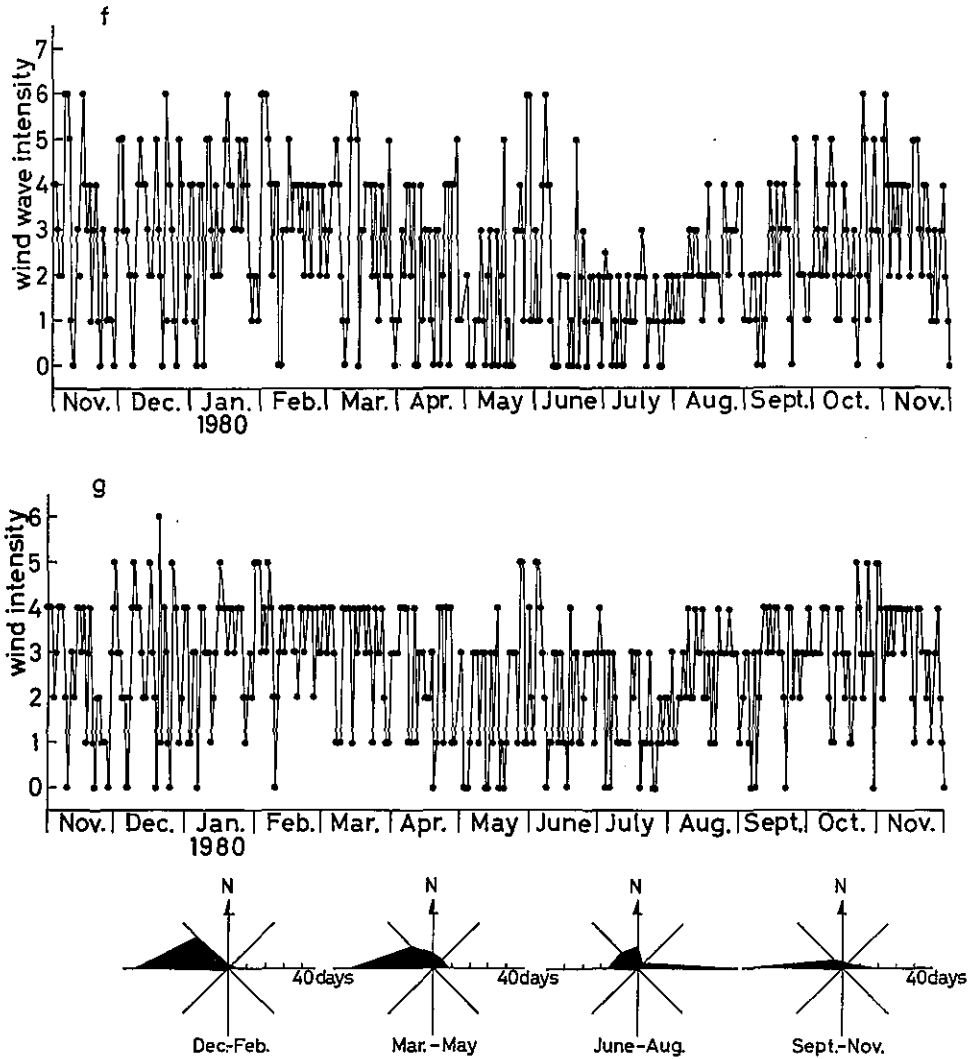


Fig. 2. continue

- f: Seasonal change in wind wave intensity. Intensity is defined as follows; 0: dead calm, 1: very smooth, 2: smooth, 3: slight, 4: moderate, 5: rather rough, 6: rough
- g: Seasonal change in wind intensity (upper figure) and frequency of the wind direction for each season (Dec. -Feb., Mar. -May, June-Aug. and Sept.-Nov., lower figure). Wind intensity is defined as follows; 0: the velocity of the wind, 0-1.5 m/sec, 1: 1.5-3.5 m/sec, 2: 3.5-6.0 m/sec, 3: 6.0-10.0 m/sec, 4: 10.0-15.0 m/sec, 5: 15.0-29.0 m/sec, 6: >29.0 m/sec.

Table 1.  
Oceanographical conditions observed at St. B during November, 1979–November, 1980.

Observation	Date	Water temperature (°C)					Chlorinity (‰)					Oxygen (cc/L)					Saturation of O <sub>2</sub> (%)					pH					Color of sea	Transparency (m)
		0 m	5 m	10 m	20 m	30 m	0 m	5 m	10 m	20 m	30 m	0 m	5 m	10 m	20 m	30 m	0 m	5 m	10 m	20 m	30 m	0 m	5 m	10 m	20 m	30 m		
1	Nov. 9, 1979	13.67	15.86	16.19	16.29	16.60	17.07	18.25	18.39	18.44	18.53	5.69	5.52	5.40	5.38	5.22	92.4	94.7	93.4	93.1	91.1	8.3	8.3	8.4	8.4	8.4	6	6.0
2	28	11.43	14.01	14.08	14.19	14.25	16.71	18.43	18.50	18.55	18.60	6.15	5.95	5.54	5.78	5.84	95.3	99.0	92.3	96.3	97.2	8.3	8.3	8.3	8.4	8.4	4	11.0
3	Dec. 23	10.61	11.42	11.42	11.42	11.41	18.11	18.61	18.62	18.61	18.60	6.35	5.87	5.93	5.81	5.89	98.6	93.2	94.3	92.2	93.5	8.3	8.3	8.3	8.4	8.4	4	11.0
4	Jan. 29, 1980	5.04	5.32	5.60	5.65	5.85	18.23	17.81	17.81	17.82	17.81	7.31	7.21	7.04	7.08	6.91	100.8	99.6	98.1	98.7	96.8	8.2	8.3	8.3	8.3	8.3	4	9.0
5	Feb. 19	2.32	2.60	2.62	2.99	3.27	/	18.33	18.96	19.01	19.04	7.64	7.74	7.81	7.73	7.61	/	100.9	102.8	102.7	101.5	8.2	8.3	8.3	8.3	8.3	4	10.5
6	Mar. 5	3.59	3.44	3.41	3.22	3.33	16.83	17.83	18.12	18.69	18.87	7.81	7.80	7.79	7.64	7.73	102.2	103.0	103.3	101.5	103.3	8.2	8.2	8.3	8.3	8.3	4	10.0
7	Apr. 1	5.00	5.03	4.71	4.61	5.99	16.89	17.27	17.85	18.11	18.55	8.35	8.03	8.13	7.94	7.53	113.0	109.3	110.6	108.0	106.4	8.2	8.2	8.3	8.3	8.3	4	4.0
8	May 6	8.40	8.39	8.21	7.66	7.38	18.06	18.44	18.45	18.61	18.70	8.36	8.17	8.15	8.01	7.97	123.9	121.8	120.6	117.8	116.7	8.2	8.2	8.3	8.3	8.3	4	6.5
9	26	13.05	12.01	11.10	9.85	9.00	16.24	18.20	18.33	18.44	18.48	6.62	6.75	6.55	6.62	6.34	105.4	107.8	103.0	101.7	95.8	8.3	8.4	8.4	8.4	8.4	4	6.0
10	June 7	14.61	14.18	13.43	12.95	11.14	18.23	18.59	18.59	18.59	18.64	6.53	6.40	6.61	6.81	6.84	109.7	107.2	109.1	111.5	108.1	8.3	8.3	8.4	8.4	8.4	4	13.0
11	23	18.80	16.60	15.25	13.44	12.80	17.88	18.34	18.45	18.57	18.60	5.87	5.83	6.01	6.09	5.73	105.6	75.3	102.4	100.3	93.5	8.2	8.2	8.3	8.3	8.3	3	12.0
12	July 11	19.20	18.00	16.64	15.69	15.00	18.29	18.39	18.51	18.66	18.72	5.53	5.52	5.69	6.05	5.60	100.5	98.6	99.3	104.1	95.2	8.3	8.3	8.4	8.4	8.4	4	17.0
13	23	21.22	19.26	17.99	17.00	15.95	18.12	18.64	18.62	18.70	18.78	5.52	5.51	5.65	5.67	5.65	103.6	100.7	101.1	99.8	97.8	8.3	8.3	8.4	8.4	8.4	4	12.0
14	Aug. 11	20.06	19.80	18.80	18.21	16.80	18.44	18.48	18.59	18.71	18.79	5.55	5.69	5.82	5.51	4.87	102.6	104.8	105.6	99.1	85.6	8.3	8.3	8.4	8.4	8.4	3	9.0
15	Sept. 8	20.40	20.48	20.10	18.85	18.40	16.57	18.23	18.37	18.48	18.64	5.80	5.40	5.64	5.75	5.55	105.6	100.4	104.3	103.2	81.6	8.2	8.3	8.4	8.4	8.4	4	7.0
16	25	20.18	20.18	20.19	20.03	20.20	18.44	18.44	18.45	18.48	18.54	5.45	5.18	5.19	5.19	5.18	100.9	95.9	96.1	95.9	96.1	8.2	8.2	8.2	8.3	8.3	5	8.0
17	Oct. 24	17.21	17.21	17.21	17.08	17.00	18.54	18.54	18.53	18.51	18.50	5.48	5.53	5.57	5.49	5.50	96.5	97.4	98.1	96.3	96.7	8.2	8.2	8.3	8.3	8.3	4	8.0
18	Nov. 25	12.62	13.20	13.28	13.40	13.40	18.42	18.54	18.59	18.60	18.60	6.15	6.12	6.06	5.97	6.06	99.7	100.5	99.7	98.5	100.0	8.3	8.3	8.4	8.4	8.4	4	12.3