

**Sixth Report of the Regular Limnological  
Survey of Lake Biwa (1972)  
I. Abiotic Environments<sup>1)2)</sup>**

By

Syuiti MORI

Otsu Hydrobiological Station, Kyoto University

(Received November 28, 1973)

This is the sixth report of the regular survey on the abiotic environments of Lake Biwa during 1972. When we compare these data with those of previous years, some noticeable features can be pointed out. Regarding the transparency, small figures of 2.8 m in June and 1.5 m in September at Ie-1 are noteworthy though the figures of both August and December suggest the slight recovery of the environmental conditions since the last year.

As for the variation of the amount of dissolved oxygen and of hydrogen ion concentration, it is a general tendency that the oxygen is supersaturated and the character of water is alkaline in the epilimnion during May and June at Ie-1. The amount of oxygen, however, showed a trend of decrease after August and reached considerably low level in the deeper hypolimnion at the end of summer stagnation period even in such an oligotrophic part of the lake. At three stations in the shallow southern part, the supersaturation of dissolved oxygen appeared already in February and reappeared after May together with alkaline tendency. It is particularly noticeable that the supersaturation over 140 % accompanying alkaline nature was observed during August and similar supersaturation was measured again in October.

When we compare these data obtained during 1972 with those described in the First Report (from 1965 to the first half of 1966), some remarkable features are noticed. During the stagnation period at Ie-1, the supersaturation phenomenon in the epilimnion accompanying mostly alkaline nature, was more conspicuously observed in 1972 than in 1965-1966. Most common and striking one is the decrease of dissolved oxygen in the deeper hypolimnion (as small as 20-40 %)

---

1) Contribution from the Otsu Hydrobiological Station, Kyoto University, No. 220.

2) JIBP-PF Publication No. 175.

accompanying acidic nature of water. It suggests that organic materials have been increasing and the dissolved oxygen has been considerably consumed during the stagnation period of recent years in the deeper part of the hypolimnion. At three stations of the southern part of the lake, similar features showing increase of both the alkaline nature of water and the level of supersaturation are recognized in the data obtained in mid-summer of 1972. Even in mid-winter the alkaline nature of water and the high amount of dissolved oxygen are maintained in 1972, which were never observed in 1965–1966. These phenomena seem to be closely correlated with increasing tendency of phytoplankton, the exact figure of which is now under investigation.

The series of reports were edited by the Director of the Station, Syuiti Mori, and the present part, on the abiotic environments, was arranged by Shoji Horie.

Samples were collected by T. Narita, A. Kawabata and T. Ueda, the latest made also the oxygen titration. Other members of the Otsu Hydrobiological Station have assisted this survey in many ways.

		Depth	Temp. (°C)	pH	O <sub>2</sub> (cc/l)	O <sub>2</sub> (%)
Station	Ie-1	0	9.15	7.4	7.62	94.3
Date	Jan. 12. 1972	1	9.10	7.4	7.54	93.2
Weather	Clear	2	9.15	7.4	7.64	94.6
Air temperature	11.8°C	5	9.15	7.4	7.67	95.0
Wind direction	N	10	9.15	7.4	7.69	95.2
speed	6.7 m/sec	15	9.15	7.4	7.52	93.1
Cloud form	KC	20	9.15	7.4	7.57	93.7
amount	6	25	9.15	—	—	
Transparency	4.0 m	30	9.15	7.4	7.48	92.6
Wave	Moderate	40	9.10	7.4	7.61	94.1
Mud temperature	7.5°C	50	9.10	7.4	7.55	93.3
		60	9.10	7.4	7.45	92.1
		70	7.40	6.8	4.51	53.5
Station	Ie-1	0	7.9	7.3	8.15	97.8
Date	Feb. 16. 1972	1	8.0	7.3	8.22	98.9
Weather	Cloudy	2	8.0	7.3	8.18	98.4
Air temperature	6.9°C	5	7.9	7.2	8.39	100.7
Wind direction	S	10	7.9	7.3	8.24	98.9
speed	1 m/sec	15	7.9	7.2	8.7	104.4
Cloud form	SC	20	7.9	7.3	8.24	98.9
amount	10	30	7.9	7.2	8.17	98.1

		Depth	Temp. (°C)	pH	O <sub>2</sub> (cc/l)	O <sub>2</sub> (%)
Transparency	4.5 m	40	7.9	7.2	8.13	97.6
Wave	Smooth	50	7.9	7.2	8.12	97.5
Mud temperature	7.7°C	60	8.0	7.2	8.09	97.4
		70	7.9	7.2	8.20	98.4
Station	Ie-1	0	8.3	7.2	7.94	96.2
Date	Mar. 16. 1972	1	8.05	7.2	7.97	96.1
Weather	Clear	2	7.80	7.2	8.00	95.8
Air temperature	7.8°C	5	7.65	7.2	8.01	95.7
Wind direction speed	ESE	10	7.60	7.3	7.94	94.6
	—	15	7.58	7.3	7.93	94.5
Cloud form amount	SC	20	7.58	7.3	7.91	94.3
	1	25	7.58	—	—	
Transparency	4.8 m	30	7.55	7.3	7.91	94.3
Wave	Smooth	40	7.55	7.3	7.90	94.2
Mud temperature	7.8°C	50	7.53	7.3	7.88	93.7
		60	7.53	7.3	7.93	94.3
		70	7.53	7.2	7.97	94.8
		(B)72	7.51			
Station	Ie-1	0	9.75	7.4	7.94	99.6
Date	Apr. 14. 1972	1	9.1	7.3	7.97	98.5
Weather	Clear	2	9.05	7.3	8.00	98.9
Air temperature	12.3°C	5	9.0	7.4	8.01	98.8
Wind direction speed	N	10	8.95	7.3	7.94	97.9
	0.8 m/sec	15	8.95	7.5	7.93	97.8
Cloud form amount	—	20	8.95	7.3	7.91	97.5
	—	30	8.85	7.4	7.91	97.3
Transparency	4.0 m	40	8.8	7.2	7.90	96.9
Wave	Smooth	50	8.3	7.1	7.88	95.5
Mud temperature	8.1°C	60	8.2	7.0	7.93	95.9
		70	7.95	7.0	7.97	95.9
		(B)73.5	7.9			
Station	Ie-1	0	16.3	8.4	8.27	119.5
Date	May 15. 1972	1	15.7	8.4	8.13	116.1
Weather	Cloudy	2	15.55	8.0	7.89	112.4
Air temperature	18.6°C	5	14.6	7.8	7.76	108.2

		Depth	Temp. (°C)	pH	O <sub>2</sub> (cc/l)	O <sub>2</sub> (%)
Wind direction	N	10	13.1	7.4	7.50	101.4
speed	2.1 m/sec	15	11.7	7.2	7.55	98.8
Cloud form	SK	20	10.8	7.2	7.21	92.6
amount	10	(25)	9.8	—	—	
Transparency	3.2 m	30	9.3	7.2	7.41	91.9
Wave	Smooth	40	8.75	7.2	7.33	89.9
Mud temperature	8.6°C	50	8.3	7.1	6.98	84.6
		60	7.9	7.0	6.55	78.6
		70	7.75	7.0	6.19	74.1
Station	Ie-1	0	21.2	9.1	7.02	112.0
Date	June 16. 1972	1	20.15	9.3	7.24	113.1
Weather	Clear	2	19.95	9.2	7.15	111.4
Air temperature	25.0°C	5	19.6	9.0	7.09	109.6
Wind direction	—	10	16.25	8.0	6.49	93.8
speed	—	15	14.05	7.3	6.40	88.4
Cloud form	KC	20	11.6	7.2	6.81	89.0
amount	4	25	9.3	—	—	
Transparency	2.8 m	30	9.05	7.1	6.85	84.7
Wave	—	40	8.7	7.1	6.73	82.4
Mud temperature	8.5°C	50	8.3	7.0	6.40	77.6
		60	8.0	7.0	5.92	71.2
		70	7.85	6.8	5.27	63.3
		(B)	7.85	—	—	
Station	Ie-1	0	22.9	8.0	5.88	96.6
Date	July 10. 1972	1	22.9	7.9	5.88	96.6
Weather	Cloudy	2	22.8	7.9	5.85	95.9
Air temperature	18.4°C	5	22.4	7.9	5.93	96.6
Wind direction	N	10	21.9	7.9	5.94	96.0
speed	2.3 m/sec	15	18.5	7.5	5.73	86.7
Cloud form	S	20	15.0	7.3	5.85	82.4
amount	10	25	12.6	—	—	—
Transparency	3.5 m	30	10.8	7.2	6.35	81.5
Wave	Smooth	40	9.1	7.2	6.67	82.4
Mud temperature	8.7°C	50	8.6	7.0	6.36	77.7
		60	8.2	7.0	6.12	74.0
		70	8.0	6.9	4.85	58.4

		Depth	Temp. (°C)	pH	O <sub>2</sub> (cc/l)	O <sub>2</sub> (%)
Station	Ie-1	0	27.1	8.4	5.65	100.4
		1	26.9	8.4	5.38	95.2
Date	Aug. 15. 1972	2	26.85	8.4	5.76	101.9
Weather	Clear	5	26.7	8.4	5.73	101.1
Air temperature	—	10	25.5	7.4	5.30	91.2
		15	16.8	7.0	4.97	72.6
Wind direction	S	20	12.7	7.0	5.51	73.8
speed	0.2 m/sec	25	10.7	—	—	
Cloud form	KC	30	9.6	7.0	6.14	76.8
amount	2	40	8.8	7.0	6.09	74.7
Transparency	7.7 m	50	8.5	6.9	5.71	69.5
Wave	Smooth	60	8.1	6.8	4.82	58.1
Mud temperature	8.7°C	70	7.95	6.8	3.66	44.0
Station	Ie-1	0	24.5	7.7	5.35	90.5
Date	Sept. 18. 1972	1	24.5	7.7	5.36	90.7
Weather	Clear	2	24.4	7.6	5.43	91.0
Air temperature	26°C	5	24.3	7.6	5.31	89.5
Wind direction	W	10	23.8	7.5	5.17	89.3
speed	2.3 m/sec	15	16.5	7.2	4.77	69.2
Cloud form	KN	20	11.6	7.0	5.22	68.2
amount	2	25	10.6	6.9	5.76	73.6
Transparency	1.5 m	30	9.3	6.9	5.73	71.1
Wave	Gentle	40	8.7	6.8	5.75	70.4
Mud temperature	7.4°C	50	8.1	6.8	4.37	52.7
		60	8.0	6.7	3.91	47.1
		70	8.0	6.7	3.30	39.7
		(B)75	7.9			
Station	Ie-1	0	20.9	7.4	6.08	96.4
Date	Oct. 18. 1972	1	20.0	7.4	6.08	94.7
Weather	Clear	2	19.9	7.4	6.06	94.1
Air temperature	18.1°C	5	19.7	7.4	6.14	95.0
Wind direction	—	10	19.6	7.3	5.98	92.4
speed	—	15	19.6	7.2	5.98	92.4
Cloud form	CK	20	14.7	6.9	4.86	68.0
amount	4	25	10.9	—	—	
Transparency	6.1 m	30	9.9	6.9	5.43	68.3

		Depth	Temp. (°C)	pH	O <sub>2</sub> (cc/l)	O <sub>2</sub> (%)
Wave	Smooth	40	9.1	6.9	5.35	66.1
Mud temperature	8.5°C	50	8.6	6.9	5.21	63.6
		60	8.25	6.7	4.43	53.7
		70	8.00	6.7	3.32	40.0
Station	Ic-1	0	17	7.4	6.61	96.9
Date	Nov. 15. 1972	1	16	7.4	6.58	94.5
Weather	Cloudy	2	15.9	7.4	6.64	95.1
Air temperature	15°C	5	15.9	7.4	6.64	95.1
Wind direction	SW	10	15.9	7.4	6.61	94.7
speed	1.3 m/sec	15	15.9	7.4	6.58	94.3
Cloud form	S	20	15.9	7.4	6.51	93.3
amount	10	30	14.5	6.9	5.29	73.7
Transparency	5.5 m	40	9.0	6.8	4.81	59.3
Wave	Smooth	50	8.7	6.8	4.67	57.2
Mud temperature	8.5°C	60	8.4	6.8	4.38	53.2
		70	8.1	6.8	3.47	41.9
		(B)73	8.0			
Station	Ic-1	0	11.05	7.2	6.85	89.3
Date	Dec. 15. 1972	1	11.0	7.2	6.84	88.3
Weather	Clear	2	11.0	7.2	6.80	87.7
Air temperature	6.5°C	5	11.0	7.2	6.81	87.9
Wind direction	S	10	11.0	7.2	6.83	88.1
speed	0.5m/sec	15	11.0	7.2	6.75	87.1
Cloud form	C	20	10.95	7.2	6.77	87.4
amount	1	25	11.0			
Transparency	8.3m	30	11.0	7.1	6.78	87.5
Wave	Smooth	40	10.55	6.8	4.64	59.3
Mud temperautre	8.4°C	50	8.8	6.7	4.10	50.3
		60	8.5	6.7	3.98	48.5
		70	8.2	6.7	3.18	38.5
Station	Nb-2	0	7.9	7.5	8.07	96.9
Date	Jan. 13. 1972	1	7.9	7.5	8.05	96.6
Weather	Cloudy	1.5	7.9	7.5	8.08	97.0
Air temperature	9.0°C	(B)1.8				
Wind direction	NNW					

		Depth	Temp. (°C)	pH	O <sub>2</sub> (cc/l)	O <sub>2</sub> (%)
speed	3 m/sec					
Cloud form	S					
amount	10					
Transparency	0.5 m					
Wave	Smooth					
Mud temperature	—					
Station	Nb-5	0	7.9	7.6	8.15	97.8
Date	Jan. 13. 1972	1	7.9	7.6	8.16	98.0
Weather	Cloudy	2	7.9	7.6	7.81	93.8
Air temperature	8.0°C	3	7.9	—	—	
Wind direction	NW	4	7.95	7.6	8.07	97.1
speed	5 m/sec	(B)	8.1			
Cloud form	S					
amount	10					
Transparency	1.5 m					
Wave	Gentle					
Mud temperature	8.1°C					
Station	Na-3	0	7.7	7.4	7.70	92.0
Date	Jan. 13. 1972	1	7.7	7.4	7.67	91.6
Weather	Cloudy	1.8	7.8	7.4	7.67	91.9
Air temperature	8.6					
Wind direction	NW					
speed	4.5 m/sec					
Cloud form	SK					
amount	9					
Transparency	1.2 m					
Wave	Smooth					
Mud temperature	8.1°C					
Station	Nb-2	0	6.8	7.4	8.37	97.8
Date	Feb. 15. 1972	1	6.8	7.3	8.56	100
Weather	Cloudy	1.5	7.0	7.3	8.20	96.2
Air temperature	8.7°C	(B)1.8				
Wind direction	N					
speed	2.5 m/sec					
Cloud form	S					

		Depth	Temp. (°C)	pH	O <sub>2</sub> (cc/l)	O <sub>2</sub> (%)
amount	7					
Transparency	0.5 m					
Wave	Smooth					
Mud temperature	—					
Station	Nb-5	0	7.1	7.5	8.72	102.6
Date	Feb. 15. 1972	1	7.1	7.4	8.81	103.6
Weather	Cloudy	2	7.1	7.5	9.01	106.0
Air temperature	7.9°C	3.5	7.1	7.5	8.84	104.0
Wind direction	N	(B)3.7				
speed	4 m/sec					
Cloud form	S					
amount	7					
Transparency	1.7 m					
Wave	Gentle					
Mud temperature	7.1°C					
Station	Na-3	0	7.15	7.4	8.78	103.7
Date	Feb. 15. 1972	1	7.2	7.4	8.77	103.5
Weather	Clear	1.7	7.2	7.5	8.67	102.4
Air temperature	9.0°C	(B)2				
Wind direction	N					
speed	3.8 m/sec					
Cloud form	S					
amount	6					
Transparency	—					
Wave	Smooth					
Mud temperature	7.6°C					
Station	Nb-2	0	8.4	9.2	9.38	114.0
Date	Mar. 15. 1972	1	8.35	9.2	9.71	118.0
Weather	Clear	1.5	—	8.6	9.56	
Air temperature	7.4°C	(B)1.8				
Wind direction	NW					
speed	2.5 m/sec					
Cloud form	KC					
amount	7					
Transparency	0.8 m					



		Depth	Temp. (°C)	pH	O <sub>2</sub> (cc/l)	O <sub>2</sub> (%)
Wave	Rippled					
Mud temperature	—					
Station	Nb-5	0	8.45	7.6	8.41	102.4
Date	Mar. 15. 1972	1	8.45	7.6	8.35	101.7
Weather	Clear	2	8.4	7.6	8.50	103.3
Air temperature	7.0°C	3	8.5	—	—	
Wind direction	—	(B)3.9	8.2	7.8	8.52	103.0
speed	—					
Cloud form	KC					
amount	7					
Transparency	2.0 m					
Wave	Smooth					
Mud temperature	8.6°C					
Station	Na-3	0	8.8	7.3	8.00	98.2
Date	Mar. 15. 1972	1	8.75	7.3	8.10	99.4
Weather	Clear	2	8.6	7.3	8.07	98.5
Air temperature	7.6°C					
Wind direction	NW					
speed	4.3 m/sec					
Cloud form	KC					
amount	7					
Transparency	1.3 m					
Wave	Smooth					
Mud temperature	8.9°C					
Station	Nb-2	0	12.95	7.8	8.09	109.0
Date	Apr. 14. 1972	1	12.6	7.8	8.06	107.8
Weather	Clear	1.7	11.7	7.6	7.55	98.8
Air temperature	18.5°C	(B)	11.7			
Wind direction	N					
speed	0.5 m/sec					
Cloud form	—					
amount	0					
Transparency	0.4 m					
Wave	Smooth					
Mud temperature	—					

		Depth	Temp. (°C)	pH	O <sub>2</sub> (cc/l)	O <sub>2</sub> (%)
Station	Nb-5	0	11.8	7.6	8.02	105.2
Date	Apr. 14. 1972	1	11.2	7.6	7.98	102.4
Weather	Clear	2	11.2	7.6	8.04	104.1
Air temperature	18.2°C	3	11.0	—	—	
Wind direction	WSW	(B)4	10.9	7.6	7.95	102.3
speed	4.0 m/sec					
Cloud form	—					
amount	0					
Transparency	1.2 m					
Wave	Gentle					
Mud temperature	10.7°C					
Station	Na-3	0	13.45	7.5	8.00	109.0
Date	Apr. 14. 1972	1	13.30	7.6	7.99	108.4
Weather	Clear	2	12.85	7.6	8.06	108.5
Air temperature	17.4°C	(B)	12.25			
Wind direction	WSW					
speed	4.0 m/sec					
Cloud form	—					
amount	0					
Transparency	1.0 m					
Wave	Gentle					
Mud temperature	11.7°C					
Station	Nb-2	0	17.8	8.6	7.6	113.4
Date	May 12. 1972	1	17.5	8.6	7.82	115.9
Weather	Cloudy	2	17.2	8.6	7.7	113.4
Air temperature	19.7°C	(B)2.1				
Wind direction	E					
speed	0.5 m/sec					
Cloud form	SK					
amount	10					
Transparency	1.5 m					
Wave	Smooth					
Mud temperature	—					
Station	Nb-5	0	18.6	9.0	7.78	118.1
Date	May 15. 1972	1	18.6	9.0	7.77	117.9

		Depth	Temp. (°C)	pH	O <sub>2</sub> (cc/l)	O <sub>2</sub> (%)
Weather	Cloudy	2	17.7	8.8	7.86	117.0
Air temperature	18.8°C	3	17.5	—	—	
Wind direction	E	4	13.25	8.7	7.90	107.2
speed	1.8 m/sec	(B)4.5	13.00			
Cloud form	SK					
amount	10					
Transparency	1.9 m					
Wave	Smooth					
Mud temperature	16.8°C					
Station	Na-3	0	19.3	9.0	7.67	117.8
Date	May 15. 1972	1	19.3	8.9	8.02	123.2
Weather	Cloudy	2	19.2	8.8	7.45	114.3
Air temperature	19.4	(B)2.4	18.8			
Wind direction	E					
speed	1 m/sec					
Cloud form	SK					
amount	10					
Transparency	1.5 m					
Wave	Smooth					
Mud temperature	18.2°C					
Station	Nb-2	0	24.1	9.1	7.12	119.5
Date	June 16. 1972	1	22.5	9.1	7.08	115.5
Weather	Clear	2	21.9	8.8	6.59	106.5
Air temperature	26.8°C	(B)	21.9			
Wind direction	N					
speed	2 m/sec					
Cloud form	KN					
amount	5					
Transparency	1.15 m					
Wave	Smooth					
Mud temperature	—					
Station	Nb-5	0	22.85	9.2	7.19	118.1
Date	June 16. 1972	1	22.80	9.2	7.29	119.5
Weather	Clear	2	22.2	9.1	7.36	119.5
Air temperature	26.9°C	3	21.4	—	—	

		Depth	Temp. (°C)	pH	O <sub>2</sub> (cc/l)	O <sub>2</sub> (%)
Wind direction	NNE	4	21.15	8.8	6.47	103.2
speed	2.5 m/sec	(B)4.7	20.8			
Cloud form	KC					
amount	5					
Transparency	1.7 m					
Wave	Smooth					
Mud temperature	20.5°C					
Station	Na-3	0	24.15	9.3	7.17	120.5
Date	June 16, 1972	1	24.15	9.3	7.24	121.7
Weather	Clear	2	23.1	9.3	7.69	126.7
Air temperature	—	(B)	22.6			
Wind direction	N					
speed	3.8 m/sec					
Cloud form	KC					
amount	3					
Transparency	1.9 m					
Wave	Smooth					
Mud temperature	22.1°C					
Station	Nb-2	0	21.6	7.1	5.08	81.5
Date	July 18, 1972	1	22.1	7.1	5.01	81.2
Weather	Clear	2	21.5	7.0	4.46	71.5
Air temperature	27.9°C	(B)2.7	—	6.9	4.25	
Wind direction	ESE					
speed	3.5 m/sec					
Cloud form	KC					
amount	7					
Transparency	1 m					
Wave	Smooth					
Mud temperature	—					
Station	Nb-5	0	24.8	7.7	6.40	108.8
Date	July 18, 1972	1	23.5	7.8	6.08	101.0
Weather	Clear	2	22.75	7.4	5.60	91.8
Air temperature	27.4°C	3	21.9	—	—	
Wind direction	ESE	4	21.15	7.3	5.35	85.3
speed	0.5 m/sec	5	20.85	7.0	4.64	73.5

		Depth	Temp. (°C)	pH	O <sub>2</sub> (cc/l)	O <sub>2</sub> (%)
Cloud form	KC	(B)5.7	20.85			
amount	7					
Transparency	1 m					
Wave	Smooth					
Mud temperature	20.9°C					
Station	Na-3	0	24.3	7.9	6.11	103.0
Date	July 18, 1972	1	24.1	7.9	6.22	104.4
Weather	Clear	2	23.75	8.0	6.16	102.8
Air temperature	28.5°C	3	22.6	7.8	6.12	100
Wind direction	N	(B)	21.9			
speed	2 m/sec					
Cloud form	KC					
amount	7					
Transparency	1.2 m					
Wave	Smooth					
Mud temperature	—					
Station	Nb-2	0	29.85	9.4	7.50	141.9
Date	Aug. 15, 1972	1	29.5	9.4	7.60	141.0
Weather	Clear	1.5	29.0	9.4	7.76	142.6
Air temperature	31.5°C	(B)	28.95			
Wind direction	SW					
speed	0.3 m/sec					
Cloud form	KC					
amount	3					
Transparency	0.95 m					
Wave	Smooth					
Mud temperature	29.1°C					
Station	Nb-5	0	29.0	8.6	5.78	106.3
Date	Aug. 15, 1972	1	28.95	8.5	5.78	106.3
Weather	Clear	2	27.4	8.2	5.89	105.2
Air temperature	—	3	27.1	—	—	
Wind direction	SW	4	24.7	8.0	5.92	100.5
speed	1.2 m/sec	(B)	24.8			
Cloud form	KC					
amount	3					

		Depth	Temp. (°C)	pH	O <sub>2</sub> (cc/l)	O <sub>2</sub> (%)
Transparency	2.7 m					
Wave	Smooth					
Mud temperature	24.3°C					
Station	Na-3	0	29.1	9.2	7.29	134.3
Date	Aug. 15. 1972	1	28.1	9.0	6.66	120.4
Weather	Clear	2	27.95	8.6	6.58	118.8
Air temperature	31.7°C	(B)2.2	27.7			
Wind direction	SW					
speed	0.2 m/sec					
Cloud form	KC					
amount	4					
Transparency	2.2 m					
Wave	Smooth					
Mud temperature	—					
Station	Nb-2	0	24.8	8.4	6.06	103.1
Date	Sept. 14. 1972	1	24.8	8.3	6.02	102.4
Weather	Rain	1.6	24.8	8.3	6.02	102.4
Air temperature	22.7	(B)2	24.8			
Wind direction	E					
speed	2 m/sec					
Cloud form	S					
amount	10					
Transparency	1.0 m					
Wave	Smooth					
Mud temperature	—					
Station	Nb-5	0	25.2	7.7	5.46	93.5
Date	Sept. 14. 1972	1	25.2	7.8	5.56	95.2
Weather	Rain	2	25.2	7.6	5.46	93.5
Air temperature	22.1°C	4	25.2	7.5	5.52	94.5
Wind direction	E	(B)4.5	25.3			
speed	3.5 m/sec					
Cloud form	S					
amount	10					
Transparency	2.0 m					
Wave	Smooth					
Mud temperature	25.5°C					

		Depth	Temp. (°C)	pH	O <sub>2</sub> (cc/l)	O <sub>2</sub> (%)
Station	Na-3	0	25.0	7.7	5.43	92.7
Date	Sept. 14. 1972	1	25.0	7.7	5.50	93.9
Weather	Rain	2	25.0	7.7	5.45	93.0
Air temperature	21.3°C					
Wind direction	E					
speed	3.8 m/sec					
Cloud form	S					
amount	10					
Transparency	2.0 m					
Wave	Rippled					
Mud temperature	25.2°C					
Station	Nb-2	0	19.78	7.9	7.18	111.3
Date	Oct. 16. 1972	1	19.78	7.9	6.89	106.8
Weather	Cloudy	1.4	19.78	7.5	6.86	106.4
Air temperature	22°C	(B)	19.78			
Wind direction	N					
speed	4 m/sec					
Cloud form	SK					
amount	8					
Transparency	0.8 m					
Wave	Rippled					
Mud temperature	—					
Station	Nb-5	0	19.85	7.7	6.65	103.3
Date	Oct. 16. 1972	1	19.80	7.7	6.76	104.8
Weather	Clear	2	19.77	7.6	6.64	102.9
Air temperature	21.6°C	3	19.75	7.7	6.66	103.3
Wind direction	—	4	19.80			
speed	—					
Cloud form	KC					
amount	4					
Transparency	1.7 m					
Wave	Smooth					
Mud temperature	20.0°C					
Station	Na-3	0	20.5	8.6	7.38	116.0
Date	Oct. 16. 1972	1	20.4	8.6	7.41	116.3

		Depth	Temp. (°C)	pH	O <sub>2</sub> (cc/l)	O <sub>2</sub> (%)
Weather	Cloudy	2	20.2	8.8	7.62	119.1
Air temperature	21.2°C	(B)	20.15			
Wind direction	N					
speed	0.3 m/sec					
Cloud form	KC					
amount	5					
Transparency	1.9 m					
Wave	Smooth					
Mud temperature	19.4°C					
Station	Nb-2	0	14.2	7.2	6.44	89.1
Date	Nov. 15, 1972	1	14.2	7.2	6.44	89.1
Weather	Cloudy	(B)1.6	14.2	7.2	6.45	89.2
Air temperature	15.8°C					
Wind direction	N					
speed	0.5 m/sec					
Cloud form	S					
amount	10					
Transparency	1.5 m					
Wave	Smooth					
Mud temperature	—					
Station	Nb-5	0	14.8	7.6	6.98	98.7
Date	Nov. 15, 1972	1	14.8	7.6	6.95	97.3
Weather	Cloudy	2	14.8	7.6	6.99	97.9
Air temperature	15.2°C	(B)4	14.9	7.6	6.94	97.5
Wind direction	N					
speed	1 m/sec					
Cloud form	S					
amount	10					
Transparency	3.2 m					
Wave	Smooth					
Mud temperature	15.1°C					
Station	Na-3	0	14.3	7.0	6.45	89.5
Date	Nov. 15, 1972	1	14.3	7.0	6.44	89.3
Weather	Cloudy	(B)2	14.2	7.0	6.15	85.1
Air temperature	15.0°C					



		Depth	Temp. (°C)	pH	O <sub>2</sub> (cc/l)	O <sub>2</sub> (%)
Wind direction	N					
speed	1 m/sec					
Cloud form	S					
amount	10					
Transparency	1.0 m					
Wave	Smooth					
Mud temperature	14.8°C					
Station	Nb-2	0	7.1	7.2	8.34	98.1
Date	Dec. 15. 1972	1	7.1	7.2	8.47	99.6
Weather	Cloudy	1.5	7.1	7.3	8.36	98.4
Air temperature	7.3	(B)1.8	7.1			
Wind direction	S					
speed	1 m/sec					
Cloud form	SK					
amount	8					
Transparency	1.7 m					
Wave	Smooth					
Mud temperature	7.0°C					
Station	Nb-5	0	8.05	7.4	8.18	98.7
Date	Dec. 15. 1972	1	8.0	7.4	8.10	97.5
Weather	Cloudy	2	8.0	7.4	8.09	97.7
Air temperature	8.2°C	3.5	8.0	7.4	8.12	
Wind direction	SW	(B)	8.2			
speed	0.6 m/sec					
Cloud form	SK					
amount	8					
Transparency	2.8 m					
Wave	Rippled					
Mud temperature	8.9°C					
Station	Na-3	0	7.7	7.6	8.44	100.8
Date	Dec. 15. 1972	1	7.7	7.5	8.44	100.8
Weather	Cloudy	1.8	7.6	7.5	8.45	100.7
Air temperature	8.2°C					
Wind direction	SW					
speed	0.5 m/sec					

		Depth	Temp. (°C)	pH	O <sub>2</sub> (cc/l)	O <sub>2</sub> (%)
Cloud form	SK					
amount	8					
Transparency	1.9 m					
Wave	Smooth					
Mud temperature	8.0°C					

### Literature

- Horie, S., First report of the regular limnological survey of Lake Biwa (Oct. 1965-1966). V. Abiotic environment. Mem. Fac. Sci., Kyoto Univ., Ser. Biol., **1**: 95-119, 1967
- Horie, S., Second report of the regular limnological survey of Lake Biwa (1967). IV. Abiotic environment. *ibid.* **2**: 125-136, 1968
- Mori, S., Third report of the regular limnological survey of Lake Biwa (1968 and 1969). I. Abiotic environments. *ibid.* **4**: 1-28, 1970
- Mori, S., Fourth report of the regular limnological survey of Lake Biwa (1970). I. Abiotic environments. *ibid.* **5**: 1-15, 1971
- Mori, S., Fifth report of the regular limnological survey of Lake Biwa (1971). I. Abiotic environments. *ibid.* **6**: 59-74, 1972