

THE INCREASING ABUNDANCE OF THE OPOSSUM (*DIDELPHIS VIRGINIANA* SHAW)
IN NORTHERN INDIANA. BY ALBERT B. ULREY.

[ABSTRACT.]

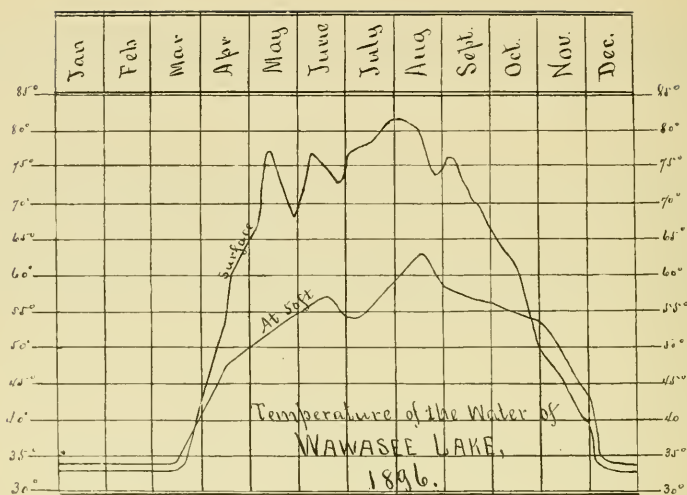
During the past year my attention has been called to the fact that an unusual number of specimens of the Common Opossum has been taken. On inquiry I found this was true not only in the immediate vicinity, but reports from other places in northern Indiana indicated a similar increase in abundance. The past few years show a somewhat progressive advance in numbers.

TEMPERATURE OF LAKE WAWASEE. BY J. P. DOLAN.

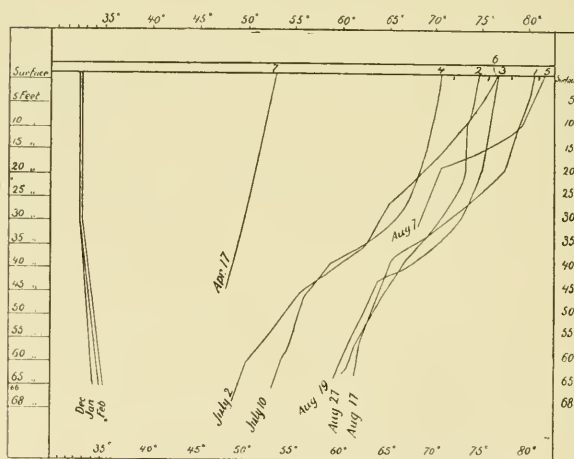
One of the problems presented in the study of the temperature was, "Does a period of stagnation obtain for any considerable period, especially during the summer months?"

It will be seen by a perusal of the tables and charts that during the winter months, when the lake is covered with ice, that there is only a slight difference between the surface and bottom temperatures, but that during the summer months there is much difference. What was only conjectured after a few months' observation last year is now conclusively shown, namely, that no condition of stagnation obtains during the summer and autumn months.

It will also be seen that, notwithstanding Lake Syracuse is forty feet shallower than Wawasee, the temperature of the former is from one to two degrees higher, both top and bottom, than the latter during the summer months.



TEMPERATURES OF LAKE WAWASEE.



Nos. 1, 2, 3, 4. N. E. Bio. Laboratory.

5. Mouth of Johnson Bay.

6. Jarrett's Bay.

7, 8, 9, 10. West of Blk. Stump Point.

TEMPERATURES OF LAKE WAWASEE.

	WEST OF BLACK STUMP POINT.					N. E. OF BIO. LABORATORY.					JOHNSON'S BAY.		JARRETT'S BAY.		CROWS BAY.	OFF CEDAR POINT	GARRS LAKE		
	Jan. 18. A. M.	Feb. 2. A. M.	Feb. 14. A. M.	Apr. 17. P. M.	June 25. P. M.	July 1. A. M.	July 10.	Aug. 17. P. M.	Aug. 19.	Aug. 27. A. M.	NORTH END.	MOUTH	July 14. P. M.	Aug. 7. A. M.	July 2.	Aug. 21. A. M.	Aug. 21.	July 20.	July 28.
Air	Deg. 35	Deg. 34	Deg. 33	Deg. 53	Deg. 86	Deg. 76½	Deg. 71½	Deg. 80	Deg. 77	Deg. 74	Deg. 91½	Deg. 88	Deg. 77	Deg. 81½	Deg. 77	Deg. 77	Deg. 82	Deg. 71½	Deg. 96
Surface	33	34	33	53	73	76½	71½	79	77	74	78½	81½	77	81½	77	77	78	71½	81
5 feet deep	33	34	33	52	72	76½	71	79	76½	73	78	79½	73½	75½	77	77	77	71	78
10 feet deep	33	34	33		71	69½	70½				77	76	73	75	76				72
15 feet deep	33½	34	33				69½				*69½								62
18 feet deep					70			78	76	73		72	70½	75	76		69½		52
20 feet deep	34	34				66½	67								75		75		51½
25 feet deep	34	34½		50			65								72		73	66	50
30 feet deep	34	34½					60½	72	71			70	65½		70		70	65	49½
35 feet deep	34	34½		49	69		56½					*69½			68		67	*64½	49
40 feet deep	34	35					55	64	64	66			62		66		66		48½
45 feet deep	34	35	33½	*48		54½	54½	63	62½				53½		59				
50 feet deep	34	35			*68	54½	54½	63	62½				50½		59				
55 feet deep	34	35				54	61½	61	61	62½			50		57½				
60 feet deep	34	35	34			53	61	61	61	61			49½		57				
65 feet deep	34	35½	34			53½		61		61					57				
66 feet deep							52½		59½						49		57		
68 feet deep																			

*Bottom.

TEMPERATURES OF SYRACUSE LAKE.

January	10	17	27	28	29	30	31	February	4	6	7	11	22	29
	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.		Deg.	Deg.	Deg.	Deg.	Deg.	Deg.
Surface	33½	34	35	35	35	35	H'v'y.	Surface	35	34	34	34	33	35
Bottom, 25 feet.....	35	36	37	37	37	37	Fog.	Bottom, 25 feet	36½	36	36	36	36	37
								15 feet.....						37

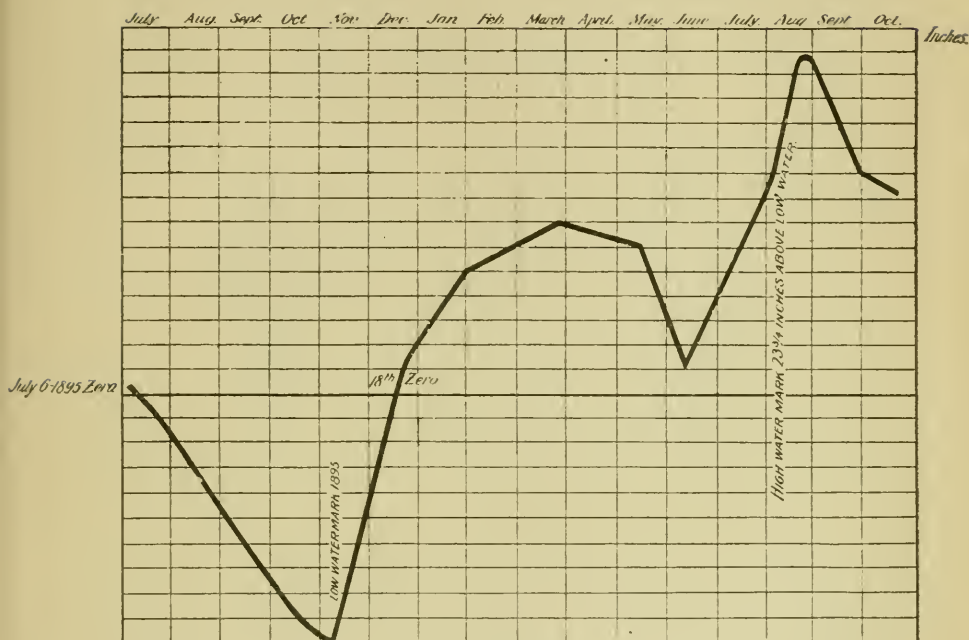
March.....	2	9	10	12	16	22	23	25	31	April	1	2	11	17	18
	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.		Deg.	Deg.	Deg.	Deg.	Deg.
Surface	35	35	34½	.....	35	.....	36	37	46	Surface	43	40	46	60	60
Bottom	36½	37	37½	.....	37	.....	38	39	45	Bottom, 25 feet	43	.....	44	54	55
15 feet.....	.....	.....	36	.....	.....	.....	36	38	41	15 feet.....	.....	.....	52	.....	.....

May	2	4	6	11	12	13	16	21	25	28	June	2	4	7	13	19
	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.		Deg.	Deg.	Deg.	Deg.	Deg.
Surface	66	67	70	75	77	76	69	68	70	68	Surface	72	74	77	72	76
Bottom, 25 feet.....	63	65	64	62	62½	63	63	66	65	66	Bottom, 25 feet.....	67	66	67	67	.....

Ice gone from lake.

Temperatures were taken at 4:30 p. m. uniformly.

RISE AND FALL OF LAKE WAWASKE FROM JULY 6, 1895, TO NOVEMBER 1, 1896.



Spaces are units of inches

Ten and one-half inches below zero of July 6, 1895, is lowest stage reached.
Thirteen and one-fourth inches above zero of July 6, 1895, is highest stage reached.

TABLE OF PRECIPITATIONS AT LAKE WAWASKE MEASURED IN RAINFALL INCHES FROM JULY, 1895, TO DECEMBER 1, 1896.

1895.	Inches.	1896.	Inches.	1896.	Inches.
July.....	2.10	January.....	1.35	July.....	8.93
August.....	3.35	February.....	1.55	August.....	5.19
September.....	1.53	March.....	2.55	September.....	4.54
October.....	1.59	April.....	2.51	October.....	.59
November.....	4.71	May.....	3.43	November.....	2.49
December.....	7.35	June.....	2.04	December.....	....

TABLE OF RISE AND FALL OF LAKE WAWASKE FROM JULY, 1895, TO DECEMBER 1, 1896.
Rise and fall measured in inches.

1895.	Loss.	Gain.	1896.	Loss.	Gain.	1896.	Loss.	Gain.
July.....	2.25	.....	January.....	.....	3.	July.....	.....	7.5
August.....	2.	.....	February.....	.....	1.	August.....	.....	4.75
September.....	2.5	.....	March.....	.....	1.5	September.....	.....	.....
October.....	3.75	.....	April.....	.....	.75	October.....	.....	.....
November.....	4.5	.....	May.....	3.00	.....	November.....	.....	.....
December.....	7.5	.....	June.....	2.25	3.00	December.....	.....	.....

Total gain, 29.75 inches; total loss, 16.50 inches; net gain, 13.25 inches.

Year.	Month.	Day.	Thickness of ice in inches.	Temperature.		Direction of Wind.	Character of the Day.	Precipitation.
				7 a.m.	5 p.m.			
1895	December...	31	1.375	10	to 34	W. S.	Clear.	
1896	January....	1	1.875	34	30	S. W.	Clear.	
		2	2.5	34	30	S. W.	Snow. Cloudy.	.09
		3	3.25	4	-2	W.	Partly cloudy.	
		4	5.5	-10	to -2	W.	Clear.	
		5	1.5	2	to 14	W.	Snow. Cloudy.	
		6	1.5	12	20	S. E.	Clear.	.01
		7	1.5	16	27	S.	Partly cloudy.	
		8	2.5	28	30	S.	Clear.	
		9	3	32	36	S. W. to W.	Cloudy.	
		10	2	33	34	W. to S.	Clear.	
		11	1.5	36		S.	Clear.	
		12	1.75	22		W.	Clear.	
		13	8	17	22	W.	Partly cloudy.	
		14	8.25	20	20	W.	Snow.	Trace.
		15	8.75	20	22	N. to E.	Clear.	
		16	9.5	12	34	S. E. to S.		
		17	10	32	38	S.		

Year.	Month.	Day.	Thickness of ice in inches.	Temperature.		Direction of Wind.	Character of the Day.	Precipitation measured in Rain.
				7 a.m.	5 p.m.			
1896	January....	18	10	36	36	S.	Snow. Rain.	.09*
		19	10	32	38	W.	Partly cloudy.	
		20	10	31	34	S. to S. W.	Cloudy.	Trace.
		21	9.5	26	30	E.	Snow. Cloudy.	Trace.
		22	9	26	32	E.	Rain.	.30
		23	.....	Rain.		E.	Rain.	.30
		24	.....	Rain, snow.		N. E.	Rain and snow.	.36
		25	.....	Rain, snow.		W.	Rain.	.10
		26	.....				Cloudy.	
		27	9.5	26	32	W.	Clear.	
		28	9.5	30	32	S. W.	Cloudy.	
		29	9.5	36	46	S.	Clear.	
		30	.....	32	56	S.	Clear.	
		31	.....	36	39	S.	Rain.	.10†
1896	February...	1	.....	39	32	W. to N. W.	Partly cloudy.	†
		2	.....	32	34	E.	Sleet. Rain.	.49
		3	.....	32	34	E.	Snow. Rain.	.07
		4	.....	29	33	S. W.	Snow.	Trace.
		5	.....	32	36	S.	Snow. Rain.	.03

* Ice badly honeycombed.

† Heavy fog from 2 to 6 p. m.

‡ From 1st to 5th the rains soften the ice without diminishing its thickness perceptibly and melts the ice at the shore line.

Year.	Month.	Day.	Thickness of Ice in Inches.	Temperature.		Direction of the Wind.	Character of Day.	Precipitation.
				7 a.m.	5 p.m.			
1896	February...	6	9	33	30	N. to N. W.	Partly cloudy.	
		7	9	27	32	N.	Cloudy.	
		8	22.5	28	32	N. W.	Snow.	*
		11	22.5	23	23	W.	High wind all day.	
		12	.....	20	26	S. E.	Snow, 6 inches.	.63
		13	.....	22	28	N.	Snow, 1 inch.	.05
		15	9	40	30	S. to N.	Snow, cloudy.	Trace
		17	10	-1	20	N.	Clear.	
		18	11	22	22	N. W.	Snow, 2 inches.	.20
		19	.....	6	0	W.	Snow, blizzard.	.02
		20	.....	-12	8	W.	Snow, blizzard.	Trace
		21	11.5	-12	20	W.	Snow, blizzard.	
		22	12	18	40	S. to S. W.	Partly cloudy.	
		25	12	20	34	N. to S. W.	Clear.	†
		26	.....	34	46	W.	Balmy, clear.	
		27	11	44	58	S.	Clear.	‡

*Ice growing strong and hard.

†Rain, 1 inch; fog on 23d.

‡Ice honey-combed.

Year.	Month.	Day.	Thickness of Ice in Inches.	Temperature.		Direction of the Wind.	Character of Day.	Precipitation in Rainfall, Inches.
				7 a.m.	5 p.m.			
1896	March.....	1	11	28	26	N.	Snow.	.45
		5	.....	24	38	N. to E.	Rain, partly cloudy.	.35
		6	.....	38	35	S. to N. W.	Snow.	Trace
		9	10	30	40	W. to E.	Snow, cloudy.	.15
		10	10	34	33	N. to N. E.	Snow, cloudy.	.10
		11	.....	24	20	N. E. to N.	Snow, 2 3/4 inches.	.21
		12	12	1	15	W.	Snow squalls all day.	.01
		13	14	10	18	W.	Clear.	
		14	13	10	28	W.	Clear.	
		15	.....	24	30	S. E.	Snow, 1 3/8 inches.	.10
		17	12	26	36	W.	Snow, clear most of day.	
		18	.....	32	36	S. W. to S. E.	Snow, cloudy.	Trace
		19	.....	32	32	N.	Snow and high wind.	.22*
		23	10	28	33	N. to N. E.	Snow, 1/2 inch.	.03
		25	8	36	60	S. to S. W.	Cloudy, rain.	
		26	8	32	30	N. W. to N.	Snow.	†
		27	.....	26	38	S. E.	Clear.	†
		28	.....	36	56	S.	Rain, th'd'r and lightn'g.	.71
		29	.....	48	62	S. W.	Clear.	‡

*High wind all day and night.

†Ice bursting and disintegrating.

‡Ice honey-combed and fractured.

§Ice driven out of lake.