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Meteorological Record
of
Harvard College Observatory
for the years
1872, 1873, 1874, 1875, 1876, 1877.

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Reduction of English barometer to freezing point

	29.5	29.6	29.7	29.8	29.9	30.0	30.1	30.2	30.3	30.4	30.5
11	+.046	046	046	047	047	+047	047	047	048	048	+048
12	.044	044	044	045	045	045	045	045	045	045	045
13	.041	041	041	042	042	042	042	042	043	043	043
14	.038	038	038	039	039	039	039	039	040	040	040
15	.036	036	036	036	036	036	036	037	037	037	037
16	.033	033	033	033	034	034	034	034	034	034	034
17	031	031	031	031	031	031	031	032	032	032	032
18	028	028	028	028	028	028	028	029	029	029	029
19	025	025	025	026	026	026	026	026	026	026	026
20	023	023	023	023	023	023	023	023	023	023	023
21	020	020	020	020	020	020	020	021	021	021	021
22	018	018	018	018	018	018	018	018	018	018	018
23	015	015	015	015	015	015	015	015	015	015	015
24	012	012	012	012	012	012	012	012	012	012	012
25	009	009	009	009	009	009	009	010	010	010	010
26	007	007	007	007	007	007	007	007	007	007	007
27	004	004	004	004	004	004	004	004	004	004	004
28	+001	001	001	001	001	+001	001	001	001	001	+001
29	−001	001	001	001	001	−001	001	001	001	001	−001
30	004	004	004	004	004	004	004	004	004	004	004
31	007	007	007	007	007	007	007	007	007	007	007
32	009	009	009	009	009	009	009	010	010	010	010
33	012	012	012	012	012	012	012	012	012	012	012
34	015	015	015	015	015	015	015	015	015	015	015
35	017	017	017	017	018	018	018	018	018	018	018
36	020	020	020	020	020	020	020	021	021	021	021
37	022	022	022	022	023	023	023	023	023	023	023
38	025	025	025	025	026	026	026	026	026	026	026
39	028	028	028	028	028	028	028	029	029	029	029
40	030	030	030	030	031	031	031	031	031	031	031
41	033	033	033	033	034	034	034	034	034	034	034
42	036	036	036	036	036	036	036	037	037	037	037
43	038	038	038	039	039	039	039	039	040	040	040
44	041	041	041	041	042	042	042	042	042	042	042
45	044	044	044	044	044	044	044	045	045	045	045
46	046	046	046	047	047	047	047	047	048	048	048
47	049	049	049	049	050	050	050	051	051	051	051
48	052	052	052	052	052	052	052	053	053	053	053
49	054	054	054	055	055	055	055	055	056	056	056
50	057	057	057	058	058	058	058	058	059	059	059
51	059	059	059	060	060	060	060	060	061	061	061
52	062	062	062	063	063	063	063	063	064	064	064
53	065	065	065	066	066	066	066	066	067	067	067
54	067	067	067	068	068	068	068	069	069	069	070
55	070	070	070	071	071	071	071	071	072	072	072
56	073	073	073	074	074	074	074	074	075	075	075
57	075	075	075	076	076	076	076	077	077	077	078
58	078	078	078	079	079	079	079	080	080	081	081
59	080	080	081	081	081	082	082	082	082	083	083
60	083	083	084	084	084	085	085	085	086	086	086
61	086	086	086	086	087	087	087	088	088	088	089
62	088	088	089	089	089	090	090	090	091	091	091
63	091	091	092	092	092	093	093	093	094	094	094
64	094	094	094	095	095	095	096	096	097	097	097
65	096	096	096	097	097	098	098	099	099	100	100
66	099	099	100	100	100	101	101	101	101	102	102
67	102	102	102	103	103	103	104	104	104	105	105
68	104	104	105	105	106	106	106	107	107	108	108
69	107	107	108	108	108	109	109	109	110	110	110
70	109	109	110	110	111	111	112	112	112	113	113
71	112	112	113	113	114	114	114	115	115	116	116
72	115	115	116	116	117	117	117	118	118	119	119
73	117	117	118	118	119	119	119	120	120	121	121
74	120	120	120	121	121	122	122	123	123	124	124
75	122	123	123	124	124	125	125	126	126	127	127
76	125	125	126	126	127	127	127	128	128	129	129
77	128	128	129	129	130	130	130	131	131	132	132
78	130	131	131	132	132	133	133	134	134	135	135
79	133	133	134	134	135	135	135	136	136	137	137
80	136	136	137	137	138	138	138	139	139	140	140

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Reduction of English barometer to freezing point

	29.5	29.6	29.7	29.8	29.9	30.0	30.1	30.2	30.3	30.4	30.5
11	+.045	046	046	047	047	+047	047	047	048	048	+048
12	.044	044	044	045	045	045	045	045	045	045	045
13	.041	041	041	042	042	042	042	042	043	043	043
14	.038	038	038	039	039	039	039	039	040	040	040
15	.036	036	036	036	036	036	036	037	037	037	037
16	.033	033	033	033	034	034	034	034	034	034	034
17	031	031	031	031	031	031	031	032	032	032	032
18	028	028	028	028	028	028	028	029	029	029	029
19	025	025	025	026	026	026	026	026	026	026	026
20	023	023	023	023	023	023	023	023	023	023	023
21	020	020	020	020	020	020	020	021	021	021	021
22	018	018	018	018	018	018	018	018	018	018	018
23	015	015	015	015	015	015	015	015	015	015	015
24	012	012	012	012	012	012	012	012	012	012	012
25	009	009	009	009	009	009	009	010	010	010	010
26	007	007	007	007	007	007	007	007	007	007	007
27	004	004	004	004	004	004	004	004	004	004	004
28	+001	001	001	001	001	+001	001	001	001	001	+001
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	−001	001	001	001	001	−001

Note of a meteor Nov. 8, 1877.

Note of a meteor Nov. 1, 1877.

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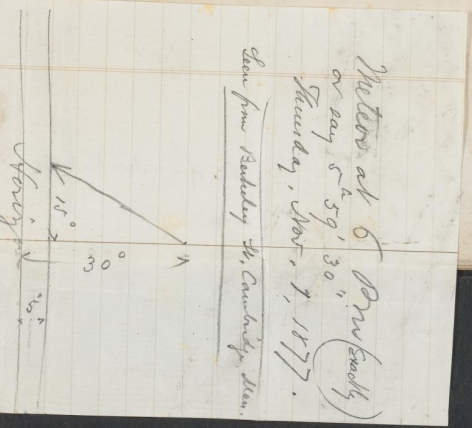
Reduction of English barometer to freezing point

	29.5	29.6	29.7	29.8	29.9	30.0	30.1	30.2	30.3	30.4	30.5
11	+.045	.046	.046	.047	.047	+.047	.047	.047	.048	.048	+.048
12	.040	.044	.044	.045	.045	.045	.045	.046	.045	.045	.045
13	.041	.041	.041	.042	.042	.042	.042	.042	.043	.043	.043
14	.038	.038	.038	.039	.039	.039	.039	.039	.040	.040	.040
15	.036	.036	.036	.036	.036	.036	.038	.037	.037	.037	.037
16	.033	.033	.033	.033	.034	.034	.034	.034	.034	.034	.034
17	.031	.031	.031	.031	.031	.031	.031	.032	.032	.032	.032
18	.028	.028	.028	.028	.028	.028	.028	.029	.029	.029	.029
19	.025	.025	.025	.026	.026	.026	.026	.026	.026	.026	.026
20	.023	.023	.022	.023	.023	.023	.023	.023	.023	.023	.023
21	.020	.020	.020	.020	.020	.020	.020	.021	.021	.021	.021
22	.018	.018	.018	.018	.018	.018	.018	.018	.018	.018	.018
23	.015	.015	.015	.015	.015	.015	.015	.015	.015	.015	.015
24	.012	.012	.012	.012	.012	.012	.012	.012	.012	.012	.012
25	.009	.009	.009	.009	.009	.009	.009	.010	.010	.010	.010
26	.007	.007	.007	.007	.007	.007	.007	.007	.007	.007	.007
27	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004
28	+.001	.001	.001	.001	.001	+.001	.001	.001	.001	.001	+.001
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

A meteor flashed out on Wednesday evening Nov. 8. last, about 6 o'clock in the northern sky, which made a long brilliant track and lasted fully five seconds. [North Cambridge correspondent of Cambridge Chronicle. Sat. Nov. 10. 1877.]

Meteor at 6 P.M. (exactly) or say 5h 59' 30" Thursday, Nov. 7, 1877. seen from Bedford St, Cambridge Mass.



Meteorological Record of Harvard College Observatory

(latitude 42° 22' 48.6" north; longitude 4h 44m 30.85s west of Greenwich)

for the years

1872, 1873, 1874, 1875, 1876, 1877.

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Meteorological Record of Harvard College Observatory

(latitude 42° 22′ 48″.6 north: longitude 4ʰ 44ᵐ 30ˢ.85 west of Greenwich)

for the years

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Observations for error of psychrometer, May to December inclusive, 1876, made when both bulbs seemed dry.

Reading of No. 4		Uncovered bulb — No. 4		No. 4 — covered bulb	
12.0 to	12.9	1.2		0.5	
16.0	16.9	0.8		0.9	
24.0	24.9	1.5		0.3	
26.0	26.9	1.3		0.6	
27.0	27.9	1.7		0.3	
28.0	28.9	1.4		0.6	
		1.0		0.8	
29.0	29.9	1.4		0.4	
31.0	31.9	1.0		0.9	
		1.1	1.34	0.9	0.62
33.0	33.9	1.4		0.4	
34.0	34.9	1.3		0.7	
		1.5		0.4	
		1.2		0.9	
36.0	36.9	1.6		0.5	
		1.2		0.7	
		1.2		0.8	
37.0	37.9	2.4		−0.2	
38.0	38.9	1.6		0.4	
39.0	39.9	1.4	1.48	0.7	0.53
40.0	40.9	1.5		0.4	
		0.9		1.1	
41.0	41.9	1.8		0.3	
42.0	42.9	1.4		0.5	
		1.1		0.8	
43.0	43.9	1.9		1.0	
44.0	44.9	1.5		0.5	
		1.4		1.7	
45.0	45.9	0.5		0.8	
		1.0	1.30	0.7	0.78

Reading of No. 4		Uncovered bulb — No. 4		No. 4 — covered bulb			
48.0 to	48.9	1.4		0.5			
49.0	49.9	0.7		0.9			
51.0	51.9	1.2		1.1			
53.0	53.9	1.0		0.7			
		1.1	1.08	0.7	0.78		
54.0	54.9	1.1		0.3		1.20	0.52
		1.1		0.5			
		1.1		0.1			
		1.4		0.3			
		1.6	1.26	0.4	0.32		
55.0	55.9	0.8		0.6			
		1.1		0.6			
		2.0	1.30	0.0	0.40		
56.0	56.9	1.0		0.5			
		1.1		0.4			
		1.3		0.7			
		1.2		0.7			
		0.9		0.9			
		1.4	1.38	0.6	0.76		
57.0	57.9	0.5		0.6			
		0.5		1.1			
		0.8	0.60	1.1	0.93		
58.0	58.9	1.6		−0.1		1.00	0.67
		1.4		0.5			
		1.2		0.7			
		1.6	1.45	0.5	0.40		
59.0	59.9	1.0		0.5			
		0.9		0.7			
		1.0	0.97	1.0	0.73		
60.0	60.9	0.9		0.3			
		0.0		1.6			
		0.6		0.9			
		1.0	0.62	0.3	0.78		

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Abbreviations in use for remarks on the general character of the weather.

(These abbreviations were decided upon early in 1871. Some of them have been seldom or never used: others have been commonly used in the meteorological record.)

A after
B about
C {continuing / constantly}
D daylight
E early
G {midnight / end of civil day}
H thin
I sunrise
K thick
L late
M moderate
N noon
Q subsequently
R rather
S {some / somewhat}
T till
U sunset
V violent
Y nearly

$\overline{N}$ before noon
$\underline{N}$ after noon
(so with the other capital letters)
$\frac{10}{}$ ten o'clock A.M.
$\frac{}{4}$ four o'clock P.M.
etc.
↑ north ↗ northeast, etc.

a {rain / rainy}
b brisk
c chilly
d cold
e heavy
f fog, foggy
g gentle
h hot
i mild
l cool
m {mist / misty}
n {wind / windy}
q {squall / squally / squally}
r clear
s {snow / snowy}
t strong
u sultry
v variable
w warm
y {clouds / cloudy}
z {haze / hazy}

$\underline{y}$ very cloudy
$\underline{d}$ very cold
(so with other small letters)
y < clouds increasing
d < growing colder
d > cold abating
etc.

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Account of Poey's system of cloud nomenclature as employed at Harvard College Observatory.

Clouds are divided into those of a cumulus or cirrus character according to their flocculent or fibrous appearance. Cirro-cumulus clouds, as in Howard's system, are small flocculent clouds arranged in lines in such a way as to appear to have originated from cirri.

Cumulus Clouds proper are those with definite outline, at least above.

Pallio-cumulus clouds have indefinite outlines and may extend over the whole sky.

Fracto-cumulus clouds are fragments of pallio-cumulus.

Cirrus, ~~clouds~~, as in Howard's system, are curved wisps of fibrous cloud.

Cirro-stratus clouds are apparently fibrous, but more compact and straighter than simple cirrus.

Pallio-cirrus clouds are indefinite aggregations of cirrus or cirro-stratus. [Poëy does not recognize fracto-cirrus, although such a form seems not unusual here.]

The abbreviations of these names in use here are as follows.

Cumulus	M	Cirrus	R
Pallio-cumulus	Pm	Cirro-stratus	Rs
Fracto-cumulus	Fm	Pallio-cirrus	Pr
Cirro-cumulus	Rm		

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Notes on the state of the meteorological department of Harvard College Observatory at the beginning of the year 1872.

Records of former observations and Places of observation

Records of meteorological observations, more or less complete, beginning with August 1839, exist at this Observatory, and are kept at present in a drawer on the north side of the room over the Library (S.W. corner of west wing of Observatory building, 2d story.) These observations were first made at Dorchester, afterwards at the old Observatory in the College Yard at Cambridge, and finally, at the present Observatory, with a few made at neighboring places, and noted as such. The records are on large sheets, some of them bound up.

More recent records, (for 1866 and following years,) are kept in the Clock Room, west of the East wing of the Observatory building, and east of the East Transit Room. (These records are in quarto books, some of the originals being in small diaries.)

Directors of the Observatory, and meteorological observers

Prof. W. C. Bond, and subsequently Prof. G. P. Bond, the first and second Directors of the Observatory, probably made many of the early meteorological observations. Some were made by their assistants; in particular, Mr. A. MacConnel made many such observations. It perhaps does not appear from the record what observations were made by each observer. Prof. J. Winlock became Director of the Observatory in the spring of 1866, and the meteorological observations made since then have been under his direction. Most of these observations made previous to April 1, 1868 were made by G. M. Searle and E. P. Austin; from that time to June 1869 the observers were generally E. P. Austin and A. Searle; and since then A. Searle has made most of the observations. The observation at 7 A.M., since early in 1866, has been usually made by Bridget Henry,

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who has also made some other observations, especially those of rainfall before 1869. O. C. Wendell, and Hol Jannett have made several observations. The observations made before 1872 cannot readily be assigned to individual observers.

Instruments. (See notes on the sheet of observations for Sept., 1862)

Nothing is known of the instruments used in the earlier observations except what may be found in the records of them. The standard thermometer was not Observatory property and was removed before Prof. Winlock took charge of the Observatory. Since 1866 the instruments in use have been as follows, according to a memorandum made in the volume containing the copy of the observations for 1870 and 1871. [Some remarks are added here.]

Barometer

J. Newman, No. 57. Diameter of tube 0.512 inches. This instrument has a metal scale, and an ivory point to make contact with the mercury in the cistern. It was in use previous to 1866, when Prof. Winlock took charge of the Observatory. It has not since then been compared with other standard barometers. In 1868 and for an unknown time previous the barometer was placed on the north wall of the East Transit Room. During 1869 it was removed to the north wall of the Clock Room, west of the window, with its cistern about 2 feet 6 inches from the floor. The vernier is evidently somewhat inaccurate, the surface of the mercury in the cistern is much oxidized, and the light is insufficient for accurate readings. Owing to these causes, and to the fact that although the instrument is mounted fairly well, the verticality of the tube and cistern have not been carefully tested, it is clear that the reading of thousandths of an inch with any certainty is very unlikely.

Thermometers (all with Fahrenheit scale)

That attached to the barometer is a small instrument near the lower end of the barometer tube. It has not been compared, since 1868 at least, with other thermometers.

External Thermometer No. 4

The standard external thermometer is by Bond & Son. It is called No. 4, and has a figure 4 scratched on its scale. It was at the Observatory when Prof. Winlock took charge of it, but had not always been the standard thermometer employed there previously. It has been placed, at all events since 1867, under a small shelter just outside the north window of the East Transit Room.

Cas. 3235

Casella 3235, a thermometer with a longer scale, and formerly compared with the standard at Kew (see certificate pasted into meteorological record for 1866, 1867, 1868), from which it differed nowhere over 0.2 of a degree, was frequently compared with No. 4 during 1872, with results which will be found in the record. On Dec. 29, 1872, it was placed in a bucket of ice and water in the East Transit Room, where the temperature of the air was about 32.5 degrees of Fahrenheit, and then read 32.7.

Psychrometer

The psychrometer consists of a dry and a wet bulb thermometer, both made by Green of New York about 1866. The numbers of the instruments and many of the figures of the graduation seem illegible. These thermometers are fixed beside No. 4. The wet bulb thermometer is not kept constantly wet, but the rag about its bulb is wetted some time before the observation. Comparisons were made during 1872 between the dry and wet bulb thermometers, which will be found in the record.

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Thermometers (continued)

Minimum — The minimum thermometer is mounted horizontally under the same shelter with No. 4 and the psychrometer. It is by J. Green, and contains alcohol with an immersed index. During 1872 it was compared, after setting with No. 4. The results appear in the record.

Maximum — The maximum thermometer in use in 1868 and for some time previous was by J. Green; mercurial, with tube contracted near the bulb, mounted horizontally near the minimum. No comparisons exist of this with other instruments. It was broken Aug. 6, 1871, during the absence of the regular observer. Replaced by Casella 9417, a small traveller's instrument which soon (Nov. 1871) ceased to keep to the maximum point. There are some comparisons of this instrument with No. 4 in the record for 1870 and 1871, near the end.

Casella 13399 — Maximum thermometer, Casella 13399 set up Jan. 30, 1872, below the minimum and under the same shelter. It is mercurial, the column divided by a bubble of air. It is fixed horizontally, and is set by being taken down and swung in the hand, so that after setting it generally reads too high, and the readings after setting given in the record do not show its true relation to No. 4.

Solar thermometer — L. Casella No. 9484, Blackened bulb in glass case with air exhausted. Mounted horizontally 7 inches from ground on grass near edge of bank just south of central tower of Observatory. The mercury in it is divided by a bubble of air. Received in January 1869.

Anemometer — The force of the wind has been estimated in miles per hour in the observations made under Prof. Winlock's direction. Two anemometers of the Robinson pattern have been in use at times, but their performance has never been very good, and they have been mostly in disadvantageous situations. There are notes on these instruments on the first pages of the volume for 1870 and 1871.

Vane — Since Prof. Winlock took charge of the Observatory, a vane was procured, and connected with a registering apparatus, which however was generally out of order. The vane was first mounted on the barn afterwards on the west wing of the Observatory building. Its situation was rather disadvantageous in both cases, and its indications are not always correct. See remarks on it in the volume for 1870 and 1871.

Rain gauges — There are various notes on these instruments in the volume for 1870 and 1871. Many gauges were tried between 1868 and 1872. At the close of 1871 two gauges were in use. Gauge A is a funnel on the roof of a shed north of the Clock Room, with a pipe leading to a bucket or bottle inside the shed. It is examined from time to time, being considered mainly useful as a check on Gauge C, which last is more exposed to being meddled with by mischievous persons. The water from gauge A is weighed in avoirdupois ounces, the number of which is divided by 115.59 (ar. co. log. 115.59 = 7.93708) to find the rainfall in inches.

Gauge C is by L. Casella. It is partly sunk in the ground west of the Observatory, so that the top of the funnel, which is 5 inches across, is about 7 inches above ground. The funnel is circular. This gauge, since August 1871, was examined daily at 10 A.M., the water being generally measured by a glass received with the gauge, but sometimes weighed in avoirdupois ounces, the number of which is divided by 11.33 (ar. co. log. divisor being 8.94575) to find the rainfall in inches.

Nomenclature of clouds — The names given to the clouds were those of Howard, until Oct. 17, 1870; after which Poëy's system was used. For an account of it see the first pages of this volume.

The quantity of cloud is estimated from 0 (clear sky) to 10 (sky wholly cloudy).

Abbreviations — For abbreviations of remarks upon the weather see the first pages of the volume for 1870 and 1871, and of this volume.

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January 1872. Meteorological Record of

Date	Barometer	Attached Thermometer	Casella 3235	No. 4	Minimum after setting	Bychrometer Dry bulb	Wet bulb	Relative Humidity Guyot's Tables	Wind	Clouds
1	30.217	70.6				44.1	42.1	84	4e W	10 Pr Pm Rm
2	30.622	65.1				25.8	22.2	56	8 N	0 Pr
3	30.550	61.4				23.6	21.6	74	6 N	10 Pm Pr
4	29.956	55.2	39.8	39.5	39.0	40.2	39.1	90	0 calm	10 Pm, mist (raining)
5	(29.924)	(66.2)	(37.0)	(36.6)	(36.0)	(37.7)	(34.0)	(65)	(12e N)	(10 Pr Pm Fm)
6	29.730	64.5	34.9	34.1	34.0	35.4	31.4	63	6e W	0 Pm
7	30.169	45.7	4.0	3.4	3.2	4.8	2.3	37	18e N	0
8	30.369	56.9	15.0	14.4	14.2	15.8	13.0	52	3 NW	4 R Rs
9	30.154	55.3	‡19.6	‡18.5	18.8	20.5	16.3	40	0 NW	5 Pr
10	30.117	63.0	31.6	31.1	30.6	32.0	27.5	54	9 NW	3 Rm Pr Rs
11	30.130	63.1	26.6	26.0	25.6	27.2	25.2	76	0 N	0 Pr haze
12	29.750	64.0	40.9	40.4	40.0	41.5	33.8	36	15e W	3 M Fm
13	29.768	65.2	39.6	39.0	38.3	40.3	34.3	48	0 SW	10 Pr
14	29.975	62.4	20.9	20.8	20.2	21.7	18.0	49	10e N	10 Pr Rs
15	30.121	55.0	10.2	9.7	9.6	11.0	8.0	33	4e N	0
16	30.179	67.0	18.6	18.0	17.5	19.3	16.7	61	0 N	10 Pr
17	29.974	52.6	19.6	19.0	18.7	20.1	18.4	73	10e N	10 Pr (snowing)
18	29.986	57.3	21.8	21.1	20.8	22.3	18.1	43	5e NW	2 Pr Rs Rm
19	30.199	64.0	29.8	29.3	28.9	30.4	27.2	66	1e W	2 Pr Rs
20	29.660	66.8	34.9	34.6	34.0	35.6	34.4	87	1e NW	10 Pr Pm
21	(29.828)	(63.4)	(34.3)	(33.5)	(33.3)	(34.9)	(30.4)	(58)	(6e W)	(0 Pr)
22	29.954	63.8	33.5	32.7	32.5	34.1	28.3	45	8e SW	5 Pr R Rs
23	29.609	65.4	38.5	37.9	37.4	39.1	34.4	57	6e S	2 Pm Fm Rs
24	29.734	58.7	16.1	15.8	15.3	16.8	13.4	44	9e N	7 Pr Rm
25	29.774	54.7	20.0	19.6	19.3	20.8	17.0	45	10e W	6 Fm
26	29.679	56.7	19.5	18.8	18.3	20.0	15.8	39	7e W	0 Fm
27	29.774	54.9	25.0	24.1	24.1	25.8	20.8	39	7e W	8 Pr R Rs Rm
28	29.710	67.0	25.4	25.4	24.5	26.0	24.1	76	3e N	10 Pr (snowing)
29	29.485	61.3	24.8	24.7	24.0	25.4	24.2	84	4e N	10 Pr (snowing)
30	30.128	54.2	12.6	12.0	11.6	13.4	10.9	54	6e W	0
31	(30.142)	(53.1)	(15.9)	(15.3)	(15.0)	(16.7)	(13.6)	(48)	(6e W)	(0)
1	30.327	68.8				39.3	33.4	47	9 N	10 Pr Rm
2										
3	30.449	64.0	23.8	23.4		24.4	22.0	69	3e N	10 Pr
4	29.987	67.0	35.3	35.0		36.0	34.8	88	8 N	10 Pm fog
5	29.812	65.1	39.6	39.1		40.0	35.6	61	8e N	10 Pm
6	29.724	65.5	39.6	39.1		40.0	34.0	48	13 NW	9 Pm M
7										
8	30.296	65.9	30.0	29.6		30.5	23.0	30	5 NW	4 R Rs
9	30.049	66.1	36.0	35.4		36.3	30.1	45	4 NW	9 R Rs Rm
10										
11										
12	29.826	63.4	42.7	42.1		43.1	34.1	28	15e W	0
13	29.708	68.4	43.6	42.9		44.0	35.8	34	0 SW	2 Pr Rm R
14	30.016	68.5	17.9	17.7		18.7	14.9	44	6e N	5 Pr Rs R
15	30.045	64.9	21.1	20.7		21.8	16.8	31	1e N	0
16	30.110	59.4	27.6	27.0		28.0	24.3	57	7 E	10 Pr Pm Fm
17										
18	29.986	59.1	27.1	26.8		27.9	23.9	54	6e W	10 Pr M Rs
19	30.110	59.2	36.9	36.6		37.1	32.1	53	0 W	10 Pr
20	29.576	66.3	40.9	41.5		42.5	36.7	52	5e W	8 Pr R Pm
21	29.769	68.8	37.6	37.0		38.0	32.0	45	3e NW	0 Pm Fm
22	29.832	64.3	35.5	34.9		35.9	30.1	48	5e SW	7 R Pm Fm Rm
23	29.667	67.7	35.1	34.6		35.6	29.0	40	8e NW	5 Pr Rs R Pm
24	29.709	67.4	20.2	19.9		20.9	16.3	35	12e N	5 Rs R Fm
25	29.676	63.6	23.4	22.8		23.9	18.6	32	10e W	4 Pr Fm
26	29.642	59.3	24.6	24.1		25.0	19.7	34	1e W	0 M Fm
27	29.746	62.3	30.8	30.4		31.1	24.5	32	5e W	4 Pr R Rm
28	(29.650)	(64.3)	(28.6)	(28.0)		(28.9)	(25.6)	(63)	(0 calm)	(3 Pr R Rs)
29	29.583	68.3	14.6	14.2		15.6	13.8	69	15 NW	10 Pr
30	30.132	59.2	18.6	18.1		19.0	15.0	39	5e NW	0
31										

10 A.M.

4 P.M.

Sums and means, with reduction of barometer to freezing point.

	10 A.M.	4 P.M.
Barometer	929.367	747.427
	29.980	29.807
	− .086	− .006
	29.894	29.801
Att. Therm.	1874.5	1616.8
	60.5	64.7
Casella 3235	710.4	731.1
	25.4	30.5
No. 4	695.3	720.9
	24.8	30.0
Min. after set.	684.7	
	24.5	
Dry bulb (same grouped 3235 & No. 4)	728.8	744.2
	26.0	31.0
Relat. Humid.	1776	1178
	57	47
Wind	184	160
	5.9	6.4
Clouds	157	144
	5.1	5.8

See note of July, 1872, on state of bychrometer

Rain gauge A, on west of shed N. of Clerk Room.

Date	Time	Ounces	Inches.
1	12M	27¼	0.236
4	4PM	78	0.675
20	4½P.M.	87¾	0.759

Area exposed by gauge A 200.31 inches

Ar. co. log. divisor 7.93708

Diameter of cylindrical glass used in measuring snow 1⅞ in. Ar. co. log. divisor of no. of avoirdupois ounces obtained, 9.79770

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Harvard College Observatory. January 1872.

Date	External Thermometer No. 4 7 A.M.	2 P.M.	9 P.M.	Mean	Casella 3235 2 P.M.	9 P.M.	Maximum after setting	Extreme temperatures: Maximum set at 9 P.M.	Minimum set at 10 A.M.	Solar Maximum set at 4 P.M.	Solar thermometer after setting	Inches of rainfall at 10 A.M. to nearest 0.005	Remarks. For explanation of abbreviations, etc. see first pages of this volume.
1		39.9	32.8						18.0	61.3	38.8	0.015	y Rw Sd U.
2	20.2	27.1	[20.0]	22.4					19.0			0.000	v Rd y< A8.
3	20.4	22.5	23.8	22.2		24.1			18.0	93.1	25.1	0.000	yc. Sleet beginning about 8 P.M. Rain later.
4	37.5	35.6	[34.8]	36.0	35.9				21.6	50.1	35.7	0.640	y Rw A little rain at times.
5	33.8	39.7	[32.6]	35.4	40.0				(33.4)	50.9	40.3	(0.067)	yw v U.
6	27.5	(39.8)	[24.8]	30.7	(40.0)				27.0	102.2	46.7	0.000	v rd< U. Auroral Arch at 11 P.M.
7	2.2	(7.4)	11.7	7.1	(8.0)	12.3			1.8			0.000	rd
8	8.5	28.6	19.6	18.9	29.0	20.0			3.2	97.2	49.2	0.000	Rrd
9	10.5	35.2	29.1	24.9	35.9	29.8			10.0	102.1	52.0	0.000	vl. Rather cloudy 7 to 9 P.M.
10	28.0	(34.8)	30.8	31.2	(35.2)	31.0			18.7			0.000	vl Rr U.
11	20.3	36.2	[31.7]	29.4	36.8	[32.1]			19.7	102.9	79.8	0.000	vl Ry U.
12	38.2	43.2	[36.1]	39.2	43.8	[37.0]			25.5	105.7	61.4	0.000	Rrw Sy A10.
13	31.8	44.8	[36.2]	37.6	44.9	[36.8]			31.9	99.6	66.0	0.000	Swy s< U.
14	26.0	20.0	[9.9]	18.6	20.0	[10.4]			20.2	87.0	33.5	0.000	yd vU.
15	3.8	19.3	15.9	13.0	19.9	16.2			3.9	91.7	67.0	0.000	Rrd Sz U.
16	13.5	27.6	23.1	21.4	28.0	23.5			9.5	72.3	30.3	0.000	yc. A little snow towards night.
17	16.3	(21.7)	20.9	19.6	(21.9)	21.2			16.2			0.060	yc. Some snow. Cleared off about 10 P.M.
18	18.8	27.5	[22.8]	23.0	28.0	[23.3]			14.4	110.0	31.2	0.030	v Rc. Rather clear 7½ to 10½ P.M. {Most 0.5 inches snow on the ground}
19	27.3	*37.3	33.1	32.6	*37.0	33.7			19.4	92.1	39.3	0.000	Ryc. Sleet in the evening, afterwards rain.
20	33.5	*41.0	37.2	37.2	*40.8	37.8			28.8	101.8	50.4	0.750	yw y= Rz U.
21	28.7	38.8	30.4	32.6	39.0	30.9			(28.5)	110.6	67.9	(0.000)	rw
22	27.0	35.9	31.2	31.4	36.3	31.7			26.3	104.0	51.8	0.000	yw Sz N Rzy U.
23	32.8	42.6	26.5	34.0	43.0	27.0			30.6	106.0	74.0	0.000	Rrw
24	15.0	(20.1)	[18.6]	17.9	(20.7)	[19.2]			13.9	91.0	45.9	0.000	d Rc
25	12.8	23.5	†17.8	18.0	23.9	†18.0			8.6	89.8	57.2	0.000	d Rc
26	16.0	24.1	20.1	20.1	24.8	20.7			12.6	94.2	55.4	0.000	dc. y< U.
27	16.8	31.4	[25.5]	24.6	31.7	[26.3]			13.9	100.8	55.0	0.000	Ryc y< U.
28		(*29.3)	26.0		(*29.0)	26.4			22.5	(85.8)	(24.4)	0.020	yds y> A2. y< U. A little snow early.
29	20.0	13.4	11.1	14.8	13.7	11.7			19.8	65.2	28.3	0.030	ysd< yd N. vU. {Snowing hard much of the middle of the day. Cleared off about 6 P.M.}
30	5.2	17.7	(16.0)	13.0	18.0	(16.4)	(§18.0)	(§18.3)	5.2	107.8	70.0	0.314	rd Rainfall set down for query; determined by weighing. If error outside.
31	4.0	(17.9)	12.2	11.4	(18.3)	12.4	13.5	19.2	(3.8)	(102.9)	(13.9)	(0.000)	rd
Sums	596.4	923.9	762.3	718.2				37.5	545.9			1.926	Rainfall for month 1.93 inches
Means	20.6	29.8	24.6	24.8				18.75	17.61				Mean temperature " " 24.8 deg. Fahrenheit

Minimum " " reduced to standard of thermometer No. 4 2.1 (Jan. 7th)

Maximum for month by solar thermometer 110.6 (Jan. 21st)

Aurora noticed Jan. 6. Mr. Trowbot suspected aurora Jan 13, & noticed aurora Jan. 29, 30, 31.

The velocity of the wind is given in figures denoting the number of miles per hour. This number is taken from one of the anemometers, or when neither of them is in working order, by estimate, assisted in most cases by observation of the rapidity with which the cups of the anemometers seem to move. When the velocity is estimated, the observation is marked "e".

Parentheses ( ) show that the observation included in them was made before or after its regular time. The following list gives the actual times of such observations.

Jan. 5. 10⅙ A.M. instead of 10 A.M.
" 6. 3¼ P.M. " " 2 P.M.
" 7. 12½ P.M. " " 2 P.M.
" 10. 1¼ P.M. " " 2 P.M.
" 17. 1½ P.M. " " 2 P.M.
" 21. 10¾ A.M. " " 10 A.M.
" 24. 3¼ P.M. " " 2 P.M.
" 28. 1 P.M. " " 2 P.M.
" 28. 5 P.M. " " 4 P.M.
" 30. 5½ P.M. " " 6 P.M.
" 31. 11 A.M. " " 10 A.M.
" 31. 1⅙ P.M. " " 2 P.M.
" 31. 5½ P.M. " " 4 P.M.

Brackets [ ] show that the number they enclose was obtained by interpolation. The actual readings were as follows.

Jan. 2. No. 4 at 7¼ P.M. 21.1; at 10 7/12 P.M. 19.0
" 4. No. 4 at 7½ P.M. 35.1; at 9½ P.M. 34.8
" 5. No. 4 at 7½ P.M. 33.4; at 11⅓ P.M. 31.0
" 6. No. 4 at 8¾ P.M. 28.2; at 11⅙ P.M. 15.0
" 11. No. 4 at 7¾ P.M. 31.4; at 10½ P.M. 32.0
" 11. 3235 at 7¾ P.M. 32.0; at 10½ P.M. 32.2
" 12. No. 4 at 7 5/12 P.M. 35.6; at 9⅙ P.M. 36.1
" 12. 3235 at 7 5/12 P.M. 36.3; at 9⅙ P.M. 37.0
" 13. No. 4 at 5½ P.M. 39.3; at 11 P.M. 34.4
" 13. 3235 at 5½ P.M. 40.0; at 11 P.M. 35.0
" 14. No. 4 at 5 1/12 P.M. 15.0; at 11½ P.M. 6.6
" 14. 3235 at 5 1/12 P.M. 15.3; at 11½ P.M. 7.2
" 18. No. 4 at 7 P.M. 25.6; at 10⅔ P.M. 20.4
" 18. 3235 at 7 P.M. 26.0; at 10⅔ P.M. 21.1
" 24. No. 4 at 6½ P.M. 19.1; at 10½ P.M. 18.3
" 24. 3235 at 6½ P.M. 19.8; at 10⅚ P.M. 18.9
" 27. No. 4 at 7 5/12 P.M. 26.4; at 11½ P.M. 24.0
" 27. 3235 at 7 5/12 P.M. 27.2; at 11½ P.M. 24.8

* Carefully observed; No. 4 noticed to be above 3235.

† Set down from memory 1 hour after observation. {At 10½ P.M. Jan. 25 No. 4 16.6; 3235 17.2.}

‡ Carefully observed; No. 4 noticed to be very low.

§ Maximum thermometer Casella 13399 set up Jan. 30, horizontally below the minimum thermometer. No. 1 calls of the of Fahrenheit: the mercury is divided by a bubble of air. It is set by being taken down and swung in the hand; so that after setting it usually reads too high.

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February 1872. Meteorological Record of

10 A.M.

Date	Barometer	Attached Thermometer	Casella 3235	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative Humidity Guyot's Tables	Wind	Clouds
1	30.309	59.5	13.4	12.5	12.5	14.2	12.0	61	3e NW	0
2	30.462	58.7	12.8	12.2	12.0	13.8	12.0	67	1e W	0
3	30.384	60.8	28.9	28.7	28.0	29.7	26.1	61	10e E	10 Pr Pm
4	29.342	55.0	24.9	24.3	23.9	25.7	24.0	79	8e NW	10 Pr (snowing)
5	30.181	65.4	28.9	28.1	28.1	29.6	26.2	63	7e W	0
6	30.218	64.4	31.2	30.9	30.3	32.3	29.8	75	1e SW	10 Pm : somewhat misty
7	30.345	58.6	23.0	22.7	22.0	23.7	18.6	34	8e NW	0 Pr
8	30.550	65.6	17.8	17.5	16.8	18.5	15.7	56	5e N	4 Pr Rm
9	30.338	58.3	21.7	21.3	20.5	22.4	20.4	72	8e N	10 Pr : thin
10	30.119	62.2	27.2	26.9	26.2	28.0	25.4	70	14e NE	10 Pr
11	30.420	56.4	31.7	31.5	30.9	32.2	26.0	38	6e N	10 Pr
12	30.084	65.3	38.2	37.2	37.1	39.0	32.6	43	2e SW	7 Pr Rm
13	30.089	65.7	37.4	36.9	36.3	38.0	34.3	65	7e E	0 Rs Fm haze
14	29.323	67.9	39.5	39.0	38.5	40.1	38.9	89	6e S	10 Pm
15	(29.508)	(56.2)	(15.7)	(15.1)	(14.8)	(16.5)	(13.7)	(53)	(6e SW)	(0 Pr)
16	29.618	60.1	27.8	27.1	26.7	28.4	23.7	47	15e NW	0
17	29.856	64.2	21.8	21.4	20.8	22.2	17.9	41	5e NW	5 Rs
18	30.062	64.8	21.6	20.7	20.6	22.0	17.0	32	5e SW	0
19										
20										
21	(29.623)	(65.1)	(41.3)	(40.8)	(40.4)	(41.8)	(35.2)	(45)	(3e W)	(3 M Fm)
22										
23										
24					(51.1)					
25	29.555	70.7	42.6	42.3	41.2	43.0	40.9	82	2e SW	10 Pm : a little rain beginning
26	29.821	66.0	17.7	17.2	16.4	18.0	13.5	29	15e W	0
27	29.699	54.1	16.9	16.4	15.8	17.4	12.9	28	25e NW	1 Pr Rs
28	29.710	58.0	19.0	18.5	18.0	19.7	15.6	39	18e NW	1 Pr Rs
29	29.850	56.0	19.7	19.0	18.6	20.0	15.5	34	7e NW	0 Pr Rs Fm

4 P.M.

Date	Barometer	Attached Thermometer	Casella 3235	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative Humidity Guyot's Tables	Wind	Clouds
1	30.318	67.6	22.6	22.0		23.1	18.4	38	4e NW	0
2	30.500	71.0	24.8	24.2		25.2	20.1	37	4e W	0 Rs
3	30.050	61.7	29.7	29.1		30.2	29.1	88	20e E	10 Pr : snowing.
4	(29.708)	(68.5)	(27.8)	(27.0)		(28.2)	(24.0)	(52)	(5e NW)	(Pr Fm)
5	30.220	66.9	39.5	39.0		40.0	36.9	72	4e W	9 Pr
6	29.957	66.6	45.4	45.0		45.9	40.6	59	7e S	4 Rs Pm Fm
7	30.500	59.6	24.6	24.1		25.0	19.3	30	8e N	0 Pr Rs
8	30.390	65.8	30.7	30.2		31.0	24.9	37	3e SW	5 Pr Rs
9										
10	30.092	72.4	29.0	28.8		29.7	26.5	65	14e NE	10 Pm
11	30.000	62.2	37.4	37.0		37.8	30.0	34	4e NE	10 Pr Pm
12	30.040	72.8	47.9	47.3		48.2	40.1	42	2e SW	0 Rs haze
13	29.975	69.6	36.6	36.0		36.9	33.9	71	12e E	10 Pm
14	29.398	67.7	27.3	28.2		29.0	25.3	59	10e W	1 M Fm
15	29.516	62.9	22.0	21.7		22.7	18.3	41	7e W	4 Fm M Pr Rm
16	29.621	63.5	35.0	34.3		35.4	29.1	42	9e W	0 Pr
17	29.872	75.9	31.8	31.2		32.0	24.5	25	4e NE	0 Rs
18										
19										
20										
21										
22										
23	(29.921)	(63.3)	(23.8)	(23.3)		(24.3)	(18.7)	(29)	(3e SW)	(5 R Rs)
24	29.676	68.2	52.2	51.5		52.9	41.9	30	3e SW	0 Rs haze
25	(29.492)	(72.0)	(43.3)	(43.4)		(43.6)	(41.5)	(83)	(3e NW)	(10 Pm)
26	29.779	63.3	18.2	17.7		18.8	13.8	24	20e W	0
27	29.610	60.0	25.3	24.8		25.8	19.4	23	20e NW	1 Pr Rs
28	29.708	63.8	29.2	28.8		29.7	22.6	24	28e NW	0 Pr Rs
29	29.781	61.7	27.8	27.4		28.1	21.4	25	10e W	10 Pm Rm Pr

Sums of columns, number of observations, means, and reduction of barometer to the freezing point.

	10 A.M.	4 P.M.
Barometer	719.066	688.124
	24	23
	29.961	29.918
	−.088	−.101
	29.873	29.817
Attached Thermometer	1479.0	1527.0
	24	23
	61.6	66.4
Casella 3235	620.7	731.9
	24	23
	25.9	31.8
No. 4	608.2	722.0
	24	23
	25.3	31.4
Minimum after setting omitting Feb. 24	596.4	
	24	
	24.8	
Dry bulb	636.2	743.5
	24	23
	26.5	32.3
Relative Humidity	1303	1030
	24	23
	54	45
Wind	187	204
	24	23
	7.8	8.9
Clouds	101	91
	24	23
	4.2	4.0

See note of July, 1872 on state of psychrometer

Rain gauge A, on roof of shed north of Clock Room.

Date	Time	Ounces	Inches
14	4 P.M.	165¼	1.430

This includes all since Jan. 20. The gauge catches little snow.

Mean of 10 measures of depth of snow Feb. 4 at 10 A.M. 6 inches. Snow compact. 19 inches in cylinder 1⅞ inches in diameter weigh 7 ounces.

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Harvard College Observatory. February 1872.

Date	External Thermometer No. 4				Casella 3235		Maximum after setting	Extreme temperatures. Maximum set at 9 P.M.	Minimum set at 10 A.M.	Maximum solar thermometer set at 8 A.M.	Solar thermometer after setting	Inches of rainfall by gauge C examined at 10 A.M.	Remarks.
	7 A.M.	2 P.M.	9 P.M.	Mean	2 P.M.	9 P.M.							
1	3.0	20.7	13.5	12.4	21.0	14.0	15.0	22.0	2.9	100.9	65.0	0.000	rd
2	4.0	23.5	[11.0]	12.8	24.0	[11.5]	(12.0)	(24.6)	2.6	100.5	68.2	0.000	rd
3	20.2	28.9	31.0	26.7	29.3	31.6		31.0	4.5	68.0	31.6	0.000	yc Snow began falling about 10½ A.M. & continued all day
4	19.5	(27.4)	23.0	23.3	(27.9)	23.5	23.6	30.9	20.8	(125.0)	(36.2)	†1.387	s Some snow after 10 A.M., but little. Cleared off about 1 P.M.
5		38.9	32.7		39.5	33.4	33.0	39.0	19.4	103.5	47.1	0.000	Ryw Rw̲d.
6	23.2	43.8	[40.2]	35.7	44.0	[40.6]	(39.3)	(45.3)	21.5	106.1	58.9	0.000	Rwy A little rain in the evening.
7	20.2	(24.1)	17.8	30.7	(24.5)	18.0	19.0	39.5	20.2	98.0	72.1	0.020	rl
8		29.1	23.3		29.7	23.9	24.0	31.3	14.1	102.0	57.2	0.000	Rrl rw̲.
9	14.7	(32.8)	(30.6)	26.0	(33.2)	(31.0)	(30.4)	(32.5)	13.7			0.000	yl Rc
10	25.0	28.5	28.8	27.4	28.8	29.1	28.9	30.4	20.6	68.4	34.2	0.000	yc.
11	26.3	(36.9)	34.9	32.7	(37.1)	35.2	34.4	37.3	25.3	58.0	44.4	0.000	yc
12	(28.8)	47.1	37.9	37.9	47.6	38.7	37.9	47.2	28.3	114.4	86.9	0.000	rw
13	27.6	37.5	34.6	33.2	38.0	35.0	34.6	38.1	27.2	104.3	47.6	0.000	Rwy Rain in the following night.
14	35.0	*38.6	17.7	30.4	*38.4	18.0	19.3	38.5	33.1	81.8	67.1	0.850	Rwy { A little snow or hail about 2 P.M. after which the weather became clear & cold.
15	10.2	21.0	[17.1]	16.1	21.7	[18.0]	(17.4)	(24.0)	(9.9)	94.2	41.4	(0.000)	rRd
16	16.3	33.3	[28.8]	26.1	33.8	[29.3]	(27.6)	(34.3)	14.2	103.6	71.2	0.000	rl
17	19.7	28.5	22.2	23.1	29.0	22.6	22.9	31.2	18.9	107.0	74.4	0.000	rl
18	13.5	(31.8)			(32.6)				12.7			0.000	rRw
19	(19.5)												rRw
20	21.0												rRw
21									(18.1)			(0.000)	wRw
22													wRdn
23	1.5									(114.0)	(65.9)		w'Rd { Gauge C found to have been meddled with: the bottle carried away & the funnel found lying some distance from the receiver }
24	30.0	51.9	(43.2)	41.7	52.6	(44.0)	(42.8)	(51.7)	(0.9)	121.2	94.1	(0.000)	rw̲
25	37.5	42.1	(41.3)	41.0	44.5	(42.0)	(41.0)	(45.4)	31.6	(94.9)	(49.0)	0.000	rw. A little rain
26	18.7	16.3	16.5	17.2	16.8	17.0	17.8	41.0	16.0	92.4	69.6	0.040	rdn
27	12.2	23.9	18.0	18.0	24.5	18.2	20.6	25.0	11.8	101.5	68.9	0.000	rdn
28	12.2	28.1	20.4	20.2	28.8	21.0	21.1	29.3	12.0	99.3	69.3	0.000	rdn
29	10.8	26.0	19.9	18.9	26.5	20.2	20.4	28.4	10.3	111.2	40.5	0.000	rRd yc Rrl̲. Sky 10½.
Sums	470.6	762.7	604.4	551.5	773.8	615.8		797.9	410.6			2.297	
Means	18.8	31.8	26.3	26.3	32.2	26.8		34.6	16.42				

Rainfall for month 2.30 inches.
Mean temperature " " 26.3 deg. Fahrenheit
Maximum " " 51.7 (Feb. 24)
Minimum " " 0.9 (telegraph to Feb. 23)
— " — (reduced to standard of No. 4) 1.4
Highest reading of solar thermometer 125.0 (Feb. 4)

Velocity of wind estimated in miles per hour: see note of January 1872.

Parentheses ( ) show that the observation they enclose was not made at the regular time; the actual times are given below.

Date	Regular times.	Actual times.
2	9 P.M.	10½ P.M.
4	2 P.M. 4 P.M.	1⅚ P.M. 5 P.M.
6	9 P.M.	9½ P.M.
7	2 P.M.	2⅚ P.M.
9	2 P.M. 9 P.M.	12 6/12 P.M. 9 7/12 P.M.
11	2 P.M.	1⅓ P.M.
12	7 A.M.	7½ A.M.
15	10 A.M. 9 P.M.	10⅙ A.M. 10½ P.M.
16	9 P.M.	11⅙ P.M.
18	2 P.M.	1⅓ P.M.
19	7 A.M.	7½ A.M.
21	10 A.M.	11¼ A.M.
23	4 P.M.	3⅔ P.M.
24	10 A.M. 9 P.M.	2 P.M. 7½ P.M.
25	4 P.M. 9 P.M.	4½ P.M. 5⅚ P.M.

On Feb. 24 the rain gauge was examined at 4 P.M.

Brackets [ ] enclose figures obtained by interpolation from the original observations below.

Date	Time	Casella 3235	No. 4
2	7 11/12 P.M.	15.0	14.8
2	10½ P.M.	11.5	11.0
6	7 7/12 P.M.	42.2	42.1
6	9½ P.M.	40.0	39.6
15	7 11/12 P.M.	19.0	18.4
15	10⅚ P.M.	16.9	16.1
16	7½ P.M.	30.4	29.8
16	11¼ P.M.	27.3	26.8

The following observations will show roughly what such interpolations may be expected to approximate tolerably to the truth.

Date	Time	Casella 3235	No. 4
5	7½ P.M.	34.8	34.3
5	10⅓ P.M.	32.8	32.2
7	7⅚ P.M.	20.0	19.6
7	9 5/12 P.M.	17.7	17.5
8	7½ P.M.	25.0	24.0
8	10¼ P.M.	22.2	21.5

From these the interpolated values for 9 P.M. would be as follows:

Date	Casella 3235	No. 4
5	33.7	33.1
7	18.2	17.9
8	23.5	22.6

These are not far from the observed values for 9 P.M. The interpolation for Feb. 7 is computed for 9 7/12 P.M., as that was more nearly the time of the actual observation.

Additional observations.

Feb. 1, 11⅔ A.M. Cas. 3235, 18.7 No. 4, 18.0 Maximum 18.3
" 24, 2 P.M. " " 52.6 " " 51.9 — " — 51.5

Feb. 23, 3¼ P.M. The wet bulb not having been wetted for several days, was compared with the dry bulb. Dry bulb 23.9 Wet bulb 22.9

On several other occasions also, when the cloth on it seemed to be dry, the wet bulb thermometer stood about a degree below the dry bulb.

*Read carefully: No. 4 above Casella 3235.
†By measurement and weighing of snow. Gauge C not used.

Auroras noticed

Feb. 4. Remarkable: red arch in south: for details see original record only a few in this column following record for 1872.
Feb. 5. A little in the north at 10⅓ P.M.
Feb. 7. Some at 7¾ P.M. None seen at 9½ P.M.
Feb. 27. A little auroral light low in the north 8½ to 9 P.M.

Feb. 15, 18, 19, 20. Auroras in notes of L. Trowbridge.

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March 1872. Meteorological Record of

10 A.M.

Date	Barometer	Attached Thermometer	Casella 32.35	18.4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity by Guyot's Tables	Wind	Clouds.
1	29.900	54.9	17.9	17.4	17.0	18.4	14.1	33	12e NW	0 Rs
2	29.952	64.3	16.1	15.7	15.0	16.8	13.9	52	8e NW	10 R
3	29.783	63.5	27.6	27.4	26.5	28.3	23.9	50	8e NW	10 R: thin
4	29.802	63.4	32.8	32.4	31.9	33.2	29.3	62	5e S	10 R
5	29.769	59.0	−3.2	−4.0	−4.2	below graduation			17e W	0
6	29.572	40.3	1.9	1.4	1.0	below graduation			18e W	9 R: thin
7	30.005	55.7	13.0	12.6	11.0	13.8	11.0	49	16e NW	0 Fm
8	29.980	51.1	22.6	22.0	21.4	23.1	18.3	37	7e SW	0
9	30.083	54.1	†25.7	†26.2	25.0	26.2	21.1	39	0 SW	10 R: thin
10	29.567	60.0	33.8	33.2	32.7	34.1	33.1	90	6e N	10 Rm: raining
11	29.910	48.1	34.8	34.2	33.8	35.2	29.3	46	5e W	0 Fm
12	30.050	65.4	19.4	18.9	18.5	20.2	18.7	78	10e N	10 R: snowing
13	(30.234)	(63.5)	(23.6)	(23.0)	(22.5)	(24.2)	(19.0)	(34)	(4e NW)	(0 Rs)
14	30.106	65.4	39.6	38.9	38.6	40.2	34.0	46	4e SW	4 Rs haze
15	29.668	65.2	32.7	32.3	32.0	33.7	29.5	59	20e NW	9 Rm Fm M
16	30.152	62.6	18.0	17.6	17.1	18.8	14.7	37	5e W	0
17	29.910	59.9	30.0	30.0	29.0	30.8	26.2	51	1e SW	10 R
18	29.720	59.0	24.6	23.9	23.4	25.1	20.2	39	13e W	0 Fm
19	29.550	57.8	39.7	39.4	38.6	40.1	36.7	70	12e S	10 R Rm
20	29.816	55.8	15.7	15.0	14.9	16.1	12.0	32	25e SW	3 Fm
21	29.908	56.6	13.5	12.9	12.4	14.2	10.9	41	13e W	0 Rs
22	30.136	60.3	20.0	19.6	19.0	20.7	15.9	32	10e W	0
23	30.016	65.7	35.4	34.9	34.3	36.0	31.3	57	3e S	9 Rm M Fm Rm
24	29.949	59.0	29.0	28.6	28.2	30.0	25.4	51	14e W	0 Fm
25	30.483	61.1	31.3	30.8	30.4	32.0	26.8	48	1e W	0 haze
26	30.341	68.0	36.0	35.7	35.1	36.5	32.4	60	8e E	10 Rm
27	30.120	66.7	32.7	32.4	31.9	33.1	31.0	79	10e N	10 R: snowing
28	30.077	62.4	40.5	39.9	39.4	41.0	35.0	49	6e W	0
29	29.960	65.6	†40.3	†40.6	39.4	41.0	36.5	60	3e NW	10 Rm
30	(30.160)	(66.0)	(37.0)	(36.4)	(36.0)	(37.7)	(31.4)	(45)	(4e NW)	(0)
31	29.920	65.9	32.7	32.2	31.9	33.0	31.0	80	6e NE	10 Rm: raining

4 P.M.

Date	Barometer	Attached Thermometer	Casella 32.35	18.4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity by Guyot's Tables	Wind	Clouds.
1	29.938	67.0	27.2	26.7		27.7	21.0	24	10e NW	0
2	29.674	65.8	21.7	21.1		22.2	20.0	71	10e N	10 R: a little snow or sleet
3	(29.843)	(71.3)	(33.5)	(32.9)		(34.0)	(27.7)	(40)	(7e W)	(0)
4	29.620	66.2	34.9	34.6		35.2	32.0	68	9e S	10 R: snowing
5	29.750	54.4	0.0	−0.7		below graduation			20e SW	0 Fm
6	29.669	53.6	7.7	7.2		8.2 readings	4.0 doubtful	10?	15e W	9 R Fm
7	29.950	64.1	26.1	25.7		26.8	21.4	37	6e SW	5 R Rm
8	29.977	75.0	29.0	28.6		29.6	22.4	23	8e NW	0 R Rs
9	30.013	59.5	30.9	30.3		31.3	27.0	56	1e E	10 R
10	29.278	65.0	33.7	33.2		34.2	33.0	87	7e N	10 Rm: raining
11	30.029	67.2	38.6	38.0		39.0	32.4	41	5e W	5 R R M Fm
12	29.995	65.1	19.0	18.7		19.8	18.3	77	10e N	10 R: snowing
13	30.198	69.7	31.9	31.4		32.0	26.0	40	1e S	10 R Rm Fm
14	(30.043)	(70.9)	(43.9)	(43.4)		(44.4)	(36.4)	(38)	2e SW	0 haze
15	29.869	68.4	22.0	21.5		22.7	17.7	33	16e NW	0
16	30.067	70.0	26.8	26.3		27.1	21.1	42	3e SW	0
17	29.735	60.4	33.8	33.9		34.2	32.0	77	6e SW	10 R: snowing
18	29.850	74.9	27.6	27.0		28.1	22.1	32	11e W	4 Fm
19	29.598	66.1	38.1	37.8		38.8	31.0	35	25e W	1 R M Fm
20	29.800	59.8	13.5	13.0		14.0	10.5	37	20e W	2 Fm
21	29.896	64.4	20.2	19.6		20.9	16.2	33	13e NW	0 Rs R Fm
22	30.071	65.0	28.3	27.8		28.8	21.3	19	9e NW	0
23	29.782	63.4	28.7	28.0		29.0	27.6	84	2e NE	10 R: snowing
24	30.091	56.6	34.7	34.1		35.1	28.7	41	7e SW	0
25	30.454	69.0	36.4	35.9		36.6	28.8	32	3e E	10 R
26	30.244	65.5	36.2	36.0		36.7	33.4	68	8e E	10 Rm
27	30.088	69.4	37.6	37.3		38.0	34.0	63	7e NE	10 Rm M Fm Rm
28	30.067	73.7	43.2	42.8		43.8	34.0	23	6e NW	0
29	29.959	70.8	37.0	36.9		37.6	34.3	69	5e NE	10 Rm: a little rain
30	30.137	69.2	42.9	42.4		43.4	34.0	25	3e NW	0 Rs Fm
31	29.524	59.3	32.2	31.9		32.8	31.6	87	10e NE	10 Rm: raining

Sums of columns, number of observations, means, and reduction of barometer to the freezing point.

	10 A.M.	4 P.M.
Barometer	928.599 31 29.955 −.085 29.870	927.209 31 29.910 −.100 29.810
Attached Thermometer	1866.3 31 60.2	2040.7 31 65.8
Casella 32.35	814.7 31 26.3	917.3 31 29.6
No. 4	801.5 31 25.9	903.3 31 29.1
Minimum after setting	783.7 31 25.3	
Dry bulb	833.5 Add estimate for 5th & 6th −0.6 832.9 31 26.9	932.0 Add estimate for 5th +0.3 932.3 31 30.1
Relative humidity	1506 29 52	1402 omitting 6th 29 48
Wind	274 31 8.8	265 31 8.5
Clouds	154 31 5.0	156 31 5.0

See note of July, 1872, on state of psychrometer

Rain gauge A on roof of shed north of Clock Room.

Date	Time	Ounces	Inches

Gauge A not examined in March, as the nature of the weather made it quite useless.

March 3, 10 A.M. Snow by mean of 10 measures 1.78 inches deep. 14 inches in cylinder 1 7/8 inches in diameter weigh 3 1/2 ounces avoirdupois. Rainfall 0.279 inches entered under heading of gauge C.

March 5, 10 A.M. Snow less than 0 1/4 inches: scarcely any rainfall.

March 12, 10 A.M. Snow 1 inch deep.

" 13, 11 A.M. Snow 1.8 1/4 inches deep by mean of 10 measures 18 1/4 inches in cylinder 1 7/8 inch in diameter weighs 4 1/2 oz. av. This makes 0.282 inches rainfall of which 0.155 belong to March 12.

March 15, 10 A.M. Snow 4 inches deep. 20 inches in cylinder 1 7/8 inches gauge weigh 2 1/2 ounces. Rainfall by this 0.298 inches. Gauge C gave 0.220.

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1872phae.proj - 3925

Harvard College Observatory. March 1872.

Date	External Thermometer No. 4				Casella 3235		Maximum after setting	Extreme temperatures.			Solar thermometer after setting	Inches of rainfall by gauge C measured at 10 A.M.	Remarks.
	7 A.M.	2 P.M.	9 P.M.	Mean	2 P.M.	9 P.M.		Maximum set at 9 P.M.	Minimum set at 10 A.M.	Maximum solar thermometer set at 4 P.M.			
1	10.5	25.4	[20.1]	18.7	25.9	[20.7]	(18.3)	(26.9)	9.7	99.0	71.3	0.000	r Rdn
2	10.7	20.6	23.8	18.4	21.0	24.0		24.0	9.9	71.6	22.9	0.000	dy s A4. n↑11. Evening snowy & windy.
3	23.0	(32.1)	(24.1)	26.4	(32.7)	(24.8)	(24.8)	(32.6)	15.1	(119.3)	(55.8)	*0.279	yl y> A10. r N.
4	20.2	37.2	†28.2	28.5	37.5	†27.0	27.4	38.2	17.1	100.2	44.3	0.000	Ro y< A little snow afternoon & evening.
5	−4.2	−0.6	−1.3	−2.0	0.3	−1.1	3.0	27.3	−5.8	86.7	44.3	0.010	r d n
6	−3.2	5.6	(3.3)	1.9	5.9	(4.0)	(5.7)	(7.9)	−5.2	80.9	52.2	0.000	Ry d Ro U.
7	−0.2	21.7	22.7	14.7	22.0	22.9	23.0	26.0	−0.2	97.7	66.0	0.000	r Rd y< A2. Sy U.
8	14.3	28.2	21.4	21.3	28.7	22.0	22.0	29.0	12.0	102.8	74.2	0.000	rl
9	14.0	30.1	29.8	24.6	30.7	30.2	29.9	30.9	13.0	91.5	44.0	0.000	yl
10	33.2	32.9	35.8	34.0	33.2	36.2		35.1	24.8	44.0	39.0	0.610	yl Rain previous night & during the day.
11	29.7	37.8	32.7	33.4	38.5	33.1	32.3	38.0	28.7	111.3	74.3	0.450	r Rw y< N Sz U y<
12	25.2	17.7	(19.0)	20.6	18.0	(19.5)	(20.2)	32.5	18.5	74.1	32.0	*0.155	ys Snow previous night & during the day. r A10.
13	10.8	28.9	27.5	22.4	29.0	28.0	28.0	31.4	(10.1)	116.6	45.0	(0.127)	rl y< N y U.
14	26.2	43.8	34.0	34.7	44.0	34.7	34.1	43.8	22.5	116.7	78.4	0.000	rw y< U. Snow following night.
15	31.3	23.5	[13.9]	22.9	23.9	[14.2]	(13.4)	(34.0)	30.6	130.9	75.9	*0.298	ys y> A9. rl N.
16	9.3	24.7	21.2	18.4	25.0	21.8	21.8	26.4	8.3	111.3	71.7	0.000	rl
17	18.7	(†36.6)	29.9	28.4	(†36.1)	30.0	30.0	36.9	14.7	79.4	45.2	0.000	y Rc A few snowflakes in afternoon. r 9.
18	19.2	27.4	[20.1]	22.2	27.8	[20.7]	(19.0)	(30.0)	18.6	113.7	72.9	0.001	rl y< U.
19	33.6	37.1	26.0	32.2	37.2	26.6	26.8	43.6	17.2	105.9	78.0	0.000	yw A few snowflakes 1½ to 2 P.M. r 13. n.
20	10.5	11.8	11.1	11.1	12.2	11.5	13.2	26.9	10.4	88.9	59.7	0.007	rdn A few snowflakes about 11 A.M. y> A3.
21	8.3	17.5	16.8	14.2	18.0	17.2	17.4	20.5	7.1	94.5	63.3	0.000	rdn
22	12.2	(24.4)	(22.7)	19.8	(25.0)	(23.2)	(23.4)	(28.0)	11.0	102.2	73.5	0.000	r Sdn
23	18.3	33.4	27.7	26.5	33.7	28.0	27.8	36.0	16.0	98.0	33.6	0.000	y Sc Snow beginning about 11 A.M. falling faster N.
24	23.5	33.4	27.5	28.1	33.8	27.8	27.9	34.3	21.9	§121.4	76.3	*0.466	rl
25	24.0	38.0	31.0	31.0	38.1	31.7	31.1	37.9	18.9	111.2	57.1	0.000	y < Rc
26	21.5	37.0	(33.4)	30.6	37.2	(34.0)	(33.6)	(37.6)	29.6	89.7	49.8	0.000	y Rc
27		37.6	31.8		37.6	32.1	31.9	37.6	28.9	118.9	58.7	*0.297	y Rw y> A4. rU. Snow early in the day.
28	28.2	42.6	‡34.5	35.1	43.1	‡35.8	35.6	42.7	26.1	115.4	82.6	0.005	rw y< U.
29		41.7	(33.1)		42.0	(34.0)	(33.6)	(38.4)	32.0	100.0	41.9	0.000	y Rc Sr10. A little rain in the afternoon.
30	31.3	41.1	33.8	35.4	41.9	34.3	34.0	42.1	(27.1)	114.8	88.0	(0.040)	rw y< A4.
31	29.2	32.0	(31.9)	31.0	32.6	(32.2)	(31.9)	(34.0)	30.5	87.4	33.9	*0.343	yc Snow early in the day, afterwards rain.
Sums	529.3	901.2	767.5	684.5	912.6	781.1		1013.5	541.5			3.088	Rainfall for month 3.09 inches.
Means	18.3	29.1	24.8	23.6	29.4	25.2		32.59	17.47				Mean temperature " " 23.6 degrees Fahrenheit
													Maximum " " " 43.8, March 14.
													Minimum " " " −5.8 " 5.
													—" — (reduced to standard of No. 4) −5.2
													Highest reading of solar thermometer 130.9, March 15.

Velocity of wind estimated in miles per hour: see note of January 1872.

Anemometer on barn flown off this month. That on the west wing is in place, but the staff which carries it has not been hoisted into its proper place. It serves to assist in estimating the velocity of the wind.

Observations in parentheses ( ) were not made at the regular time. The actual times are given below.

Date.	Regular times.	Actual times.
1	9 P.M.	10⅚ P.M.
3	2 P.M., 4 P.M. 9 P.M.	2½ P.M., 4¾ P.M. 10⅓ P.M.
6	9 P.M.	10½ P.M.
12	9 P.M.	5¼ P.M.
13	10 A.M.	11 A.M.
14	4 P.M.	4⅙ P.M.
15	9 P.M.	10¾ P.M.
17	2 P.M.	12⅔ P.M.
18	9 P.M.	10 5/12 P.M.
22	2 P.M., 9 P.M.	12⅓ P.M., 9¼ P.M.
24	2 P.M.	1½ P.M.
26	9 P.M.	10 P.M.
29	9 P.M.	9⅙ P.M.
30	10 A.M.	10 1/16 A.M.
31	9 P.M.	9⅓ P.M.

Brackets [ ] enclose figures obtained by interpolation from the original observations below.

Date.	Time.	Casella 3235	No. 4
1	7⅔ P.M.	23.0	22.3
1	10⅚ P.M.	17.6	17.1
15	8 P.M.	15.2	14.8
15	10¾ P.M.	12.5	12.2
18	6¼ P.M.	24.5	24.0
18	10 5/12 P.M.	18.8	18.2

Additional observations.

Date.	Time.	Casella 3235	No. 4
23	7¾ P.M.	28.7	28.2
23	11 P.M.	27.8	27.4
28	7¾ P.M.	38.0	37.5
28	10¾ P.M.	33.7	33.0
23	Hence by interpolation for 9 P.M.	28.4	27.9
28		36.2	35.6

which agree tolerably with the record.

† Read carefully: No. 4 above Casella 3235.

‡ Read carefully. Thermometers 1.3 degrees apart.

§ The solar thermometer had reached this maximum when the snow was cleared away from it at 11 A.M.

Auroras noticed.

March 1, 10¾ P.M. Arch & some streamers, both undefined.

" 5, 9¼ P.M. Low arch.

" 6, 10½ P.M. A little aurora.

" 8, 8 P.M. Arch well defined, about 3° wide. Vertex of lower edge about 2° from horizon. No aurora at 9 P.M. A little at 10 P.M. (At 8 P.M. sky very dark below aurora.)

" 15. Slight appearance of aurora seen 10½ to 11 P.M.

" 28. Arch seen about 9½ P.M.

March 11, 21. Auroras recorded in notes of L. Trouvelot, who also records, on March 8, 8 P.M., that the auroral light rested on the horizon. Difference of elevation between the observers' stations may account for the difference between this statement and that above.

March 24. Mean of 10 measures of depth of snow 5¾ inches. 30 inches in cylinder 1⅞ inches in diameter, weigh 3⅞ ounces avoirdupois. Hence rainfall 0.46 inches. Gauge C gave 0.270 inches. Measure of snow entered as probably more accurate than the gauge. The measures were made at 11 A.M.

March 27, 10 A.M. Mean of 10 measures of depth of snow 2¾ inches. 16 inches in cylinder 1⅞ inches in diameter, weigh 2¾ ounces. Hence rainfall entered under head of gauge C, 0.297 inches. Gauge C gave 0.255 inches.

March 31, 10 A.M. Mean of 10 measures of depth of snow 2 3/10 inches. 20 inches in cylinder 1⅞ inches in diameter weigh 4¾ ounces avoirdupois. Hence rainfall entered under heads of gauge C, 0.343 inches. Gauge C gave 0.230 inches.

* Rainfall by measurement & weight of snow as above.

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April 1872. Meteorological Record of

10 A.M.

Date	Barometer	Attached Thermometer	Casella 3235	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's Tables	Wind	Clouds
1	29.485	58.2	33.1	32.4	32.5	34.3	31.9	76	6e W	2 Pm Fm
2	29.944	61.0	35.2	35.0	34.3	35.8	28.8	38	9e W	8 Pr
3	30.015	67.9	41.1	40.7	40.1	42.0	34.4	37	5e W	5 Pm Fm M
4	30.178	64.5	41.7	40.9	40.3	42.1	35.6	46	6e N	0 M Fm Pr Fr?
5	30.150	63.6	42.9	42.4	41.9	43.4	35.6	38	4e W	5 Pr R Rs M
6	30.130	67.2	43.0	42.8	42.0	43.8	37.0	46	1e SW	10 Pm Pr Fm
7	30.210	70.0	47.5	47.1		48.4	41.8	52	4e S	10 Pr Pm haze
8	30.030	62.0	37.4	36.9	36.2	37.8	36.2	85	14e NE	10 Pm
9	30.006	63.0	40.0	39.8	39.0	40.4	39.2	89	1e S	10 Pm : raining
10	29.570	65.5	53.8	53.3	52.8	55.0	53.5	90	1e W	10 Pm Fm
11	30.022	64.9	42.4	42.1	41.5	43.0	35.0	36	6e W	9 Pm M Fm
12	30.301	58.7	49.4	48.8	48.5	50.0	49.3	28	2e W	1 Pr R
13	29.950	64.0	49.0	49.0	48.0	49.6	47.7	86	1e SW	10 Pr : raining
14	29.876	58.0	42.4	42.1	41.2	42.8	33.9	29	15e W	10 Pm
15	29.967	57.4	39.5	39.0	38.6	40.0	31.9	31	7e NW	0 Pr
16	29.788	66.7	37.0	36.8	36.0	37.1	35.8	87	5e N	10 Pm : raining
17	30.164	64.0	45.0	44.5	44.0	45.4	35.1	22	5e NW	5 Rg Pr : thin
18	29.950	61.4	49.5	49.3	48.3	49.8	37.4	17	4e SE	2 haze Pr
19	29.674	63.2	51.0	50.8	50.1	52.0	41.0	29	10e NE	1 Pr R Rm
20	29.982	61.1	58.3	57.9	57.5	59.4	49.9	46	1e SW	1 Pr haze
21	30.038	63.5	61.0	60.7	60.3	62.2	52.0	43	0 calm	3 Pr haze
22	29.850	58.6	58.9	59.2	58.2	59.6	51.8	55	5e SW	10 Pm Fm
23	30.006	54.6	38.7	37.9	37.4	39.1	31.1	31	6e W	1 M Fm
24	30.006	62.5	46.0	45.8	45.0	46.9	43.8	76	8e S	10 Pm : a little rain
25	30.120	66.4	54.9	54.9	53.9	55.5	43.5	29	1e S	8 Pm Rm haze
26	29.749	59.7	64.1	64.0	63.3	65.7	55.3	47	1e S	10 Pm haze : Pm thin
27	29.860	63.5	59.0	58.9	58.2	60.0	43.4	12	12e W	0
28	30.083	61.0	51.2	50.9	50.0	52.0	39.0	35	9e NW	0
29	30.170	65.1	54.0	54.0	53.2	54.8	41.9	23	7e NW	0
30	30.400	63.4	56.9	56.6	55.7	58.0	48.3	43	1e SE	5 haze Pm Rm

4 P.M.

Date	Barometer	Attached Thermometer	Casella 3235	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's Tables	Wind	Clouds
1	29.530	66.0	33.8	33.4		34.4	28.7	46	14e W	10 Pm Pr Rs M Fm Rm
2	30.010	71.0	41.8	41.1		42.0	33.4	30	4e W	0 Fm
3	(29.968)	(70.0)	(42.9)	(42.4)		(43.1)	(33.8)	(26)	(7e W)	(1 M Fm)
4	30.067	70.0	45.3	44.9		45.8	37.4	37	7e NW	1 M R Fm
5	30.124	71.1	42.9	42.4		43.2	35.4	37	2e SE	0 M Fm
6	30.100	74.1	52.0	51.7		52.8	42.0	31	8e NW	0 M Fm
7	30.200	66.9	45.0	44.7		45.0	41.8	74	4e S	10 Pm : raining
8	30.067	70.4	40.6	40.0		41.0	38.8	81	9e NE	10 Pm
9	29.854	66.1	44.6	44.2		45.0	43.6	89	1e SE	10 Pm
10	29.699	67.2	52.0	51.8		52.8	43.0	37	7e W	9 Pm Fm
11	30.088	73.0	47.8	47.3		48.0	38.1	29	8e W	0 M Fm
12	(30.230)	(66.1)	(52.3)	(51.7)		(52.4)	(42.0)	(33)	(5e E)	(9 Pr haze)
13	29.824	66.4	62.2	62.0		62.9	46.8	19	9e SW	0 M Fm
14	29.900	57.1	42.9	42.6		43.2	34.6	32	13e W	9 Pm Fm
15	29.850	74.9	47.5	47.3		†47.2	38.7	38	6e E	9 Pm Rm R
16	29.874	65.4	38.0	37.9		38.9	36.6	79	6e NE	10 Pm Fm
17	30.035	66.1	52.0	51.7		52.5	38.1	10	7e W	0 Rs
18	29.788	66.5	50.7	50.2		51.1	41.0	33	2e SE	0 Fm haze
19	29.732	65.3	49.7	49.3		50.0	40.2	33	7e NE	0 Pr Rm haze
20	29.981	70.8	63.9	64.0		64.6	52.4	38	3e SE	9 Pm Fm : a little rain
21	(30.000)	(68.1)	(51.5)	(50.9)		(51.5)	(46.4)	(65)	(0 SE)	(0 haze Rs Pr)
22	29.804	66.3	50.8	50.7		51.3	49.0	84	1e W	10 Pm
23	30.030	68.6	46.1	45.6		46.8	36.5	24	4e W	0
24	29.923	67.8	62.0	62.1		63.0	52.0	42	5e S	7 Pm Fm haze
25	29.991	67.9	61.1	61.3		61.9	48.7	31	8e S	3 haze Pr : thin
26	29.600	78.7	82.7	82.6		83.0	62.2	25	10e SW	2 haze
27	29.852	68.0	62.4	62.3		63.1	44.0	6	12e NW	0 Pm Rs
28	30.020	67.1	57.5	57.1		58.1	41.4	9	14e NW	0
29	30.240	69.0	52.9	52.3		53.2	42.7	34	6e E	0 Pm M haze
30	30.326	70.1	56.8	56.3		57.3	46.8	39	8e SE	2 haze Pm Rm

Sums of columns, number of observations, means, and reduction of barometer to the freezing point.

	10 A.M.	4 P.M.
Barometer	899.674	898.707
	30	30
	29.989	29.957
	−.092	−.108
	29.897	29.849
Attached thermometer	1880.6	2056.0
	30	30
	62.7	68.5
Casella 3235	1423.9	1531.7
	30	30
	47.5	51.1
No. 4	1414.5	1521.8
	30	30
	47.1	50.7
Minimum after setting	1348.0	
	Add estimate for April 7	
	46.5	
	1394.5	
	30	
	46.5	
Dry bulb	1445.9	1545.1
	30	30
	48.2	51.5
Relative humidity	1402	1191
	30	30
	47	40
Wind	157	197
	30	30
	5.2	6.6
Clouds	166	121
	30	30
	5.5	4.0

See note of July, 1872 on state of psychrometer

Rain gauge A, on roof of shed north of Clock Room.

Date	Time	Ounces	Inches
6	6 P.M.	358	3.097
8	1¼ P.M.	59½	0.515
11	12 M.	59½	0.515
13	5¼ P.M.	25¾	0.223
18	2 P.M.	27½	0.238
30	11¾ A.M.	16½	0.143
Total since April 6		188¾	1.634

The measure of April 6 includes all since Feb. 14, the snow & ice having previously remained & froze in the pipe of the gauge. As the gauge is unfit for measuring falls of snow, the result obtained April 6 is without value.

1872phae.proj..3825

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Harvard College Observatory. April 1872.

Date	External Thermometer No. 4 7 A.M.	2 P.M.	9 P.M.	Mean	Casella 3235 2 P.M.	9 P.M.	Maximum after setting	Extreme temperatures. Maximum set at 9 P.M.	Minimum set at 10 A.M.	Maximum solar thermometer set at 4 P.M.	Solar thermometer after setting	Rainfall in inches. Gauge C examined at 10 A.M.	Remarks.
1	28.7	*34.1	29.6	30.8	*33.7	30.0	30.0	32.9	26.2	111.9	54.9	1.000	Ryl
2	30.5	(40.5)	34.6	35.2	(41.0)	35.2	34.7	41.0	28.9	109.7	86.0	0.000	y Rw y > Sy < U Perhaps a few snow flakes following night.
3	34.2	(43.6)	[35.1]	37.6	(44.0)	[35.8]	(35.0)	(43.9)	32.3	(125.0)	(81.6)	0.005	Rcw
4	33.0	(45.1)	(35.4)	37.8	(45.8)	(36.0)	(35.7)	(45.1)	30.4	125.7	93.0	0.000	rw
5	33.0	44.3	[36.3]	37.9	45.0	[37.2]	(35.0)	(46.0)	30.3	131.0	89.8	0.000	Rrw Afternoon cool, with east wind.
6	33.2	50.2	41.4	41.6	50.6	42.0	41.8	51.8	30.1	131.1	99.0	0.000	Rw y > N.
7	37.5	(50.2)	37.9	41.9	(50.3)	38.5	38.7	50.0	32.1	98.7	46.7	0.000	y Sc Rain after 3 P.M.
8	35.0	40.1	39.4	38.2	40.6	39.9	39.2	40.0	35.0	60.0	43.9	0.500	y Sc A little rain at times.
9	38.8	42.9	40.8	40.8	43.1	41.2	40.6	43.9	36.2	54.8	48.0	0.120	y Rw Showery; evening foggy.
10	37.7	54.2	43.2	45.0	54.0	43.9	43.1	58.1	39.0	127.9	70.0	0.390	y w y > A4. Rr U y < 10. A little rain at noon. Thunder shower about 2 P.M. April 10.
11	40.0	(44.6)	39.5	41.4	(45.2)	40.0	40.0	47.2	35.6	124.0	91.5	0.001	Rrw rU.
12	38.2	57.0	43.6	46.3	57.0	44.1	44.0	60.7	34.2	(125.2)	(92.2)	0.000	w. zy <
13	48.3	(60.9)	49.5	52.9	(61.3)	50.0	49.3	61.9	42.7	128.9	107.5	0.200	w. Rain early; cleared up about 11 A.M. Passing clouds in the evening.
14	40.2	(45.0)	35.4	40.2	(45.1)	36.0	35.7	52.4	36.4	121.6	60.6	0.020	yl y > A7 rU
15	(33.0)	48.0	40.6	40.5	47.7	41.0	41.0	50.0	30.0	120.4	66.9	0.010	rl y < N. A little rain beginning about 9 P.M.
16	35.3	35.7	(35.1)	35.4	35.9	(35.6)	(35.0)	(41.0)	33.4	66.7	61.1	0.065	yl. Rr A6. Rain early: mixed snow afterwards snow: stopped about 3 P.M.
17	36.7	(51.5)	42.8	43.7	(52.0)	43.2	43.0	54.6	32.1	122.2	96.7	0.230	Rwy y > N Thin clouds in the evening.
18	35.0	49.8	40.2	41.7	50.2	41.0	41.8	52.1	31.3	119.0	95.0	0.000	Rrw Sz Sy U
19	38.8	52.0	40.6	43.8	52.6	41.3	41.3	52.7	34.6	119.0	92.0	0.000	rl n → Sz.
20	40.5	68.3	56.9	55.2	67.9	57.1	55.9	69.4	34.0	138.9	70.8	0.000	w zRr y < RyU. A few drops of rain in the afternoon.
21	45.0	(64.8)	51.1	53.6	(65.0)	51.9	51.4	64.1	40.8	(128.0)	(47.9)	0.000	wr Slight sea-breeze most of the day.
22		53.4	(36.5)		53.2	(37.0)	(37.4)	(59.0)	39.9	97.3	55.0	0.000	y Rw A little rain after 10 A.M. Rr U.
23	32.2	44.1	(36.0)	37.4	44.6	(36.7)	(37.8)	(45.7)	28.2	112.5	92.5	0.130	rl Passing clouds at times.
24	48.8	63.2	(44.9)	52.3	63.0	(45.5)	(45.9)	(64.0)	35.0	128.0	75.9	0.006	yw Rr U. A little rain early in the day.
25	46.5	(58.3)	48.6	51.1	(58.6)	49.1	49.0	63.0	41.6	‡158.2	95.3	0.000	Rywz Rr U.
26	55.0	81.2	[70.2]	68.8	81.3	[70.3]	(61.0)	(82.0)	42.2	134.0	116.2	0.000	rz Rr U.
27		61.4	51.8		61.4	52.1	52.0	62.0	49.2	125.0	108.3	0.000	rw Thin clouds in the middle of the day.
28	44.2	56.2	(44.9)	48.4	56.8	(45.2)	(45.6)	(57.0)	41.1	121.9	99.2	0.000	rw Much wind and dust.
29		(52.6)	46.1		(53.0)	46.3	46.0	58.9	38.2	125.3	95.4	0.000	rw Sz
30	42.3	56.5	46.8	48.5	57.0	47.2	47.2	59.4	35.1	126.0	99.1	0.000	wz z > A3.
Sums	1044.6	1549.7	1274.8	1188.0	1556.9	1290.3		1606.8	1056.1			2.677	
Means	38.6	51.7	42.5	44.0	51.9	43.0		53.56	35.20				

Rainfall for month 2.68 inches.
Mean temperature " " 44.0 degrees Fahrenheit.
Maximum " " " 82.0 April 26.
Minimum " " " 26.2 April 1.
— " — (reduced to standard of No. 4) 26.8
Highest reading of solar thermometer 158.2 April 25, but this is probably owing to some disturbance of the instrument: next highest reading 138.9 April 20.

Velocity of wind estimated in miles per hour: see notes of January and March 1872.

Observations in parentheses ( ) were not made at the regular time. The actual times are given below.

Date	Regular times.	Actual times.
2	2 P.M.	3 P.M.
3	2 P.M., 4 P.M., 9 P.M.	1½ P.M., 4½ P.M., 9½ P.M.
4	2 P.M., 9 P.M.	3 P.M., 9⅞ P.M.
5	9 P.M.	10 11/12 P.M.
7	2 P.M.	1 P.M.
11	2 P.M.	12⅔ P.M.
12	4 P.M.	3 P.M.
13	2 P.M.	2¼ P.M.
14	2 P.M.	1⅔ P.M.
15	7 A.M.	7½ A.M.
16	9 P.M.	10⅔ P.M.
17	2 P.M.	3⅙ P.M.
21	2 P.M., 4 P.M.	12½ P.M., 6½ P.M.
22	9 P.M.	10 3/24 P.M.
23	9 P.M.	10¾ P.M.
24	9 P.M.	9¾ P.M.
25	2 P.M.	2⅔ P.M.
26	9 P.M.	11 P.M.
28	9 P.M.	10¼ P.M.
29	2 P.M.	2¾ P.M.

Brackets [ ] enclose figures obtained by interpolation from the original observations below.

Date	Time	Casella 3235	No. 4
3	8½ P.M.	37.1	36.6
3	9½ P.M.	34.9	34.1
5	7 5/12 P.M.	39.0	38.2
5	10 11/12 P.M.	35.0	34.0
26	8 P.M.	74.4	74.3
26	11 P.M.	62.0	61.9

*Read carefully: No. 4 higher than Casella 3235: but this happens more often as the weather grows warmer.
†Dry bulb April 15 below the other thermometers: read carefully.
‡The high reading of the solar thermometer April 25 is probably owing to some disturbance of the instrument, as the day was rather cloudy and not very warm.

Auroras noticed.

April 3, 9½ P.M. Low arch.
" 10, 9 P.M. High arch, reaching to Ursa Minor, with dark sky below and diffused light with some streamers above. At 9¾ P.M. arch broken up: streamers covering most of the sky, flashing fast in the north, with a little reddish color in parts: corona formed with vertex between δ Leonis and ξ Ursa Majoris.
April 11, 10¾ P.M. Low faint arch.
April 2, 5, 14, 16, 18, 28. Auroras suspected by L. Trouvelot.
" 1, 9, 21, 26 " suspected " " —

Meteor April 10, 9 P.M. Low Cassiopeia between 5 & 37 Cas. Nin. moving parallel to the horizon.

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May 1872. Meteorological Record of

10 A.M.

Date	Barometer	Attached Thermometer	Casella 3235	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's tables	Wind	Clouds
1	30.249	63.9	61.1	61.4	60.5	62.3	50.0	35	9e SW	9 haze Pm Ri : thin
2	29.949	60.6	*60.7	60.8	59.9	61.6	56.2	69	10e SW	10 Pm Fm
3	29.850	59.8		54.9	54.0	55.9	48.1	52	4e NW	10 Pm
4	29.866	57.8		55.5	54.4	56.7	51.7	69	5e S	8 Pm M Fm
5	(30.007)	(63.9)		(51.3)	(50.4)	(52.3)	(42.0)	(34)	(13e NW)	(1 Pm M Fm)
6	29.895	60.9		50.6	49.5	51.3	43.8	50	6e NW	10 Pm M Fm
7	29.950	60.9		66.5	65.7	67.5	54.5	38	8e NW	5 Pm Fm
8	(29.982)	(68.6)		(77.3)	(76.4)	(78.0)	(60.2)	(30)	(6e W)	(1 haze)
9	29.882	65.6		70.6	69.3	71.9	61.5	52	1e SE	5 Pm haze
10	29.949	74.2		77.5	76.4	78.3	62.9	38	6e SW	1 Ri M Fm haze
11	30.302	60.8		51.5	50.8	52.4	46.8	63	9e E	8 Pm Fm
12	29.905	61.3		(68.9)	(68.6)	(71.4)	(64.3)	(66)	4e SW	10 Pm : thin
13	29.858	67.4		56.9	56.0	57.8	49.8	53	11e N	10 Pm
14	30.140	66.4		59.4	58.6	60.3	47.0	28	6e NE	0 Pm Fm
15	30.188	60.7		61.9	61.0	62.9	51.5	40	4e SW	5 Pm Fm haze
16	30.032	60.8		55.8	55.0	57.0	41.9	15	15e NW	0 Ri
17	29.994	64.2		57.8	57.7	58.7	47.5	36	5e E	7 M Fm
18	29.960	59.8		61.0	60.1	61.7	52.0	47	2e SW	0 haze
19	29.717	64.4		60.9	60.0	62.0	56.8	70	1e S	10 Pm : a little rain
20	29.560	66.6		67.0	66.4	67.8	56.8	47	10e SW	1 M Fm
21	29.734	67.7		63.5	62.5	64.2	54.3	48	8e N	10 Pm
22	30.090	65.1		63.9	63.1	65.0	55.0	49	4e E	3 Pm M Fm Ri haze
23	29.723	64.7		60.9	60.0	61.8	59.6	87	6e S	10 Pm : a little rain
24	29.876	64.3		66.2	65.2	67.0	58.7	68	1e NW	2 Ri R M Fm
25	29.799	62.8		63.6	62.6	64.4	60.1	77	1e S	10 Pm
26	29.962	61.7		63.4	62.4	64.1	52.8	42	3e NW	9 Pm Ri : thin
27	29.886	62.4		65.7	64.9	67.2	58.0	54	5e E	0 Pm Fm R
28	29.762	61.0		57.3	56.5	57.5	54.8	83	1e E	10 Pm
29	29.974	58.0		60.2	59.1	61.0	51.5	48	3e SW	3 M Fm
30	30.084	59.1		63.7	62.7	64.7	54.1	46	1e W	5 Ri Ri
31	29.882	60.1		52.5	51.8	53.3	51.8	90	7e NE	10 Pm : raining

4 P.M.

Date	Barometer	Attached Thermometer	Casella 3235	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's tables	Wind	Clouds
1	30.180	64.4	58.9	58.8		59.7	48.6	39	8e SW	10 Pm
2	29.892	64.0	*61.0	61.4		62.2	58.1	77	10e S	10 Pm
3	29.812	62.8		59.4		60.3	48.7	37	4e W	7 Pm M Fm
4	29.876	66.1		52.7		53.6	47.6	61	1e S	10 Pm : a little rain
5	(29.951)	(67.6)		(55.9)		(56.7)	(42.7)	(20)	(10e NW)	(8 Pm Fm)
6	29.960	63.7		49.5		50.2	46.4	73	1e S	10 Pm M Fm : a little rain
7	29.967	70.5		57.0		58.0	51.1	59	7e E	2 M Fm
8	30.025	76.4		70.1		70.8	56.8	37	4e E	2 haze M
9	29.821	67.6		79.6		80.0	66.0	44	6e S	8 haze Pm
10	(30.130)	(77.2)		(63.6)		(64.1)	(54.0)	(46)	(6e E)	(3 Ri Rm haze)
11	30.180	62.0		49.9		50.9	45.4	62	13e E	6 haze Pm
12	29.830	72.1		72.4		72.7	63.4	57	12e SW	8 Pm Ri haze
13	29.876	68.5		55.8		56.8	51.3	66	5e SE	3 Pm haze
14	30.184	67.5		57.6		58.3	48.0	41	5e E	4 Pm Fm Ri
15	30.141	64.9		58.9		59.9	47.9	34	5e E	9 Pm M Fm
16	29.939	67.1		60.1		61.0	43.6	10	20e N	1 Pm Ri
17	29.980	65.6		56.3		57.4	47.7	42	5e E	1 Pm M
18	29.900	68.3		61.1		62.1	51.1	41	4e SE	2 haze
19	(29.519)	(65.8)		(54.2)		(55.3)	(53.8)	(90)	(6e NE)	(10 Pm : raining)
20	29.560	72.1		65.7		65.6	55.0	46	16e NW	10 Pm Fm : raining
21	29.788	68.9		70.2		70.8	57.2	38	6e N	9 Pm M Fm
22	30.042	69.1		62.0		62.8	54.8	57	7e SE	9 Pm Ri haze
23	(29.718)	(68.6)		(58.8)		(59.8)	(57.1)	(84)	(5e N)	(10 Pm)
24	29.838	68.8		61.5		62.4	56.0	64	7e SE	9 Pm M Fm Ri : thin
25	29.758	64.4		64.9		65.6	63.2	87	1e S	10 Pm
26	(29.950)	(68.3)		(61.3)		(62.1)	(54.8)	(59)	(2e E)	(10 Pm)
27	29.799	66.4		67.9		68.4	56.5	43	9e SE	9 Pm Ri R Ri
28	(29.815)	(66.0)				(57.4)	(54.8)	(84)	(5e N)	(10 Pm M Fm)
29	29.998	64.4		63.8		64.7	52.8	40	4e W	5 Pm Ri R M Fm
30	30.074	65.0		57.2		57.5	54.1	79	8e S	10 Pm : raining
31	29.900	61.4		59.8		60.7	56.0	73	1e N	10 Pm

Sums of columns, number of observations, means, and reduction of barometer to the freezing point.

	10 A.M.	4 P.M.
Barometer	928.007 31 29.936 −.093 29.843	927.403 31 29.916 −.104 29.812
Attached Thermometer	1955.5 31 63.1	2085.5 31 67.3
Casella 3235		
No. 4	1908.4 31 61.6	1827.4 Add estimate for May 28 56.8 1884.2 31 60.8
Minimum after setting	1881.5 31 60.7	
Dry bulb	1938.0 31 62.5	1907.8 31 61.5
Relative humidity	1614 31 52	1690 31 55
Wind	175 31 5.6	203 31 6.5
Clouds	183 31 5.9	225 31 7.3

See note of July 1872 on state of psychrometer

Rain gauge A, on roof of chimney north of clock room.

Date	Time	Ounce	Inches
4	4¾ P.M.	72½	0.627
24	10 A.M.	178½	1.544
27	10½ A.M.	33¼	0.288
29	11½ A.M.	77	0.666
Total excluding rain of May 30 & 31		361¼	3.125

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Harvard College Observatory. May 1872.

Date	External Thermometer No. 4 7 A.M.	2 P.M.	9 P.M.	Mean	Casella 3235 2 P.M.	9 P.M.	Maximum after setting	Extreme temperatures Maximum set at 9 P.M.	Minimum set at 10 A.M.	Maximum Solar thermometer set at 4 P.M.	Solar thermometer after setting	Rainfall in inches. Gauge C examined at 10 A.M.	Remarks.
1	48.0	61.5	(46.7)	52.1	61.1	(47.2)	(47.8)	(66.0)	39.3	123.0	77.2	0.000	w Rw y< Sr U.
2	56.2	59.2	(54.2)	56.5	*59.0	*(54.3)	(54.0)	(61.5)	45.2	93.2	82.0	0.000	yw Showers after 10 A.M.
3		60.4	50.6				51.5	60.4	49.4	124.8	104.0	0.355	yw y> A3. zU. y< A9.
4	45.0	50.8	43.7	46.5			42.2	57.0	42.3	120.0	61.0	0.185	y l< Frequent showers. {A little thunder about 10½ A.M.}
5	43.5	(55.0)	(46.6)	48.4			(47.7)	(57.4)	(39.5)	(138.9)	(96.4)	(0.310)	Rcl y< A9 y> A5.
6		50.0	43.4				43.6	58.5	43.3	121.0	68.5	0.000	y Sc Kind light, variable: a little rain. Sr U.
7	54.8	73.0	(54.8)	60.9			(55.0)	(73.0)	42.2	144.4	103.1	0.010	w Rw y> A3.
8	53.7	79.0	59.8	64.2			59.7	78.7	(44.0)	135.6	107.6	(0.000)	Rpz
9	56.8	78.6	71.1	68.8			70.4	78.7	55.1	128.9	104.3	0.000	hz Thick haze, increasing.
10	72.4	80.7	53.0	68.7			57.0	80.7	66.1	(135.8)	(80.6)	0.000	Rch Sea-breeze towards night.
11	40.2	50.7	46.8	45.9			47.3	56.9	46.9	114.0	86.2	0.050	Rizl. y< A6. A little rain previous night.
12	45.0	(78.9)	59.5	61.1			59.8	78.3	(45.8)	132.8	94.6	0.008	Rhyz. Sr U y< 9. Parhelia at 5½ P.M.
13		59.3	52.6				53.0	60.0	54.3	120.2	90.0	0.000	Rwy y> N. y< U. Mouch haze.
14	49.0	57.6	50.3	52.3			51.0	60.6	47.2	126.0	97.0	0.000	Rw Sy. zU y<
15	50.5	62.8	(52.5)	55.3			(52.7)	(65.7)	46.4	134.0	72.0	0.000	Ryw. RzU. A few drops of rain about 4½ P.M.
16	49.2	60.0	(49.0)	52.7			(49.1)	(60.7)	43.4	127.0	107.0	0.000	zn Rw y A 4 zU.
17	51.5	57.2	50.2	53.0			50.8	60.6	42.2	126.0	100.2	0.000	Rw RzU Sy.
18	50.2	61.6	55.7	55.8			56.0	67.0	41.8	126.2	93.2	0.000	Rwz zU.
19	54.8	(54.5)	(53.0)	54.1			(53.8)	(62.0)	46.9	(92.9)	(56.0)	0.000	Rc ya Rainy: rain heavy about 1 P.M.
20		(71.0)	59.5				59.2	71.8	51.9	134.8	71.8	0.830	wr Very slight shower about 4 P.M. zU.
21	55.5	67.6	53.0	58.7			54.0	69.7	49.4	136.0	116.4	0.000	w Ry Sr U.
22	52.5	62.0	(56.7)	57.1			(57.5)	(65.5)	43.4	129.7	104.0	0.000	wr RyU.
23	53.8	(70.6)	57.2	60.5			57.1	69.0	52.2	(104.0)	(59.8)	0.390	wy Rain early in the morning & at times later.
24	59.0	62.1	57.6	59.6			57.5	69.5	53.9	134.7	99.0	0.030	z y< Ry N Sy U.
25	59.2	64.9	61.4	61.8			61.0	66.5	53.5	99.2	71.6	0.020	faw y> A4. Rz U. Frequent showers {some thunder}
26	57.7	(66.1)	56.4	60.1			56.7	70.2	50.0	(132.9)	(59.7)	0.225	Ryw RyU.
27	(57.2)	(64.4)	56.9	59.5			57.3	68.9	48.3	130.0	77.8	0.000	rw y< N yU. Some rain about 9 P.M.
28	53.5	66.9	(51.5)	57.3			(51.0)	(65.7)	50.0	(137.1)	(56.7)	0.405	yw SRy Sy Thunder showers in the afternoon.
29	51.5	64.0	57.8	57.8			58.0	64.2	42.5	137.6	104.7	†0.275	Ryw Sr U.
30	55.7	66.6	(53.6)	58.6			(53.9)	(70.7)	47.1	131.2	57.0	0.000	rw y< Ag. Afternoon & evening rainy.
31	52.3	55.9	55.3	54.5			55.0	58.2	50.7	86.7	75.0	0.420	y Rc Some rain Ry U.
Sums	1428.7	1972.9	1670.4	1541.8				2053.6	1474.2			3.513	Rainfall for month 3.51 inches.
Means	52.9	63.6	53.9	57.1				66.25	47.56				Mean temperature " " 57.1 degrees Fahrenheit.

Maximum " " " 80.7 May 10.
Minimum " " " 39.3 May 1.
— " — (reduced to standard of No. 4) 40.2.
Highest reading of solar thermometer 138.9 May 5.

Velocity of wind estimated in miles per hour: see notes of January and March 1872.

Observations in parentheses ( ) were not made at the regular time. The actual times are given below.

Date	Regular times	Actual times.
1	9 P.M.	9½ P.M.
2	9 P.M.	9½ P.M.
5	10 A.M., 2 P.M., 4 P.M., 9 P.M.	9¼ A.M., 12 M., 5 P.M., 9½ P.M.
7	9 P.M.	6 P.M.
8	10 A.M.	11 A.M.
10	4 P.M.	5½ P.M.
12	2 P.M.	12¾ P.M.
15	9 P.M.	9½ P.M.
16	9 P.M.	10⅚ P.M.
19	2 P.M., 4 P.M., 9 P.M.	1⅚ P.M., 4 1/12 P.M., 9⅙ P.M.
20	2 P.M.	3½ P.M.
22	9 P.M.	10¼ P.M.
23	2 P.M., 4 P.M.	1⅔ P.M., 6 P.M.
26	2 P.M., 4 P.M.	11½ A.M., 6 P.M.
27	7 A.M., 2 P.M.	7½ A.M., 2¼ P.M.
28	4 P.M., 9 P.M.	7 P.M., 10 P.M.
30	9 P.M.	10½ P.M.

They observations below were made at times, when the cloth about the wet bulb thermometer was apparently dry. The dry and wet bulbs evidently disagree in their indications.

Date	Time	Dry bulb	Wet bulb
2	10 A.M.	61.6	60.2
3	9⅚ A.M.	55.8	54.2
4	9⅚ A.M.	56.8	55.2
9	10 A.M.	70.0	69.0
11	9⅚ A.M.	52.4	51.0
13	10 A.M.	58.0	56.6
16	9⅚ A.M.	56.7	55.3
18	10 A.M.	62.0	60.7
19	10 A.M.	61.5	60.2
27	9⅚ A.M.	66.4	65.1
30	9¾ A.M.	64.5	63.1

Auroras noticed.

May 3, 9 P.M. Low faint arch.
10 P.M. Light among clouds.
" 24, 9 to 9½ P.M. Arch and streamers over clouds.
" 28, 10 P.M. Wide arch, wholly below Cassiopeia, with narrow dark space beneath.
(No other auroras recorded by Dr. Newcomb.)

Parhelia at 5½ P.M. May 12. Halo more than two thirds round the sun. Three mock suns, one above, one on each side.

* Casella 3235 removed (probably for use in regulating the South Clock, which was under repair at this time.)

† Gauge examined at 4 P.M. May 28, with the result 0.275. Gauge empty at 10 A.M. May 29.

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Meteorological Record of June 1872.

10 A.M.

Date	Barometer	Attached Thermometer		No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's Tables	Wind	Clouds
1	29.985	59.5		66.6	65.9	67.6	57.0	48	1e SW	1 M Pm Rs
2	29.970	60.2		59.6	58.8	60.6	51.1	47	8e NW	1 M Fm
3	30.086	59.1		60.1	59.4	61.3	51.8	48	5e N	8 M Pm Fm
4	29.883	60.4		66.8	65.7	67.4	59.9	62	5e S	10 Pm
5	29.508	58.5		49.6	48.7	50.5	49.0	89	18e NE	10 Pm: raining
6	29.724	59.3		52.7	52.0	53.7	51.4	84	10e NE	10 Pm
7	29.960	66.1		67.6	66.4	68.6	61.0	62	0 calm	9 Pm M Fm
8	29.705	66.1		56.8	56.0	57.7	55.8	88	8e E	10 Pm
9	29.800	64.2		66.3	65.0	66.5	60.2	70	1e NE	10 Pm
10	29.769	65.8		65.9	64.8	66.7	61.8	70	3e S	10 Pm
11	29.756	66.5		72.5	71.5	73.2	62.5	54	11e NW	6 M Fm
12	29.922	72.6		80.0	79.0	80.8	66.9	45	7e W	4 Pm Rm Pr
13	29.968	71.2		75.5	74.2	75.9	61.8	41	6e SW	9 Pm haze: thin
14	29.723	73.9		79.1	78.0	79.6	70.7	63	8e W	5 Pr Rs R M Fm
15	29.850	69.7		71.6	70.5	72.1	62.1	54	4e NW	4 Pr Rm Rs Fm
16	30.008	69.3		70.5	69.5	71.0	57.5	39	13e NE	10 Pm Rs: thin
17	30.172	68.1		73.4	72.2	73.8	61.2	45	1e NW	4 Pr R Rs
18	30.236	70.8		76.7	75.7	77.5	66.1	52	0 calm	1 Fm Rm
19	30.200	72.0		77.2	76.3	77.6	64.9	47	5e E	9 Pm Rm
20	30.231	72.1		76.8	76.0	77.1	67.9	60	8e NE	9 Pm Fm haze
21	30.156	73.2		82.0	80.9	82.9	73.4	62	4e S	0 Fm haze
22	30.032	77.4		82.9	82.0	83.8	71.2	51	4e N	3 Pm Pr M Fm
23	30.050	71.1		75.4	74.0	75.5	62.8	46	1e NE	5 Pr Pm Fm Rm
24	30.036	67.9		62.6	62.3	63.4	60.5	84	2e NE	10 Pm: a little quiet
25	(30.042)	(66.3)		(67.4)	(66.6)	(68.6)	(64.7)	(80)	(0 calm)	(10 Pm; thin; haze)
26	30.049	67.3		65.9	64.9	66.6	63.4	83	3e NE	10 Pm
27	30.152	66.4		68.0	67.5	68.4	62.0	67	1e NE	9 Pm M Fm: thin
28	30.104	70.1		77.1	75.7	78.0	72.8	77	1e S	8 Pm Fm
29	30.054	74.0		82.6	81.7	83.4	74.4	64	1e W	0 hazy
30	30.039	78.8		88.2	87.2	89.1	79.0	62	3e S	0 M haze

4 P.M.

Date	Barometer	Attached Thermometer		No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's Tables	Wind	Clouds
1	29.931	67.0		70.3		70.9	54.5	28	6e W	9 Pr Pm M Fm: thin
2	29.992	65.9		64.4		65.4	52.2	34	7e NW	8 M Pm Fm
3	30.059	65.0		60.0		61.0	50.8	44	6e E	1 Pr R M Fm
4	29.750	66.0		63.6		64.0	53.7	46	15e S	10 Pm
5	29.600	57.4		46.8		47.9	46.4	89	20e NE	10 Pm: raining
6	29.824	64.4		55.4		56.3	52.3	75	9e NE	10 Pm
7	29.914	67.4		62.2		63.2	57.9	70	6e E	10 Pm Fm
8	29.660	68.0		67.2		67.9	63.0	75	2e N	10 Pm
9	29.814	69.3		66.5		67.4	61.1	68	5e E	6 Pm Fm M R
10	29.648	67.7		69.4		69.4	64.0	73	6e S	10 Pm Fm
11	(29.799)	(76.0)		(76.6)		(77.2)	(63.7)	(44)	(13e W)	(0 Pm Fm)
12	29.832	82.0		86.9		87.6	70.9	41	6e SW	8 Pm Fm M
13	(29.895)	(78.3)		(79.2)		(79.2)	(63.6)	(38)	(7e SW)	(10 Pm R: thin)
14	29.713	80.8		74.6		73.8	71.0	86	2e E	10 Pm Fm: raining: some thunder
15	29.864	74.4		76.5		76.7	62.3	40	5e SW	10 Pm Rm Fm
16	30.032	72.7		68.1		68.9	58.0	48	4e E	10 Pm: thin
17	30.156	74.8		74.9		75.1	64.0	51	0e W	8 Pm M Fm Pr R Rm
18	30.178	76.0		75.3		76.0	63.0	45	2e E	7 Pm M Fm
19	30.164	77.3		76.7		76.7	64.4	48	5e SE	4 Pm M Rm Fm
20	30.223	77.7		76.0		76.0	67.0	64	7e E	6 Pm Fm M Pr Rm
21	(30.090)	(81.8)		(86.4)		(86.2)	(75.8)	(60)	(6e S)	(0 haze)
22	30.000	80.2		78.0		78.5	70.5	66	4e E	4 Rm Fm Pm haze
23	30.050	74.2		69.3		70.0	64.2	71	6e E	7 Pr Pm Fm Rs
24	30.018	71.0		65.7		66.5	61.8	75	5e E	10 Pr Pm: thin
25	30.067	70.2		64.9		65.8	62.5	82	5e E	10 Pm Fm
26	(30.080)	(69.9)		(64.9)		(65.7)	(61.2)	(76)	(7e NE)	(10 Pm)
27	30.140	70.0		66.5		67.2	60.9	68	6e NE	10 Pm
28	30.025	78.7		71.7		71.1	69.4	91	1e E	10 Pm M Fm: raining: some thunder
29	30.031	85.9		89.0		89.5	74.4	46	1e W	1 Pm Fm M haze
30	(29.978)	(87.0)		(87.1)		(86.9)	(76.3)	(60)	(1e S)	(8 Pm Pr R)

Sums of columns, number of observations, means, and reduction of barometer to the freezing point.	10 A.M.	4 P.M.
Barometer	899.170	898.527
	30	30
	29.972	29.951
	−.106	−.119
	29.866	29.832
Attached Thermometer	2037.9	2197.0
	30	30
	67.9	73.2
No. 4	2117.4	2134.1
	30	30
	70.6	71.1
Minimum after setting	2088.4	
	30	
	69.6	
Dry bulb	2138.9	2148.0
	30	30
	71.3	71.6
Relative humidity	1841	1802
	30	30
	61	60
Wind	142	175
	30	30
	4.7	5.8
Clouds	195	227
	30	30
	6.5	7.6

See note of July 1872 on state of psychrometer

Rain gauge A, on roof of shed north of Clerk Room

Date	Time	Ounces	Inches
3	12 M.	59	0.510
6	10¼ A.M.	33¾	2.896
13	11 A.M.	54	0.467
15	5 P.M.	50¾	0.439
21	4¼ P.M.	23¾	0.0214
30	7½ P.M.	53	0.459
Total		554¼	4.795

which includes rain of May 30 & 31.

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Harvard College Observatory. June 1872.

Date	External Thermometer No. 4 7 A.M.	2 P.M.	9 P.M.	Mean			Maximum after setting	Extreme temperatures Maximum set at 9 P.M.	Minimum set at 10 A.M.	Maximum solar thermometer set at 4 P.M.	Solar thermometer after setting	Rainfall in inches. Gauge C as emptied at 10 A.M.	Remarks.
1	56.4	70.3	62.9	63.2			62.6	70.4	48.0	136.8	96.9	0.060	zw y< Ag. yU {A few drops of rain in the evening: more rain later.
2		63.4	53.9				54.7	63.8	45.3	139.6	110.2	0.040	zw y< A10. Slight shower about 6½ P.M. RzU.
3	51.5	58.8	(51.0)	53.8			(52.0)	(61.0)	45.3	134.0	95.0	0.008	Rly y> N zU.
4	54.8	69.9	53.1	59.3			53.1	70.1	49.4	127.9	65.0	0.000	wy yl< N. Rain beginning about 5 P.M.
5	47.6	47.8	49.6	48.3			50.3	53.3	48.7	65.0	49.1	1.580	Northeast storm all day. {Wind heavy about 11½ A.M. perhaps 30 miles an hour or more
6	52.3	56.0	53.4	53.9			53.4	56.1	45.9	98.9	68.6	1.400	Rly Sz U. A little rain early.
7	57.5	(62.0)	62.0	60.5			61.6	70.0	51.4	141.9	76.2	0.000	Rwy y< yU.
8	56.3	63.8	57.2	59.1			57.3	66.0	54.3	98.3	83.0	0.120	yw y U A little rain early.
9	60.0	68.1	63.4	63.8			63.0	71.0	55.5	134.0	105.8	0.000	y Rw Sz BN y> U y9 yz< 9½
10		68.8	65.2				64.7	73.0	59.2	126.6	80.6	0.010	yw A little rain about 5 P.M.
11	65.2	76.4	69.0	70.2			68.5	76.9	58.3	(141.4)	(81.6)	0.005	Rhr Rz U.
12	70.0	86.7	(66.0)	74.2			(65.0)	(86.3)	62.2	149.8	130.0	0.000	h Rz Thunder showers after 5 P.M. Rz 11½.
13	65.5	78.9	66.1	70.2			66.7	79.0	60.9	(139.6)	(105.9)	0.320	Rhy Sz U
14	(73.5)	83.5	60.8	72.6			60.2	83.4	62.1	146.4	73.2	0.000	vh Rain with some thunder after 3½ P.M. y U.
15		76.5	67.1				67.3	76.7	58.1	146.1	92.8	0.450	h Sz y< A3. Ry U.
16	67.0	(70.8)	61.9	66.9			61.9	70.8	59.9	138.0	90.0	0.000	Rhy
17	(68.3)	76.7	(68.4)	71.1			(68.7)	(77.8)	58.6	146.9	85.6	0.000	vhy v U.
18	68.0	79.4	(68.6)	72.0			(68.9)	(81.6)	58.0	149.2	84.4	0.000	vh y< U.
19	68.8	77.9	68.0	71.6			67.6	79.0	64.1	145.9	109.3	0.000	vy Rz Sz U.
20	69.8	74.6	68.1	70.8			68.4	80.0	65.0	145.0	106.5	0.020	hz Sz Showers early. Rz U.
21	70.5	88.9	71.3	76.9			71.3	88.3	64.0	(142.7)	(122.8)	0.000	rh Sz Rz U.
22	71.8	79.8	67.2	72.9			67.2	83.8	64.9	147.3	125.8	0.000	Sz Rhr
23	66.3	(71.2)	60.2	65.9			61.0	74.7	63.8	142.9	118.2	0.000	Ryw y< A4. Evening somewhat misty.
24	(60.5)	71.0	60.1	63.9			61.0	70.9	58.4	133.3	97.0	0.000	v Rw Ry U
25	61.5	66.0	(61.3)	62.9			(61.0)	(72.4)	(59.2)	121.0	79.2	(0.000)	y Sl A little rain after noon. Evening rainy.
26	62.2	(66.9)	(59.4)	62.8			(59.6)	(67.3)	59.8	(97.2)	(71.9)	0.530	y Sl A few drops of rain. y U.
27		71.6	64.0				63.9	72.0	58.3	142.9	80.0	0.005	y Sl Sz Rl & U.
28	62.3	85.7	(71.0)	73.0			(70.4)	(87.1)	62.9	144.8	74.0	0.000	y Rw Thunder shower about 4 P.M. y> A4 y< A6 y> A9.
29	67.2	87.6	77.6	77.5			77.3	88.0	65.1	145.0	123.0	0.090	h Rz y< N Ry> U.
30	79.8	(90.0)	82.0	83.9			81.3	91.9	71.8	(153.2)	(81.0)	0.000	h Rz Rz U.
Sums	1654.6	2189.0	1909.8	1741.2				2242.6	1738.4			4.638	
Means	63.6	73.0	63.7	67.0				74.75	57.95				

Rainfall for month 4.64 inches.
Mean temperature " " 67.0 Fahrenheit.
Maximum " " " 94.9 June 30
Minimum " " " 45.3 June 2 and 3
" (reduced to standard of No. 4) 46.3
Highest reading of solar thermometer 153.2 June 30

Velocity of wind estimated in miles per hour: see notes of January and March 1872.

Observations in parentheses ( ) were not made at the regular times. The actual times are given below.

Date	Regular times	Actual times.
3	9 P.M.	10½ P.M.
7	2 P.M.	3 P.M.
11	4 P.M.	5¾ P.M.
12	9 P.M.	11 P.M.
13	4 P.M.	4½ P.M.
14	7 A.M.	7½ A.M.
16	2 P.M.	1⅔ P.M.
17	7 A.M., 9 P.M.	7½ A.M., 9¼ P.M.
18	9 P.M.	9½ P.M.
21	4 P.M.	4½ P.M.
23	2 P.M.	1⅚ P.M.
24	7 A.M.	7½ A.M.
25	10 A.M., 9 P.M.	9 A.M., 11⅚ P.M.
26	2 P.M., 4 P.M., 9 P.M.	1 P.M., 5½ P.M., 12⅔ (A.M. June 27)
28	6 P.M.	9¾ P.M.
30	2 P.M., 4 P.M.	1¼ P.M., 7¼ P.M.

The observations below were made at times when the cloth about the wet bulb of the psychrometer was apparently dry. (See note of May 1872.)

Date	Time	Dry bulb	Wet bulb
1	9⅚ A.M.	67.8	66.6
2	9 11/12 A.M.	60.1	59.0
3	10 A.M.	60.3	59.0
11	9⅚ A.M.	73.0	71.9
13	9⅚ A.M.	75.7	74.8
17	9⅚ A.M.	74.0	73.0
18	9⅚ A.M.	75.3	74.6
22	9⅚ A.M.	83.1	82.0
23	9⅚ A.M.	74.8	73.9

Auroras noticed

June 3, about 10 P.M. Arch tolerably distinct, afterwards fading out.

June 9, 9½ P.M. Extensive aurora, faint among increasing clouds and haze.

June 6. Faint aurora recorded by L. Trowbridge.

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July 1872. Meteorological Record of

10 A.M.

Date	Barometer	Attached Thermometer	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's Tables (see note)	Wind	Clouds
1	29.974	83.0	88.1	87.2	88.6	76.5	57	1e SW	4 Pm Pr R
2	29.884	82.5	86.4	85.5	86.4	74.6	58	2e N	4 Fm Pr M Rs Rm
3	(29.935)	(72.9)	(77.9)	(76.6)	(79.0)	(72.2)	(74)	(2e S)	(1 Pr Pm Fm)
4	(29.832)	(79.2)	(88.9)	(88.0)	(89.0)	(77.2)	(59)	(3e SW)	(0 Fm Rs)
5	29.904	77.7	82.2	80.7	82.2	74.2	70	3e SW	4 M Fm Rs
6	30.058	73.2	76.4	75.4	76.8	65.8	56	5e N	0 Pm Rs
7	30.120	71.8	80.0	78.5	80.0	68.6	56	1e N	9 Pm Fm
8	30.234	74.9	79.9	78.6	80.1	65.8	45	1e N	0 Fm haze
9	30.258	73.9	79.6	78.2	79.8	71.8	70	5e S	6 Pr M Fm
10	30.100	77.2	82.5	81.0	82.8	74.8	70	6e SW	10 Pm M Fm
11	29.864	78.2	80.4	79.5	81.1	73.0	69	3e NW	3 M Fm R
12	29.980	78.8	83.3	81.7	83.2	73.0	63	0e NW	10 Pm: thin
13	30.036	74.0	75.1	74.2	75.8	64.0	52	4e N	1 M Fm
14									
15	(29.992)	(79.9)	(85.2)	(84.3)	(85.7)	(75.4)	(63)	(4e SW)	(8 Pm Pr R Rs)
16	29.832	79.0	83.8	82.8	84.3	76.6	72	9e SW	8 Pm M Fm R
17	29.839	79.2	82.3	81.9	82.4	75.7	75	7e NE	2 Pm M Fm Rm Rs
18	29.935	70.0	69.3	68.5	70.1	66.2	85	5e N	10 Pm
19	29.872	73.0	78.0	77.2	78.9	71.7	72	5e N	7 Pm Pr R Rs Rm M Fm
20	29.945	70.7	75.7	74.8	*77.0	60.0	*34	2e N	0 (?)* M
21	29.950	73.1	79.6	*78.0	78.5	65.7	50	7e SW	(?) R M Rs
22	29.695	71.4	68.4	67.1	68.9	66.5	94	4e SE	(?) Pm
23	30.032	69.0	70.6	70.1	71.6	58.7	45	3e NW	0 (?) Rs
24	29.850	70.1	69.0	67.0	69.0	65.0	85	3e SW	9 Pm
25	30.100	69.5	72.9	72.1	74.0	60.1	43	4e NE	(?) M Fm
26	30.013	69.5	64.1	63.1	65.4	62.5	91	7e SW	10 Pm
27	29.843	62.1	70.0	69.1	71.0	61.1	57	10e NW	(?) R Fm
28	(30.075)	(66.5)	(68.2)	(68.9)	(70.5)	(59.0)	(50)	(1e NW)	(0 Pm)
29	30.050	71.4	80.6	79.8	78.8	69.0	62	7e W	2 Rs M
30	29.950	73.8	73.5	*70.0	74.0	63.4	55	8e NE	3 M
31	30.030	69.5	71.5	70.5	71.5	61.0	55	1e NW	1 Pr Rs

4 P.M.

Date	Barometer	Attached Thermometer	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's Tables (see note)	Wind	Clouds
1	29.858	87.5	92.0		91.8	77.0	51	5e SW	5 Pr M Fm
2	29.925	80.6	70.4		71.0	64.8	74	6e E	4 Pr M Pm Rs
3	(29.870)	(81.0)	(80.4)		(80.4)	(74.3)	(77)	(5e SW)	(9 Pm Fm)
4	29.861	82.8	71.1		72.0	68.9	89	2e W	10 Pm; raining; some thunder
5	29.908	85.8	86.0		86.4	73.1	53	6e W	2 M Fm
6	30.060	79.8	79.7		80.0	66.6	49	0e E	1 M Fm
7									
8	30.199	80.0	77.4		77.7	68.8	65	7e E	8 Pm M Fm
9	30.210	83.0	84.4		84.4	72.2	55	8e SW	9 Pr M Fm
10	29.981	82.4	83.4		83.3	74.8	68	15e SW	10 Pm Fm
11	29.855	85.5	85.7		86.1	70.0	43	9e NW	6 Pr R M Fm
12	29.807	84.1	83.8		83.6	74.3	65	3e SW	10 Pm M Fm
13	30.171	77.0	76.5		77.0	60.6	36	8e N	0 Pr Rs R Fm
14									
15	29.966	86.1	85.5		84.8	75.8	67	4e SW	10 Pm M Fm Pr: {some rain and thunder}
16	29.799	85.0	79.5		78.8	73.6	81	8e SW	10 Pm Fm: raining; a little thunder
17	29.854	79.1	73.6		73.8	69.1	82	6e E	10 Pm M Rm
18	29.887	73.0	70.4		71.0	66.6	83	4e E	10 Pm
19	29.883	80.5	83.9		84.3	70.1	49	8e N	6 Pr Pr Rs M Fm Rm
20	29.936	80.0	82.0		82.1	64.8	69	5e W	2 M R
21	29.863	78.4	79.4		79.8	63.7	40	10e SW	3 R Pm
22	29.732	71.4	68.5		*68.8	65.7	*90	12e N	2 M Fm
23	30.000	75.5	76.5		76.9	63.7	48	4e SW	2 R M Fm
24	29.860	74.2	74.9		75.7	67.8	68	2e SE	0 M Pm
25	30.000	74.9	76.8		77.0	60.0	34	6e NW	1 R Fm Rs
26	*30.003	68.2	59.1		61.5	58.8	91	6e SE	9 M Pm
27	29.875	73.0	75.5		76.0	59.2	69	8e N	5 Pm Rs
28	30.058	73.9	76.5		76.8	64.4	50	4e SW	1 R Fm
29	29.995	79.4	81.4		81.9	72.1	63	3e W	5 Rs Pm
30	29.985	76.4	80.5		*81.3	70.9	*60	7e NW	3 M Fm
31	29.990	73.8	71.5		71.4	*60.8	*60	5e SW	6 Pm

Sums of columns, number of observations, means, and reduction of barometer to the freezing point.

	10 A.M.	4 P.M.
Barometer	899.182	868.391
	30	29
	29.973	29.945
	−.120	−.135
	29.853	29.810
Attached thermometer	2215.8	2292.3
	30	29
	73.8	79.0
No. 4	2323.4	2266.6
	30	29
	77.4	78.2
Minimum after setting	2290.3	
	30	
	76.3	
Dry bulb	2336.4	2275.6
	30	29
	77.9	78.5
Relative humidity	1887	1829
	30	29
	63	63
Wind	123	176
	30	29
	4.1	6.1
Clouds	112	159
	26	29
	4.3	5.5

See note on state of psychrometer

Main gauge A, on roof of shed north of Clerk Room.

Date	Time	Ounces	Inches
5	10 A.M.	176½	1.527
9	11 A.M.	46½	0.406
12	10 A.M.	26	0.225
13	9½ A.M.	19¼	0.167
16	10½ A.M.	48¾	0.422
17	10½ A.M.		0.061
19	4 P.M.	7½	0.073
22	10 A.M.	77	0.666
24	10 A.M.	56	0.484
26	10 A.M.	9	0.078
26	4 P.M.	74	0.640
30	10 A.M.	93½	0.809
Total		642	5.552

There is some disagreement between gauges A and C according to the observations of Lt. J. G. Trowbridge in the latter part of the month. The record of gauge C will be taken as the standard, as usual.

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Harvard College Observatory. July 1872.

Date	External Thermometer No. 4 7 A.M.	2 P.M.	9 P.M.	Mean			Maximum after setting	Extreme temperatures. Maximum set at 9 P.M.	Minimum set at 10 A.M.	Maximum Solar thermometer set at 4 P.M.	Solar thermometer after setting	Rainfall on shelves. Gauge C examined at 10 A.M.	Remarks.
1		92.9	82.7				82.0	92.3	72.0	152.8	132.0	0.000	h Re Sy U
2	(82.7)	71.3					(76.3)	(87.9)	76.0	152.1	118.0	0.000	Rhr Slight shower about 2½ P.M. h > y > A 3 y < U Sy U
3	81.2	(84.4)	76.2	80.6			76.0	86.0	(62.2)	(149.7)	(78.9)	(0.000)	Rhy wk A 9 y < N Ry U y < A 10. Distant lightning in the west in the evening; flashes very frequent.
4	77.0	89.0	70.8	78.9			70.3	93.9	(70.4)	150.4	70.8	(0.000)	hr. Heavy thunder-showers; for details see below.
5	73.5	86.1	76.9	78.8			76.2	85.5	67.1	147.0	128.9	1.540	hr. Sy U
6		80.6	72.2				72.3	80.5	64.5	145.8	100.2	0.000	r Rh r U
7	71.2	(82.2)	74.3	75.9			74.3	83.0	61.3	(142.8)	(67.3)	0.000	Reh r U
8	71.0	81.3	65.0	72.4			65.7	82.0	64.5	142.6	119.8	0.000	Rhy y < N. Thunder showers after 5 P.M. Sy g.
9	68.8	84.0	72.3	75.0			72.5	84.0	61.0	141.8	105.0	0.400	Syh y > N y < N r U
10	77.2	87.4	71.5	78.7			72.0	86.8	68.3	148.6	91.2	0.000	Ryu Thunder showers after 5 P.M.
11	73.6	80.3	76.8	76.9			76.6	85.4	70.0	150.8	130.2	0.140	h Ry Shower at about 1 P.M. r U.
12	73.8	87.9	69.2	77.0			69.2	89.0	68.3	159.5	89.6	0.090	Ryu Thunder showers after 5 P.M. y U.
13	69.0								66.0	139.7	125.0	0.170	rw
14	70.0												
15	(78.8)	88.8	78.0	81.9			76.7	89.2	(62.7)	147.5	84.1	(0.000)	uRy {Thunder shower for about 15 minutes beginning a little before 4 P.M.: wind perhaps 15 miles per hour at times} Sy U
16	78.0	89.4	74.8	80.7			74.7	89.0	68.1	152.2	77.3	0.430	u Thunder shower about 4 P.M. Some rain later. Sy U.
17	76.5	80.1	68.1	74.9			68.2	83.8	71.1	143.0	77.2	0.060	Reh yl < A 10. yf U.
18	64.7	71.2	67.5	67.8			67.9	72.2	62.9	108.4	82.9	0.005	ym
19	64.4	83.7	72.6	73.6			72.4	83.3	66.8	149.8	130.7	0.070	Rh A 10 wSy U {A. Searle absent from the Observatory for the rest of July}
20	66.5	80.5	72.5	73.2			76.8	*81.5	67.1	141.4	128.0	0.000	
21	68.5	81.9	69.5	73.3			†76.0	82.3	†71.0	†120.5	61.1	0.000	
22	66.2	67.8	66.6	66.9			70.1	†77.2	60.0			0.550	{Rained in night until 9½ A.M.; began again at 11½ A.M. continuing to 2 P.M. The sun shone in the afternoon.
23	62.5	77.0	66.5	68.7			70.1	77.0	62.5	100.0	89.5	0.080	
24	63.2	73.9	67.9	68.3			†72.0	*74.8	54.5	143.8	120.1	0.350	
25	63.8	76.0	68.0	69.3			66.0	*77.0	59.5	138.7	124.0	0.000	
26	65.7	61.5	58.7	62.0			*62.5	†61.0	50.0	†119.4	63.0	0.070	Rained from 6½ A.M. to 3 P.M.
27	63.0	74.5	64.3	67.3			61.0	*78.4	56.2	138.0	125.0	0.560	
28	59.7	74.9	66.2	66.9			66.8	*78.9	(56.0)	135.4	117.9	(0.000)	
29	66.8	86.8	71.0	74.9			71.6	*86.8	67.0	144.0	110.0	0.000	Thunder storm between 11 P.M. & midnight, also rain.
30	67.6	76.2	66.1	70.0			65.0	*78.2	51.0	161.4	116.2	0.650	
31	63.2	74.5	63.5	67.1			62.0	*74.0	58.5	125.0	77.5	0.000	
Sums	2028.1	2326.1	1969.7	1901.0				2300.9	1916.5			5.165	
Means	69.9	80.2	70.3	73.1				79.34	63.88				

Rainfall for month 5.17 inches.
Mean temperature " " 73.1 Fahrenheit.
Maximum " " " 93.9 " July 4.
Minimum " " " 51.0 " " 30.
" (reduced to standard of No. 4) 52.1 "
Highest reading of solar thermometer 161.4 " July 30.

Velocity of wind estimated in miles per hour: see notes of January and March 1872.

Observations in parentheses ( ) were not made at the regular times. The actual times are given below.

Date	Regular times.	Actual times.
2	7 A.M.	7½ A.M.
3	10 A.M., 2 P.M., 4 P.M.	10½ A.M., 1½ P.M., 7¼ P.M.
4	10 A.M.	10¼ A.M.
7	2 P.M., 4 P.M.	1¼ P.M., 9 P.M.
15	7 A.M., 10 A.M.	7½ A.M., 10½ A.M.
28	10 A.M.	10½ A.M.

* A. Searle was absent from the Observatory from early on July 20 to about noon of August 21. During this time the 7 A.M. observation is, as before and since, by Bridget Henry. The remainder are mostly by G. Trowelot. Some, (the original record of which is in a smaller hand,) are by L. Trowelot.

For remarks on these observations, see notes in the original record, both below the observations, and at the end of the volume. Much doubt attaches to many of the observations, and some have been corrected conjecturally in this copy. These are marked with an asterisk. Others, seemingly uncorrected, but not furnishing any means of correction, are marked with an obelisk.

The following observations were made for comparison of the dry and wet bulb thermometers of the psychrometer. (See notes of May & June, 1872.) July 1, a rag was tied round the dry bulb, and for four days the thermometers were compared with each other when both rags were dry and also when both were wet. After the rain of July 4, the rag was removed from the dry bulb.

Date	Time.	State of bulbs.	Dry bulb.	Wet bulb.
1	8 2/3 A.M.	13th dry	83.7	83.0
1	10 1/8 A.M.	" wet	78.0	76.9
2	10 A.M.	" dry	86.4	85.8
2	10 1/3 A.M.	" wet	76.0	74.8
3	10 5/12 A.M.	" dry	78.6	78.0
3	10 7/12 A.M.	" wet	73.8	72.1
4	10 1/6 A.M.	" dry	89.0	88.3
4	10 5/6 A.M.	" wet	79.5	78.2
5	10 A.M.	" dry	82.8	82.0
6	9 5/6 A.M.	" "	77.0	76.0
9	9 5/6 A.M.	" "	79.1	78.4
10	9 11/12 A.M.	" "	82.2	81.3
13	9 2/3 A.M.	" "	75.7	74.6
16	9 2/3 A.M.	" "	84.8	83.9
17	9 11/12 A.M.	" "	83.9	83.0

By the observations of the first seven months of 1872 for comparison of psychrometers we have approximately

Dry bulb (between 20° and 30°) above No. 4 1°.20
" " (between 30° and 40°) above No. 4 1.00
" " (between 40° and 50°) above No. 4 1.10
" " (between 50° and 60°) above No. 4 0°.80; above wet bulb 1°.45
" " (between 60° and 70°) above No. 4 0°.80; above wet bulb 1°.29
" " (between 70° and 80°) above No. 4 0.60; above wet bulb 0°.99
" " (between 80° and 90°) above wet bulb 0°.83

Observations of 9 o'clock P.M. not taken into account.

The above humidity table for 1872 has been computed after reducing the dry bulb to the wet bulb according to the above figures.

Auroras noticed.

July 7, 9½ P.M. Some aurora.
16, 9¼ P.M. Some appearance of aurora.
27, between 8½ P.M. and midnight. Arch and streamers very brilliant.

Besides these, auroras were noticed by A. Searle at Lake George July 20, and at Birmingham, N.Y., July 30. L. Trowelot reads an aurora July 20 at Cambridge.

Meteor about five times the brightness of Jupiter seen to fall vertically through Cunes Venatici about 9 P.M. July 31, by A. Searle at Birmingham, N.Y.

Thunder shower of July 4.

Beginning about 2 P.M. wind strong south of west; lightning frequent, rather near; hail in stones nearly spherical, half an inch in diameter in many cases. Hail for about 5 minutes at about 2½ P.M.; storm then renewed with wind more northerly; much rain and lightning; holding up at 2¾ P.M. A third shower began at about 2¾ P.M. with wind still more northerly; barometer rising; the lowest point noticed was 29.800. Gauge C at 3½ P.M., 1 hour from beginning of storm, gave 1.20 inches. Rain at this time moderate. Wind coming back from NW to W. Clouds throughout the showers simple Cu-N-Cu with little hardness of outline. Wind SE by 5 P.M. Moderate rain at times in the evening.

* July 10, about 6¾ P.M. there was a very intense flash of lightning followed, several seconds later, by a very heavy peal of thunder. Many streaks of lightning at once, repeatedly, later in the evening.

about 2¼ P.M. Rain held up suddenly at 2 11/12 P.M. and began again 2 minutes later: barometer at 3 A.M. 29.850. Gauge C at 3½ P.M., 1 hour from beginning of storm, gave 1.20 inches. Rain at this time moderate. Wind coming back from NW to W. Clouds throughout the showers simple Cu-N-Cu with little hardness of outline. Wind SE by 5 P.M. Moderate rain at times in the evening.

1872phae.proj...38825

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August 1872. Meteorological Record of

10 A.M.

Date	Barometer	Attached Thermometer	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Regnault's tables (see note for July)	Wind	Clouds
1	30.015	69.4	70.7	69.8	71.1	62.5	63	3e NW	0 Fm
2	30.025	69.3	73.8	72.0	73.8	65.5	65	3e SW	9 M
3	29.934	69.2	67.1	66.0	67.6	64.9	92	2e S	10 haze
4	30.174	65.9	63.5	62.4	64.6	59.9	81	2e NE	8 M
5	30.330	67.3	70.0	69.5	71.0	63.8	69	1e SE	1 M
6	30.233	69.1	74.4	72.5	74.8	65.9	64	3e SW	3 R Fm
7	(30.227)	(77.0)	(83.7)	(81.7)	(83.7)	(73.2)	(63)	(5e SW)	(3 R M)
8									
9	30.216	78.0	85.5	84.0	85.7	76.2	66	3e SW	0
10	30.112	75.5	80.7	79.8	80.1	69.0	57	7e SW	0
11	(30.108)	(77.4)	(82.3)	(80.6)	(81.0)	(74.5)	(75)	(2e SW)	(1 Pm)
12	30.118	77.4	80.6	78.8	80.5	74.3	76	2e S	2 Pm
13	30.060	74.3	78.2	76.0	76.7	71.0	78	2e E	2 Fm Pm
14	30.060	70.5	77.7	77.0	78.0	73.5	84	2e SW	10 R Pm
15	30.080	75.0	80.0	78.0	80.6	73.5	73	3e NW	5 R Rs Fm
16	30.190	71.5	79.7	78.5	79.2	73.0	77	2e W	8 Pm
17	30.003	76.5	75.5	73.8	76.5			4e SW	7 Pm
18	30.172	76.8	80.5	79.4	79.9	72.6	73	2e SW	2 R Pm
19	30.192	77.6	79.9	78.8	81.2	75.0	77	3e SW	10 R Fm Pm
20	30.325	75.2	76.5	75.2	77.7	67.9	61	3e NE	4 Fm Pm
21	30.225	73.0	74.1	73.0	74.9	68.8	76	2e SE	3 Pm Fm
22	29.973	73.9	77.3	76.0	77.6	73.1	84	4e S	10 Pm
23	29.900	76.0	77.5	77.0	78.8	69.8	65	9e N	0 Pm Fm
24	30.067	70.3	73.6	73.1	74.9	65.4	61	0e SE	0 Pm Fm
25	30.073	72.3	78.2	77.5	79.4	72.0	72	3e SW	10 Pm Rm
26	30.020	72.9	75.8	74.0	76.1	68.9	71	4e W	4 Pm Fm
27	29.849	74.0	76.8	75.4	77.0	72.7	85	7e SW	10 Pm Fm : raining
28	30.008	68.5	71.0	70.0	71.9	59.4	47	6e NW	7 Pm Rm Fm
29	30.058	66.2	67.0	66.1	67.8	56.8	51	8e SE	2 Pm Rm
30	29.518	65.8	60.0	59.8	61.1	59.7	52	18e E	10 Pm : raining
31	29.649	60.4	58.7	57.9	59.9	53.4	70	6e W	9 Pm Fm

4 P.M.

Date	Barometer	Attached Thermometer	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Regnault's tables (see note for July)	Wind	Clouds
1	30.010	74.1	71.4		71.7	57.8	41	3e SE	1 M
2	30.008	75.3	75.5		*76.0	*62.3	45	4e SW	8 Fm Rs
3	30.011	70.0	64.0		64.5			4e N	10 haze
4	30.200	69.8	67.8		67.2	61.0	74	3e SE	2 M R
5	30.283	70.5	70.5		*71.2	61.6	59	3e SE	
6	30.193	78.3	80.5		80.5	69.0	56	5e SW	2 Fm
7									
8									
9	30.184	88.5	89.0		88.8	74.3	50	7e SW	2 Fm
10	30.003	82.5	83.3		82.5	71.3	58	5e SW	1 Pm
11	30.090	81.2	76.8		77.2	72.9	85	3e SE	8 Pm
12	30.110	78.0	71.7		71.7	67.2	82	3e E	8 Pm
13	30.000	81.0	85.0		84.0	76.8	73	5e S	5 Pm
14									
15	30.023	83.7	80.1		*80.0	75.2	83	3e W	5 Pm R
16	30.110	76.5	73.2		*73.0	67.0	76	2e E	8 Pm
17									
18	30.141	82.1			83.5	72.2	60	2e NW	1 Fm
19	30.187	84.8	83.1		83.0	74.4	67	2e NE	5 Pm
20									
21	30.152	73.4	67.7		68.6	64.7	86	8e E	10 Pm Fm
22	29.890	77.0	67.2		68.0	66.6	99	1e SW	10 Pm : rain, thunder, lightning
23	29.907	78.7	79.5		80.1	69.1	57	2e SE	3 Pm M Fm
24	30.052	78.6	79.2		79.8	65.7	47	1e SW	0 Pm Fm Rs
25	30.031	79.2	81.3		81.5	68.4	50	5e SW	5 Pm M Rm
26	(29.978)	(79.8)	(80.1)		(80.0)	(72.0)	(69)	(8e SW)	(3 Pm M Fm)
27	29.776	75.3	74.6		75.1	67.0	67	14e N	9 Pm M Fm
28	29.985	73.0	73.0		73.7	59.2	40	13e N	5 Pm Rm M
29	30.000	70.9	66.5		67.1	59.5	67	9e SE	10 Pm R Rm Fm
30	29.520	66.9	64.5		65.4	61.4	85	6e NW	9 Pm Fm
31	29.668	65.4	64.9		65.6	55.7	55	11e NW	6 M Pm Fm Rm

Sums of columns, number of observations, means, and reduction of barometer to the freezing point.	10 A.M.	4 P.M.
Barometer	901.914	780.512
	30	26
	30.064	30.020
	−.117	−.129
	29.947	29.891
Attached Thermometer	2166.2	1995.5
	30	26
	72.2	76.7
No. 4	2249.8	1870.4
	30	25
	75.0	74.8
Minimum after setting	2213.6	
	30	
	73.8	
Dry bulb	2262.5	1959.7
	30	26
	75.4	75.4
Relative humidity	2028	1631
	29	25
	70	65
Wind	121	132
	30	26
	4.0	5.1
Clouds	150	136
	30	25
	5.0	5.4

See note 4 July 1872 on state of psychrometer

Rain gauge A on roof of shed north of Clock Room.

Date	Time	Ounces	Inches
1	10 A.M.	2	0.017
3	10 A.M.	32	0.277
12	not given	0½	0.004
13	10 A.M.	48¾	0.422
14	10 A.M.	27¼	0.236
15	10 A.M.	154	1.332
17	10 A.M.	442	3.824
19	10 A.M.	2	0.017
23	10½ A.M.	302¾	2.619
31	10 A.M.	321½	2.781
Total		1332¾	11.529

The discrepancy between gauge A and gauge C is mainly in the measurement of Aug. 17, when it is probable that some mistake was made in weighing the large quantity of water in gauge A. As the water in gauge C was measured with the measuring glass a mistake there is not so likely. Perhaps the weight of the bottle of gauge A was neglected.

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Harvard College Observatory. August 1872.

Date	External Thermometer No. 4 7 A.M.	2 P.M.	9 P.M.	Mean			Maximum after setting	Extreme temperatures. Maximum set at 9 P.M.	Minimum set at 10 A.M.	Maximum solar thermometer set at 4 P.M.	Solar thermometer in inches. after setting	Rainfall in inches. Gauge C examined at 10 A.M.
1	64.7	(76.9)	63.9	68.5					56.0	140.5	115.0	0.010
2	64.0	77.0	66.5	69.2					58.9	140.0	115.8	0.000
3	63.7	65.8	56.0	61.8					60.9	†98.5	78.8	0.280
4	60.0	68.5	61.5	63.3					56.5	137.8	116.1	0.000
5	59.2		64.9						52.8	136.8	122.5	0.000
6	63.0		75.6						58.0	136.5	111.6	0.000
7	69.8								(65.2)			(0.000)
8	71.2											
9	72.3								66.5			0.000
10	70.7	86.1	74.0	76.9					65.0	141.0	122.0	0.000
11	72.5	81.8	71.0	75.1					(67.7)	145.5	80.0	(0.000)
12	75.3	79.0	67.7	74.0					69.5	137.5	85.0	0.020
13	66.2	84.0	76.3	75.5					66.0	132.3	100.5	0.350
14	72.8	81.5							69.8			0.160
15		82.8	73.5						66.8	150.0	84.5	1.350
16	73.5	73.7	67.9	71.7					76.4	135.0	73.5	0.235
17	75.3	79.9	76.2	77.1					66.5			2.460
18	74.7	83.5	74.4	77.5					68.2	146.4	125.0	0.050
19	75.0	86.5	75.0	78.8					69.4	145.2	82.5	0.030
20	68.7	76.0	69.5	71.4					67.0			‡0.100
21	67.8	69.9	67.8	68.5			67.7	73.6	64.5	134.5	71.6	0.000
22	72.2	74.0	66.9	71.0			67.0	82.7	66.4	140.9	66.5	§0.000
23	74.8	80.7	69.5	75.0			69.4	80.9	64.8	148.0	121.0	2.537
24	71.3	78.7	69.3	73.1			70.0	78.8	60.1	138.8	120.0	0.000
25	67.7	(81.4)	71.6	73.6			71.9	82.8	62.7	142.7	116.9	0.000
26	70.0	(79.8)	71.5	73.8			71.0	82.3	64.0	(141.5)	(106.5)	0.000
27	70.0	76.1							66.2	133.2	85.8	0.000
28	61.5	72.8	63.8	66.0			64.0	73.5	57.8	147.2	116.8	0.033
29		68.8	63.6				64.4	68.5	52.0	132.8	88.7	0.000
30	55.2	61.4	56.5	57.7			57.7	64.8	57.2	109.7	90.0	2.846
31	50.2	64.6	58.3	57.7			58.9	65.0	48.2	130.7	88.9	0.132
Sums	1973.3	1991.2	1772.7	1557.2				752.4	1891.0			§10.593
Means	68.0	76.6	68.2	70.8				75.24	63.03			

Readings marked with a cross are incorrect and not worth correcting conjecturally, however the readings given in the original are to Aug. 21, when the regular observer returned. If any portable that the readings given in the original are of the right order of magnitude, but the decimal fractions could not be determined with certainty.

Velocity of wind estimated in miles per hour: see notes of January and March, 1872.

Observations in parentheses ( ) were not made at the regular times. The actual times are given below.		
Date	Regular times.	Actual times.
1	2 P.M.	2½ P.M.
7	10 A.M.	12 M.
11	10 A.M.	10½ A.M.
25	2 P.M.	1 P.M.
26	2 P.M., 4 P.M.	12 M., 5 P.M.

*† A. Searle was absent from the Observatory from early on July 20 to about noon of August 21. During this time the 7 A.M. observation is, as before and since, by Bridget Henry. The remainder are mostly by G. Trouvelot. Some, (the original record of which is in a smaller hand,) are by L. Trouvelot.

For remarks on these observations, see notes in the original record, both below the observations, and at the end of the volume; also remarks in the volume following the observations for 1871. Much doubt attaches to many of the observations, and some have been corrected conjecturally in this copy. These are marked with an asterisk. Others, seemingly incorrect, but not furnishing any means of correction, are marked with an obelisk. The readings of the maximum thermometer are omitted in this copy.

‡ Measuring glass came to pieces while in use for this measurement. For the rest of the month, the water from gauge C was weighed and the corresponding number of hundredths of an inch obtained by computation.

§ Water answering to a rainfall of 0.375 inches was found in the upper cylinder round the bottle of gauge C on August 22. This is probably the overflow from the bottle, belonging to some previous day. If this amount is added to 10.593 we have 10.968 as the rainfall for the month according to gauge C.

Remarks.

Shooting stars numerous after 10 P.M.

Shower about 6 P.M., with thunder in the distance. Severe thunder storm about 6 P.M.: telegraph offices broken; storm came back after midnight, and towards 4 A.M., Aug. 15, the lightning struck several times.

yw

Heavy thunder showers after 2 P.M.
yw { Bottle of gauge C overflowing at 4 P.M. } y2l { Cleared off in the night following
Rain stopped before 6 P.M.

Rch r2l

Rch R.2l

y Rw

Rsh

w { Some showers beginning at 10 A.M. } y > N. r2l.

Rrw

r Rl y < N. { Rain beginning about 9 P.M. }

{ Heavy rain early in the day. Showers later. Wind N. afternoon } y > N4. r2l.

Rsh r2l.

Rainfall for month §10.97 inches.

Mean temperature " " 70.8 Fahrenheit.

Maximum " " " in sunshine: about 87 August 10 or 19.

Minimum " " " 48.2 August 31.

(reduced to standard of No. 4) 49.4

Highest reading of solar thermometer 150.0 Aug. 15

Auroras noticed.

Aug. 25. Auroral light among clouds in the north noticed at 9 P.M.; and from about 8¼ to about 8½ P.M., a zonegular white arch from just south of Capricornus towards the southeast with a branch north of Arcturus. It resembled bright cirro-cumulus clouds.

Aug. 31. Some auroral light over clouds in the north, at 9 P.M.

Besides these, other auroras were seen by A. Searle while away from Cambridge as follows.

Aug. 4. Birmingham, N.Y. Aurora mainly in the northeast extending at 9 P.M. as far as to include the Hyades and Andromeda, and reaching to the zenith, with a little red light.

Aug. 8. Birmingham, N.Y. Extensive aurora. At 9 P.M. not very bright, covering the northern sky including Castor and Pollux and the [illegible] and reaching to the western [illegible] at 10½ P.M., covering nearly the whole sky, with a corona about ⅓ of the way from Lyra to α Aquilae.

Aug. 17. Birmingham N.Y. A little auroral light low in the northeast about 10 P.M.

Aug. 20. Marblehead, Mass. About 8 P.M. there was an auroral arch from Pegasus through Canes Venatici, right while in the east, somewhat reddish in the zenith and in the west. It mostly disappeared before the moon rose.

L. Trouvelot records auroras at Cambridge Aug. 4, 8, 9, 24, 25.

Meteors.

Numerous meteors seen evening of Aug. 9 & 10, mostly from Perseus, by A. Searle at Birmingham N.Y.

Marblehead, Mass., Aug. 20 8h 37m P.M. Boston time. Meteor as bright as Altair, from Pegasus to Sagittarius, leaving a train as [illegible] at a time.

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September 1872. Meteorological Record of

10 A.M.

Date	Barometer	Attached Thermometer	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's (see note of July)	Wind	Clouds
1	29.858	62.5	63.2	62.7	64.4	54.8	55	10° NW	5 M Fm
2	29.862	65.0	68.2	67.1	68.8	61.0	67	1° W	10 Pm : raining
3	29.949	61.0	56.6	56.0	58.1	49.7	58	23° N	5 M Fm
4	29.958	57.4	55.5	55.0	56.8	47.3	50	8° NW	1 M Fm R
5	29.959	58.0	57.9	56.9	58.8	53.6	77	1° NW	10 Pm
6	29.999	64.6	68.6	67.0	68.8	63.5	79	5° SW	10 Pm
7	30.057	67.3	71.7	70.3	72.4	67.2	79	4° SW	10 Pm
8	29.938	72.6	80.7	80.4	82.0	74.7	72	6° SW	0 haze
9	30.130	72.7	64.3	63.5	65.1	60.3	81	9° NE	10 Pm
10	(30.360)	(63.3)	(59.1)	(58.3)	(60.7)	(56.5)	(82)	(5° E)	(6 Pm Fm Rs)
11	30.368	64.6	61.8	60.6	62.3	57.4	80	5° SE	10 Pm
12	30.225	67.3	71.9	70.8	72.8	67.0	76	3° S	10 Pm
13	30.078	70.8	74.9	73.7	75.8	70.1	78	12° S	10 Pm
14	30.108	69.3	65.0	64.1	66.0	59.1	70	10° NW	9 Pm R Rm
*15	30.170	64.6	58.0	57.0	58.9	51.9	67	6° NE	7 M Pm
*16	29.952	61.2	54.5	54.2	56.2	54.1	96	10° NE	10 Pm
17	29.984	62.4	55.9	55.0	57.0	55.3	99	7° NE	10 Pm : mist
18	29.936	62.0	62.1	61.2	63.0	59.5	87	5° SE	10 Pm
19	29.778	63.7	59.1	58.3	60.2	58.3	96	7° SE	10 Pm : mist : some rain
20	29.749	60.1	60.4	59.9	61.9	54.4	64	10° NW	7 Pm M Fm R
21	29.972	57.4	57.9	57.3	59.2	49.3	50	10° W	0
22	(30.017)	(69.2)	(74.9)	(74.4)	(76.1)	(66.1)	(60)	(1° SW)	(0)
23	30.270	71.8	73.5	72.9	74.6	65.8	64	0° SW	2 Pm Fm haze
24	30.356	65.4	68.3	67.3	69.4	64.0	79	2° SE	5 Pm haze
25	30.279	64.0	70.3	69.3	71.0	66.2	80	1° SW	10 Pm
26	30.004	69.7	69.6	68.6	70.5	66.3	84	2° S	10 Pm : a little rain
27	29.950	67.8	63.4	62.6	64.3	62.8	99	0° E	10 Pm Fm : raining
28	30.056	63.5	58.1	57.5	59.6	51.7	62	8° N	0 Pm
29	30.137	60.4	61.2	60.5	62.7	57.8	80	6° S	5 Pm M Fm Rs Rm
30	29.968	65.5	68.5	67.2	69.2	64.8	84	4° SW	8 Pm M Fm

4 P.M.

Date	Barometer	Attached Thermometer	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's (see note of July)	Wind	Clouds
1	(29.942)	(67.0)	(63.8)		(64.3)	(56.2)	(62)	(3° NW)	(5 Pr Rs)
2	29.830	70.4	73.2		73.8	63.0	55	14° W	4 Pm M Fm
3	29.930	64.5	59.1		59.9	48.4	42	16° N	7 Rs M Fm
4	29.916	63.5	61.7		62.5	51.0	44	6° NW	2 M Fm
5	29.914	65.8	67.9		68.0	57.0	51	6° SW	6 Pm Fm Rm
6	29.985	70.9	68.3		69.0	63.2	77	5° SE	1 haze Pm M
7	29.988	72.6	78.0		78.7	71.0	70	7° SW	1 Rm haze
8	(29.900)	(82.3)	(86.2)		(86.4)	(77.9)	(69)	(6° SW)	(0 haze)
9	30.208	70.5	61.7		62.7	56.8	74	7° E	10 Pm
10	(30.350)	(68.2)	(63.8)		(64.8)	(57.4)	(67)	(2° SE)	(1 Rm Rs haze)
11	30.308	67.0	65.9		66.2	60.6	77	4° SE	10 Pm
12	30.166	74.8	74.8		75.0	66.0	63	8° S	2 M Fm Pm
13	(30.036)	(73.3)	(70.1)		(70.6)	(68.2)	(93)	(7° S)	(10 Pm Fm)
14	30.086	70.3	69.0		69.8	62.2	68	1° NW	10 Pm
*15	30.120	64.6	55.8		56.5	53.5	90	2° NE	9 Pm
16	†29.896	62.4	54.6		55.6	54.2	100	9° NE	10 Pm : raining
17	29.986	62.7	56.3		57.1	54.6	93	3° NE	10 Pm
18	29.883	65.2	64.2		65.0	62.6	94	5° SW	7 Pm Fm
19	29.663	64.6	63.6		64.8	62.8	96	1° N	10 Pm M Fm
20	29.800	64.7	61.6		62.5	52.5	52	10° NW	9 Pm M Fm
21	29.960	64.9	65.7		66.8	53.1	38	4° W	0
22									
23	(30.247)	(73.3)	(67.1)		(67.8)	(63.1)	(82)	(4° E)	(8 Pm Fm)
24	30.320	72.9	74.6		75.1	69.7	79	4° S	10 Pm Fm
25	30.190	74.9	74.8		75.6	69.4	76	5° S	9 Pm M Fm
26	30.024	71.3	70.0		70.7	64.0	71	15° S	10 Pm Fm
27	29.886	68.4	66.3		67.0	64.4	93	1° S	10 Pm Fm : raining
28	30.049	67.9	63.0		64.0	53.8	52	4° N	5 Pr R Rs Pm
29	(30.040)	(65.8)	(61.9)		(63.0)	(57.3)	(75)	(9° E)	(8 Pm Rm Pr R)
30	29.959	71.4	71.1		71.9	61.2	54	1° SW	10 Pm Pr Rm

Sums of columns, number of observations, means, and reduction of barometer to the freezing point.

	10 A.M.	4 P.M.
Barometer	901.497	870.591
	30	29
	30.050	30.020
	− .098	− .109
	29.952	29.911
Attached Thermometer	1945.1	1996.1
	30	29
	64.8	68.8
No. 4	1935.1	1934.1
	30	29
	64.5	66.7
Minimum after setting	1909.6	
	30	
	63.7	
Dry bulb	1966.6	1955.1
	30	29
	65.6	67.4
Relative humidity	2255	2057
	30	29
	75	71
Wind	181	169
	30	29
	6.0	5.8
Clouds	210	194
	30	29
	7.0	6.7

See note of July 1872 on state of psychrometer

Rain gauge A, on roof of shed north of Clock Room.

Date	Time	Ounces	Inches
3	10½ A.M.	1	0.009
14	10 A.M.	62¼	0.539
16	5 P.M.	267¼	2.310
17	5 P.M.	99	0.856
18	5½ P.M.	34¼	0.296
20	10½ A.M.	95⅓	0.824
26	10½ A.M.	24⅞	0.214
28	10 A.M.	45¼	0.392
Total		744½	6.440

1872phae.proj..3825

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Harvard College Observatory. September 1872.

Date	External Thermometer No. 4 7 A.M.	2 P.M.	9 P.M.	Mean			Maximum after setting	Extreme temperatures Maximum set at 9 P.M.	Minimum set at 10 A.M.	Maximum solar thermometer set at 4 P.M.	Solar thermometer after setting	Rainfall in inches Gauge C examined at 10 A.M.	Remarks.
1	57.5	(64.0)	58.0	59.8			58.7	67.9	52.4	(140.8)	(57.0)	0.000	Rel vU.
2	(63.6)	(74.4)	61.7	66.6			62.0	73.9	56.2	134.0	115.3	0.000	Slight showers after 10 A.M. N Rel vU
3	50.0	61.1	(48.2)	53.1			(50.0)	(62.0)	48.5	125.5	83.9	0.011	Ryl vU
4	46.5	60.5	52.5	53.2			53.3	61.3	41.3	132.4	110.3	0.000	Rel
5	47.2	69.3	59.4	58.6			59.3	68.3	44.4	134.0	84.0	0.000	wy y>N y<A4. yU.
6	67.3	(69.8)	(63.4)	66.8			(63.4)	(73.4)	56.7	140.0	107.0	0.000	yw y>N y<A9.
7	70.2	76.0	69.2	71.8			69.1	77.5	61.1	144.1	109.4	0.000	yw Rz N vU
8	73.5	(87.6)	(79.5)	80.2			(78.5)	(88.1)	66.9	(143.3)	(89.4)	0.000	h e Rz
9	74.5	62.0	57.6	64.7			58.4	78.7	63.5	99.7	71.1	0.000	y Rl RzU
10	55.0	64.6	(57.8)	59.1			(58.2)	(65.0)	(50.1)	(130.8)	(90.0)	(0.000)	wy y>A9. RzU y< yG
11	58.2	67.5	(62.5)	62.7			(62.5)	(66.9)	55.6	90.0	68.0	0.011	ejw
12	61.2	77.2	65.1	67.8			65.7	77.1	60.3	139.8	93.0	0.000	yw y>N vU
13	67.7	(76.2)	(68.8)	70.9			(68.4)	(78.8)	60.1	(132.9)	(71.4)	0.000	yw re {Moderate showers at times, beginning about 10 A.M., & continuing through the day & evening.}
14	64.8	68.7	*61.3	64.9			*60.5	*68.0	63.9	123.0	80.7	0.507	yw
*15	61.7	(55.8)	53.4	57.0			*53.7	*64.5	55.0			0.000	{Sprinkled from 8½ A.M. to 3 P.M.: began again at 4½ P.M.}
16	56.2	56.8	55.2	56.1			55.6	56.6	*51.4	84.5	56.2	*1.236	yo Frequent heavy showers. Little thunder & lightning in the evening.
17	54.5	56.5	54.8	55.3			54.8	56.3	53.5	70.0	59.9	2.162	ymc
18	56.8	60.1	59.3	58.7			59.2	68.4	53.7	135.4	94.0	0.000	{Rain with some thunder, beginning about 12½ P.M.; with a light S.W. wind. y>A5. yW. vA7. y 9½.}
19	56.7	60.9	56.0	57.9			56.2	62.7	53.8	94.0	75.2	0.287	ywm. Showers with thunder & lightning forenoon & evening.
20	51.0	63.1	52.4	55.5			54.0	63.1	49.7	132.3	68.5	0.838	Ryl RzU vg.
21	48.7	65.4	56.2	56.8			56.9	65.5	46.2	128.0	95.5	0.000	ew v
22	67.6	(79.1)	(69.8)	72.2			(67.2)	(80.0)	(51.6)	(136.4)	(67.7)	(0.000)	hr ByU.
23	68.5	75.2	62.4	68.7			62.3	75.9	64.7	(135.0)	(73.5)	0.000	wy y>N y<N. vzU. Showers in the afternoon.
24	57.8	74.7	67.5	66.7			67.7	74.9	55.4	129.9	82.0	0.033	Ruyz y<N. yU
25	66.5	75.3	70.4	70.7			70.2	74.9	64.4	133.3	92.0	0.000	wy y>A10. y<A2 y>A4 vU Ryg.
26	64.7	72.8	65.1	67.5			65.3	72.0	63.8	98.7	73.0	0.177	wy Showers with some thunder. hr g.
27	63.2	67.9	61.2	64.1			61.1	66.8	61.2	84.8	67.4	0.905	Morning rainy; rain at intervals through the day & evening.
28	52.7	62.8	54.9	56.8			55.8	62.8	51.2	128.7	86.7	0.507	Rel vU.
29	47.8	62.6	(59.1)	56.5			(59.8)	(63.1)	44.0	(125.6)	(80.2)	0.000	mc RzAg y<N yU
30	65.3	73.9	62.4	67.2			62.5	73.7	57.5	140.2	74.3	0.000	yw y>A10. y<A2 yU.
Sums	1796.9	2041.8	1825.1	1887.9				2088.1	1658.1			6.674	
Means	59.9	68.1	60.8	62.9				69.60	55.27				

Rainfall for month 6.67 inches.
Mean temperature " " 62.9 Fahrenheit.
Maximum " " " 88.1 Sept. 8.
Minimum " " " 41.3 Sept. 4.
" (reduced to standard of No. 4) 42.1.
Highest reading of solar thermometer 144.1 Sept. 7.

Velocity of wind estimated in miles per hour: see notes of January and March, 1872.

Observations in parentheses ( ) were not made at the regular times. The actual times are given below.

Date	Regular times	Actual times.
1	2 P.M., 4 P.M.	11 5/6 A.M., 6½ P.M.
2	7 A.M., 2 P.M.	7½ A.M., 3¼ P.M.
3	9 P.M.	10¾ P.M.
6	2 P.M., 9 P.M.	2½ P.M., 11 P.M.
8	2 P.M., 4 P.M., 9 P.M.	12 5/6 P.M., 5⅓ P.M., 9⅙ P.M.
10	10 A.M., 4 P.M., 9 P.M.	7¾ A.M., 4⅔ P.M., 12¼ A.M. (9 P.M.)
11	9 P.M.	8 5/6 P.M.
13	2 P.M., 4 P.M., 9 P.M.	2¼ P.M., 4¼ P.M., 11 5/6 P.M.
15	2 P.M.	3 P.M.
22	10 A.M., 2 P.M., 4 P.M., 9 P.M.	11½ A.M., 1⅙ P.M., 4½ P.M., 11½ P.M.
23	4 P.M.	4⅓ P.M.
29	4 P.M., 9 P.M.	3½ P.M., 11 P.M.

Auroras noticed.

Sept. 4, 9 P.M. Faint auroral arch.
Sept. 9, 10 P.M. Some auroral light over clouds.
Sept. 28, 10 P.M. Wide auroral arch wholly below Ursa Major: narrow segment of dark sky beneath.

L. Trouvelot records auroras Sept. 3 & 6.

* A. Searle absent from Observatory from 9 P.M. Sept. 14 to 10 A.M. Sept. 16 inclusive. Observations for 10 A.M., 2, 4, & 9 P.M., during the interval, by L. or G. Trouvelot. The maximum thermometer was read incorrectly, but the readings given above are those inferred with tolerable certainty from those given in the original, which are those of the extremities of the interval between the two portions of mercury before setting.

† Original record 28.896; no doubt an accidental error.

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October 1872. Meteorological Record of

10 A.M.

Date	Barometer	Attached Thermometer	No. 4	Minimum after setting	†Psychrometer Dry bulb	Wet bulb	Relative humidity (Guyot's Tables (see note of July 1872))	Wind	Clouds
1	29.892	65.2	59.3	58.4	60.1	56.6	86	0 calm	10 Pm
2	29.792	59.7	55.0	54.5	56.1	47.5	55	15e NW	5 M Fm
3	29.800	56.3	56.8	56.4	58.4	49.8	57	6e SW	5 Pc Pm Fm
4	29.951	55.9	54.0	53.5	55.4	49.0	68	6e W	5 M Fm
5	30.334	54.7	53.5	53.0	55.2	48.6	67	2e NE	0 haze
6	30.260	61.4	66.7	65.8	67.8	60.0	70	9e S	8 Pm Fm
7	30.121	64.0	68.4	67.4	69.5	64.0	78	6e S	10 Pc Pm; thin
8	29.901	65.6	58.9	57.3	58.3	56.1	95	8e N	10 Pm: raining
9	30.099	59.1	54.4	53.7	55.7	48.1	61	5e W	0 M Fm
10	29.878	58.6	*60.0	59.8	*62.0	56.5	76	5e SW	0
11	30.008	54.5	47.4	46.8	48.5	40.5	52	12e NW	1 Pc M Fm
12	30.199	50.4	42.5	42.2	44.0	39.0	71	4e W	0 Pc R M.
†13									
†14	29.542	64.2	48.5	48.3	50.2	48.0	95	1e S	10 Pm
15	29.710	61.0	45.9	45.6	47.3	40.8	61	7e SW	0
16	29.883	60.8	55.1	54.4	56.3	50.1	70	10e SW	10 Pm
17	30.482	59.6	46.8	46.2	48.2	43.0	72	0e E	0 M Fm
18	30.154	64.5	52.9	52.0	53.9	51.2	92	0e SE	10 Pm: mist
19	29.933	64.4	48.2	47.7	49.6	44.2	71	7e NW	9 Pm M Fm
20	30.030	58.1	43.1	42.6	44.4	36.9	51	14e NW	1 M Fm
21	30.190	60.4	48.0	47.8	49.9	42.8	60	1e SW	0
22	30.250	66.0	58.5	58.6	60.7	53.7	66	6e S	5 R Rs Pc Rm
23	30.300	68.6	61.5	60.5	62.6	58.1	81	5e S	10 Pm Rm
24	30.573	63.6	47.8	47.1	48.9	41.1	53	16e N	9 Pm Fm
25	30.461	60.5	50.0	49.2	50.9	45.3	70	6e NE	9 Pm; thin: Fm
26	29.992	60.2	49.9	49.0	51.0	49.5	100	6e NE	10 Pm: raining
27	29.648	63.4	55.0	53.8	56.1	53.5	93	3e W	10 Pm Fm
28	30.280	64.9	38.2	37.4	39.4	34.5	68	12e NE	10 Pm Fm
29	30.589	61.8	41.4	40.9	42.8	36.1	55	11e N	0
30	30.580	60.4	42.5	42.1	44.1	39.0	70	7e N	0 Pm
31	30.118	67.4	42.9	42.2	44.0	39.9	78	13e NE	10 Pm

4 P.M.

Date	Barometer	Attached Thermometer	No. 4	Minimum after setting	†Psychrometer Dry bulb	Wet bulb	Relative humidity (Guyot's Tables (see note of July 1872))	Wind	Clouds
1	29.816	66.5	62.7		63.4	56.8	70	7e N	10 Pm M Fm
2	29.784	63.5	57.2		58.2	48.2	49	15e NW	9 Pm M Fm
3	29.672	59.7	52.5		53.1	51.0	96	1e W	10 Pm Fm
4	30.002	62.4	58.5		59.6	49.7	51	8e NW	4 M Fm Pc Rs
5	30.311	61.4	56.4		57.3	50.3	66	10e NE	3 Pm Rm M
6	30.206	66.7	70.6		71.2	64.5	71	6e SW	3 Pm Fm
7	30.049	66.9	70.0		70.7	64.1	72	12e S	10 Pm; thin: Fm
8	29.924	64.9	58.5		59.7	52.6	67	16e NW	10 Pm
9	30.035	64.9	58.6		59.8	51.0	57	1e W	0
10	29.740	67.9	67.0		67.9	58.8	60	13e S	1 Rm Rs Pm
11	30.049	57.3	48.3		49.4	40.7	48	9e NW	9 Pm Fm M
12									
†13	29.759	58.8			49.5	48.2	100		9 Pm
14	29.535	64.5	51.2		51.8	49.2	93	2e SW	1 M
15	29.862	66.4	50.7		51.8	42.5	46	6e NW	8 Pm Fm
16	29.940	62.7	58.4		59.3	48.0	43	15e SW	9 Pm M Fm
17	30.402	62.3	49.8		50.9	45.6	73	6e E	9 Pc Pm Rm Fm
18	30.020	64.9	56.6		57.5	55.7	98	0 calm	10 Pm Fm mist {Fm moving from SW}
19	29.862	64.9	53.1		54.1	43.1	39	5e NW	8 Pm Fm
20									
21	30.140	68.0	59.5		60.8	49.3	42	1e SW	0 haze
22	30.248	68.1	63.8		64.5	53.9	50	4e SW	10 Pm Rm Rs Pc
23	30.301	70.9	65.0		65.7	60.3	78	6e W	10 Pm Fm
24	30.581	73.2	48.2		49.2	41.0	51	10e NE	8 Pm Fm Rm
25	30.352	61.3	49.8		50.9	47.1	83	4e E	10 Pm Fm
26	29.810	69.0	51.6		52.7	51.2	100	6e NE	10 Pm: raining
27	29.776	78.3	50.3		51.3	49.2	96	10e NE	10 Pm: fine rain
28	30.356	69.6	42.1		43.3	36.8	57	7e NE	0 Pm
29	30.602	69.2	43.3		44.2	36.6	50	6e NE	0
30	30.474	65.3	44.0		45.0	38.2	57	13e NE	1 Pm Fm
31	29.942	58.0	47.4		48.6	40.4	50	13e NE	10 Pm

Sums of columns, number of observations, means, and reduction of barometer to the freezing point.

	10 A.M.	4 P.M.
Barometer	902.950	871.549
	30	29
	30.098	30.053
	−.087	−.098
	30.011	29.955
Attached thermometer	1835.2	1897.5
	30	29
	61.2	65.4
No. 4	1553.1	1545.1
	30	28
	51.8	55.2
	[or Morn. 48.5 for Oct. 13 55.0]	
Minimum after setting	1534.3	
	30	
	51.1	
Dry bulb	1591.3	1621.4
	30	29
	53.0	55.9
Relative humidity	2142	1913
	30	29
	71	66
Wind	203	212
	30	28
	6.8	7.6
Clouds	167	192
	30	29
	5.6	6.6

See note of July 1872 on state of psychrometer.

Rain gauge A, on roof of shed north of Clock Room.

Date	Time	Ounces	Inches
4	10½ A.M.	44¼	0.383
8	11½ A.M.	140½	1.215
13	4 P.M.	26	0.225
14	2 P.M.	99	0.856
19	10 A.M.	16¾	0.145
24	4 P.M.	9¾	0.084
26	4 P.M.	75	0.649
28	10 A.M.	28¾	0.249
Total		440	3.806

The measurement of Oct. 13 (in absence of regular observer) looks as if there might be some mistake about it. It accounts for the excess of the total from gauge A over that from gauge C.

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Harvard College Observatory. October 1872.

Date	External Thermometer No. 4 7 A.M.	2 P.M.	9 P.M.	Mean			Maximum after setting	Extreme temperatures. Maximum set at 9 P.M.	Minimum set at 10 A.M.	Maximum solar thermometer set at 4 P.M.	Solar thermometer after setting	Rainfall in inches. Gauge C examined at 10 A.M.	Remarks.
1	57.5	63.9	56.5	59.3			56.6	63.0	56.7	95.1	67.8	0.022	y Rl Rg.
2	44.2	(58.1)	(44.9)	49.1			(46.0)	(59.1)	47.0	127.8	67.7	0.044	Rel zU.
3	48.0	54.0	49.3	50.4			49.8	59.7	42.0	120.3	52.5	0.000	Rzw y<A10. {Rain in the middle of the day and about 9 P.M. y>NW. RzR yB2}
4	45.3	58.4	49.4	51.0			51.0	59.0	44.8	127.8	81.3	0.331	Rel zU y<g.
5	39.5	56.6	55.5	50.5			55.7	56.7	39.2	121.6	75.3	0.000	z Rwz y<AH. yU n→U.
6	59.0	72.5	62.8	64.8			62.5	71.7	53.0	131.7	94.0	0.000	h Rz Rg U.
7	(60.5)	72.2	65.9	66.2			65.1	71.7	57.0	120.4	81.0	0.000	yw Rain at 9 P.M.
8	61.5	58.4	53.1	57.7			53.8	65.4	57.3	89.5	65.0	1.059	Rain early in the day. y Rl y→U y<NB.
9	49.5	58.8	50.8	53.0			51.4	58.6	48.0	126.0	93.3	0.132	zl
10	48.4	69.2	55.2	57.6			55.6	69.0	43.4	127.2	92.9	0.000	zw zU ygn↖
11	41.2	50.2	39.3	43.6			40.3	55.5	40.4	129.0	66.0	0.044	vz Ry N RzU
12	33.0								33.4			0.000	White frost this morning.
†13	45.2		49.2				53.4	50.1		79.2	50.4		Rain began about 2 P.M. {A. Searle absent from after 10 A.M. Oct. 12 to near 9 P.M. Oct. 14.}
†14		55.8	45.0				45.7	55.7	38.0	120.3	61.0	0.882	zU. {Wet bulb of psychrometer wetted during time of regular observations with inky water, which left it stained blue.}
15	38.0	51.6	40.0	43.2			41.9	52.0	37.0	118.6	60.0	0.000	l Rz Rg.
16	47.5	60.2	48.0	51.9			49.4	61.5	39.5	118.6	61.4	0.000	yw y→U zlg. A few drops of rain at 5¼ P.M.
17	46.2	50.4	46.1	47.6			47.3	51.7	35.3	119.0	59.3	0.000	v Ryo Rsg.
18	47.3	55.8	54.1	52.4			54.0	56.0	45.0	66.0	59.4	0.000	ymc c> yw U. {A little rain at times. Shower about 8 P.M.}
19	43.5	51.9	(42.9)	46.1			(43.5)	(54.0)	42.8	117.7	80.0	0.154	Ryl RzU. Ry N.
20		47.0	42.1				43.4	47.4	34.3			0.000	zlw n→N y<N5 Rzg.
21	35.5	59.7	51.2	48.8			52.9	59.8	34.1	116.9	79.0	0.000	lzw {Perhaps no definite clouds till after sunset.} Sy G.
22	46.3	66.6	55.0	56.0			55.5	68.0	45.3	128.7	68.7	0.000	w v y<N y→U Rzg.
23	56.0	68.5	50.4	58.3			51.2	68.0	52.4	117.0	66.0	0.000	yw. Rain beginning 4 5/12 P.M. Sl<. {Evening cloudy with a little rain.}
24	46.2	49.9	44.1	46.7			45.3	51.2	45.3	116.2	68.1	0.088	vc Rzg.
25	42.5	50.2	46.8	46.5			47.4	51.0	40.3	94.3	51.5	0.000	yc Moderate rain after 6 P.M.
26	46.4	52.7	50.5	49.9			50.7	52.3	46.0	57.0	53.5	0.265	yc {Moderate rain at times. Evening foggy with a little rain.}
27	50.2	56.7	47.3	51.4			48.3	57.2	48.3	88.0	51.5	0.458	yRc Fine rain afternoon & evening at times.
28		41.9	36.8				38.0	48.2	34.9	112.9	58.4	0.177	Rdy y→A10. dr N & U.
29	30.0	44.8	34.8	36.5			36.4	44.9	30.0	109.0	55.0	0.000	zRd. White frost in the morning. Day perhaps cloudless.
30	29.2	46.7	40.9	38.9			42.0	47.0	28.8	110.8	58.9	0.000	zRo Ry U.
31	36.8	46.3	42.2	41.8			43.0	47.4	34.4	61.0	48.0	0.000	yc Rain beginning at 4¼ P.M. & continuing through the evening.
Sums	1274.4	1629.0	1450.1	1319.2				1712.8	1273.9			3.656	Rainfall for month 3.66 inches.
Means	45.5	56.2	48.3	50.7				57.09	42.46				Mean temperature " " 50.7 Fahrenheit.
													Maximum " " " 71.7 Oct. 6 & 7
													Minimum " " " 28.8 Oct. 30
													" (reduced to standard of No. 4) 29.5
													Highest reading of solar thermometer 131.7 Oct. 6

Velocity of wind estimated in miles per hour: see notes of January & March, 1872. The anemometer and vane were replaced on the west wing, from which they had been removed for a considerable time, and the register was set going again on October 23; but as it is to be altered and removed from the Clock Room before long, the velocity of the wind has been estimated as before. As a check on these estimates, the velocities given by the anemometer register at nearly the same times, during the last week of October, are given below.

Oct. 23, 4 P.M. 8. Oct. 24, 4 P.M., 8. Oct. 25, 4 P.M., 3. Oct. 26, 10 A.M., 9; 4 P.M., 8. Oct. 30, 4 P.M., 12. Oct. 31, 10 A.M., 13; 4 P.M., 10.

Observations in parentheses ( ) were not made at the regular times. The actual times are given below.

Date.	Regular times.	Actual times.
2	2 P.M., 9 P.M.	3⅓ P.M., 11 11/12 P.M.
7	7 A.M.	7½ A.M.
19	9 P.M.	11⅛ P.M.

The observations below were made at times when the cloth about the wet bulb of the psychrometer was apparently dry. See notes of May, June, and July, 1872.

Date	Time	Dry bulb	Wet bulb
5	9 11/12 A.M.	55.0	53.5
6	10 A.M.	67.9	66.3
7	10 A.M.	69.4	68.1
17	9¾ A.M.	47.8	46.4
29	9 11/12 A.M.	42.9	41.3

Auroras noticed.

Oct. 2, 11¾ P.M. Low arch, at times double: slight appearance of streamers.

Oct. 9, 9 P.M. Some appearance of auroral arch low in the north.

Oct. 14, 6½ to 9 P.M. Red aurora among clouds, afterwards red arch, giving a red line in the spectroscope. Seen by L. Trouvelot.

Oct. 28, 8 to 9½ P.M. Aurora arch, most below Rosa Major.

Oct. 29, 8¼ P.M. Low arches and streamers. — " — 9 P.M. Some light like a rather diffused arch.

L. Trouvelot records aurora Oct. 24 also.

*Oct. 10, 10 A.M. No. 4 and dry bulb carefully read: difference 2 degrees.

† A. Searle absent from after 10 A.M. Oct. 12 to near 9 P.M. Oct. 14.

Rag on wet bulb of psychrometer wetted during this time with inky water which left it stained blue.

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November 1872. Meteorological Record of

10 A.M.

Date	Barometer	Attached Thermometer	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity (Guyot's tables corrected July 1872)	Wind	Clouds
1	29.705	64.0	46.0	45.2	46.5	42.8	82	9e NW	10 Pm Fm
2	29.870	61.3	48.8	48.1	49.9	43.0	61	8e NW	6 M Fm
3	29.908	63.4	37.6	37.0	38.4	37.0	100	5e NE	10 Pm : raining
4	30.199	60.9	38.8	38.3	40.0	35.0	68	10e NE	9 Pr Pm M Fm
5	30.411	58.0	35.6	35.6	37.5	33.8	78	0e W	0 Pr
6	30.344	66.9	47.2	46.4	48.4	44.2	79	2e S	10 Pm
7	(29.592)	(65.5)	(46.8)	(46.2)	(47.9)	(46.4)	(100)	12e N	10 Pm : raining
8	29.440	58.0	46.0	45.4	47.2	39.8	55	17e SW	1 Pm Fm
9	29.850	62.3	44.2	43.8	45.4	37.5	49	13e W	0 M Fm
10	30.160	66.5	39.6	39.1	40.9	34.5	55	10e NW	0 Pr
11	30.286	60.8	39.4	38.9	40.8	37.2	81	1e NW	10 Pr Pm Fm
12	30.116	64.1	50.2	49.4	51.3	48.4	90	4e SE	10 Pm Fm
13	30.126	58.6	43.5	43.0	44.8	37.5	53	7e NW	9 Pr R Rm
14	30.010	60.9	38.9	38.2	40.1	37.7	92	2e N	10 Pm Fm
15	29.700	56.8	38.4	38.0	39.8	33.1	53	11e W	1 Pm M Fm
16	30.124	63.0	33.5	33.8	36.0	30.5	62	4e SW	0
17	30.320	64.6	32.2	31.8	33.5	28.0	59	7e W	0
18	30.438	57.6	34.7	34.0	35.8	30.8	67	6e SW	10 Pr Pm
19	30.064	56.2	33.4	33.4	35.2	29.6	61	8e SW	0
20	29.849	56.3	38.2	37.8	39.6	33.9	61	7e W	10 Pm
21	30.299	62.3	26.7	26.5	28.2	25.2	82	3e W	0
22	30.099	59.0	35.6	35.6	37.4	32.0	62	7e SW	1 Pr haze
23	30.014	54.6	33.8	33.5	35.2	32.3	85	1e W	4 haze R
24	30.242	55.5	*37.8	37.9	*39.8	34.8	68	9e SW	5 Pr Rs haze
25	29.935	61.6	48.6	48.1	50.2	46.7	85	7e S	8 Pm Pr R.
26	30.149	60.0	39.4	38.8	40.3	33.0	48	2e NW	10 Pm Pr
27	30.180	60.9	32.2	32.2	33.9	30.8	84	3e W	0
28	30.319	57.1	27.9	27.6	29.1	23.6	54	7e NW	1 Pr R
29	29.688	48.4	40.7	40.0	41.8	38.5	84	9e SE	10 Pm
30	29.609	42.5	17.8	17.8	19.3	16.3	76	10e SW	0

4 P.M.

Date	Barometer	Attached Thermometer	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity	Wind	Clouds
1	29.699	68.2	47.6		48.7	42.5	64	11e NW	9 Pm Fm
2	29.913	66.6	50.2		51.2	43.6	49	5e NW	7 Pm M Fm
3	29.908	66.3	38.6		39.6	37.2	92	7e N	10 Pm : raining
4	30.292	66.6	38.8		40.0	34.8	66	5e NE	2 Pr R
5	30.368	69.8	45.3		47.0	39.0	50	0 W	6 Pr Pm
6	30.241	72.3	51.0		52.1	47.5	78	5e S	10 Pm Fm
7	29.324	64.6	43.1		45.0	42.1	88	11e W	9 Pm Fm
8	29.518	65.5	47.5		48.8	40.9	53	10e W	3 M Fm
9	29.890	68.5	47.6		48.6	40.0	48	6e W	0 Pr M Fm
10	30.168	71.9	46.9		47.9	39.0	45	5e N	1 R
11	30.232	66.3	46.7		47.8	43.0	74	5e E	9 Pr R Rs
12	29.894	66.0	56.9		58.0	54.0	84	8e SE	10 Pm Fm
13	30.149	67.4	46.0		47.0	39.5	54	3e N	10 Pr
14	29.807	62.4	45.3		46.3	44.0	93	5e E	10 Pm Fm : raining
15	29.853	62.5	37.5		38.7	30.6	43	9e W	0 Pm
16	30.080	74.0	38.6		39.7	32.2	53	5e SW	1 Pm
17	30.430	69.2	36.7		37.8	29.8	42	5e NW	0 Fm
18	30.267	65.6	38.6		40.4	34.1	56	4e S	10 Pm Fm R
19	29.997	64.4	37.5		38.4	30.6	45	6e SW	0 Pm
20	29.880	69.3	35.9		37.0	30.0	50	7e W	6 Pm Fm
21	30.232	62.9	34.0		35.0	27.7	44	9e SW	1 Pr Rs
22	29.974	65.9	39.2		40.2	37.9	93	2e SE	10 Pm Fm : raining
23	30.084	58.9	38.7		39.9	34.2	61	9e NW	4 Pr Pm Fm haze
24	30.228	65.0	43.6		44.8	38.5	60	2e W	6 Pr Rm Rs Pr haze
25	29.831	69.8	51.4		52.6	44.6	56	9e SW	10 Pr Pm haze
26	30.078	66.6	38.7		40.8	32.9	43	4e NW	10 Pr
27	30.119	66.1	36.7		38.0	32.8	64	6e SW	1 Pr Fm
28	(30.217)	(62.8)	(29.4)		(30.4)	(25.2)	(60)	(4e SE)	(9 Pr Rm)
29	29.550	55.5	30.8		31.8	30.1	98	5e NW	10 Pm Pr
30	29.640	53.3	20.0		21.3	17.0	58	13e SW	0 Pr M

Sums of columns, number of observations, mean reduction of the barometer to the freezing point:

	10 A.M.	4 P.M.
Barometer	901.046	899.863
	30	30
	30.035	29.995
	−.084	−.100
	29.951	29.895
Attached Thermometer	1787.6	1974.2
	30	30
	59.6	65.8
No. 4	1153.5	1238.8
	30	30
	38.4	41.3
Minimum after setting	1141.4	
	30	
	38.0	
Dry bulb	1194.2	1274.8
	30	30
	39.8	42.5
Relative humidity	2134	1864
	30	30
	71	62
Wind	201	185
	30	30
	6.7	6.2
Clouds	155	174
	30	30
	5.2	5.8

See notes of July and November, 1872 on the table of the psychrometer.

Rain gauge A, on roof of shed north of Clock Room.

Date	Time	Ounces	Inches
1	10 A.M.	57	0.493
5	12½ P.M.	14½	0.125
7	10 A.M.	150½	1.300
13	12½ P.M.	70¾	0.612
	4½ P.M.	61½	0.532
16	12½ P.M.	14½	0.125
23	12½ P.M.	45	0.389
27	3 P.M.	7½	0.065
30	10 A.M.	35¾	0.309
Total		456¾	3.950

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Harvard College Observatory. — November 1872.

Date	External Thermometer No. 4 7 A.M.	2 P.M.	9 P.M.	Mean			Maximum after setting	Extreme temperatures. Maximum set at 9 P.M.	Minimum set at 10 A.M.	Maximum Solar thermometer set at 4 P.M.	Solar thermometer after setting	Rainfall in inches Gauge C examined at 10 A.M.	Remarks.
1	42.2	48.3	(44.3)	44.9			(45.5)	(48.1)	41.0	83.5	51.9	0.530	yl Re A7.
2	40.5	52.6	41.7	44.9			42.5	52.4	40.3	118.3	52.2	0.000	yRl y<A4 v8.
3	39.0	38.6	37.4	38.3			38.5	42.5	34.7	55.9	41.0	0.048	yc Moderate rain at times.
4		41.1	32.6				34.5	41.5	34.5	103.4	45.0	0.085	yc y> Rd U.
5	27.2	45.5	40.8	37.8			41.2	45.7	26.2	111.1	48.6	0.000	Heavy white frost this morning. rl y<N yc U
6	37.5	52.2	(49.7)	46.5			(49.3)	(51.9)	35.6	66.0	52.3	0.000	yc A little rain at times. Rain heavier in the evening.
7	50.0	43.9	42.6	45.5			42.8	51.0	(46.2)	83.3	47.0	1.270	yca Rain till 3 P.M. y>A4. y<U.
8	37.8	47.2	42.3	42.4			43.0	49.0	37.8	110.8	60.7	0.785	rl y<N10 y>A3. Rs U.
9	38.0	48.4	39.5	42.0			40.0	48.5	37.2	112.0	65.8	0.000	rl
10	30.5		37.1				38.0	47.5	32.0	114.3	56.1	0.000	rl
11	32.5	47.8	44.0	41.4			44.4	47.8	29.5	102.0	53.3	0.000	Ryc y<U.
12	46.5	57.7	57.1	53.8			56.0	58.5	39.0	85.3	58.3	0.098	yw A little rain at times. Rain heavy about 9 P.M.
13	38.2	48.2	38.9	41.8			39.3	57.0	36.6	114.0	45.2	0.394	yl y>A8.
14		45.9	45.6				45.4	46.0	33.7	59.1	44.8	0.000	yc A little rain after 10 A.M. More in afternoon on U.
15	37.2	39.0	30.6	35.6			32.0	45.7	37.0	104.0	54.7	0.140	y>A4. rl. rRd U.
16	27.3	39.6	(29.5)	32.1			(30.8)	(39.7)	26.6	105.0	52.0	0.000	rl rRd U.
17	(28.5)	37.1	29.0	31.5			30.1	37.2	26.7	100.7	52.8	0.000	rRd Sy9.
18	26.2	39.7	35.0	33.6			35.4	40.0	24.0	101.0	40.0	0.000	Rsd Sh3. Qy<. yo U.
19	28.4	38.9	33.1	33.5			35.0	39.0	25.6	103.1	46.5	0.000	rl y<U y9.
20	36.5	38.4	29.9	34.9			31.4	40.8	31.2	95.0	36.0	0.000	yl y>N rRd U.
21	20.0	35.2	29.4	28.2			30.9	35.4	19.4	102.0	52.3	0.000	rd rd U Sy7 y>
22	28.2	42.1	39.8	36.7			39.5	43.2	26.3	99.5	38.5	0.000	rl y<N10 yw U. Rain after noon; heavier in evening.
23		40.6	32.5				33.7	40.4	29.5	95.5	42.3	0.420	rl Rs U z<A6. Some snow on the ground this morning.
24	32.4	44.4	39.0	38.6			39.4	44.8	29.2	103.9	45.2	0.000	Rw y<yU Rs10.
25	39.3	54.2	45.1	46.2			45.2	55.0	34.8	115.4	54.8	0.000	Rsl Only a few drops of rain previous night. yw. Sh6. Sy9.
26	36.5	39.9	31.7	36.0			33.4	45.2	36.4	54.8	37.7	0.000	yRe Snow beginning about 5 P.M.
27	37.2	37.0	31.3	35.2			33.0	37.4	26.1	103.8	50.8	0.078	rl. {Numerous meteors in the evening radiating from the region of γ Andromedae}
28	24.8	(31.3)	(28.2)	28.1			(29.2)	(33.0)	23.1	(101.6)	(27.0)	0.000	rl. y<A4. Sy9 Ry10.
29	37.5	33.3	22.5	31.1			24.3	41.7	24.9	47.3	31.6	0.002	Cloud with rain, rather heavy after 10 A.M. {Snow after 1 P.M. yU. Sh8.}
30	12.2	21.2	18.5	17.3			22.0	24.5	12.1	90.6	30.8	0.327	rd rd U.
Sums	912.1	1229.3	1098.7	977.9				1330.4	937.2			4.177	Rainfall for month 4.18 inches
Means	33.8	42.4	36.6	37.6				44.35	31.24				Mean temperature " " 37.6 Fahrenheit
													Maximum " " " 58.5 Nov. 12
													Minimum " " " 12.1 Nov. 30
													" (reduced to a standard of No. 4) 12.5
													Highest reading of solar thermometer 118.3 Nov. 2.

Velocity of wind estimated in miles per hour: see notes of January, March, October, 1872. The velocity was frequently observed by the anemometer soon after the estimate had been made, with the results given below.

Date	Time A.M.	Miles per hour	Time P.M.	Miles per hour
1	10	10	4	9
2			4	9
3	10	7	4	7
5	10	4	4	0
6			4	11
7	10¼	13		
9	10	14	4	6
12			4	15
13			4	3
14			4	6
15			4	9
16			4	3
18			4	5
19	10¼	5	4	5
20			4	9
21	10	6	4	13
22			4¼	3
23	10	1		
25			4	9
26	10	2		
27			4	6

Observations in parentheses ( ) were not made at the regular times. The actual times are given below.

Date	Regular times.	Actual times.
1	9 P.M.	11 11/12 P.M.
6	9 P.M.	10 5/12 P.M.
16	10 A.M.	10 10/12 A.M.
17	9 P.M.	10 11/12 P.M.
28	7 A.M.	7 5/12 A.M.
	3 P.M.	1 P.M.
	9 P.M.	10¼ P.M.

The observations below were made at times when the cloth about the wet bulb of the psychrometer was apparently dry. See notes of May, June, July, October, 1872.

Date	Time	Dry bulb	Wet bulb
9	9 11/12 A.M.	45.4	44.0
11	9 2/3 A.M.	38.5	37.1
19	9 3/4 A.M.	34.1	32.6
20	9 2/3 A.M.	39.0	37.5
24	9¼ A.M.	37.0	35.6

The psychrometrical observations of November have been reduced by subtracting 1.5 from the reading of the dry bulb thermometer & using the remainder, with the unchanged reading of the wet bulb thermometer, in finding the relative humidity.

Auroras noticed.

Nov. 1, 10¾ P.M. to midnight. Aurora light among clouds in the north.
Nov. 9. Aurora suspected. Moon bright.
Nov. 10, 8 to 9 P.M. Light apparently auroral, in the north. Moon bright.
Nov. 27, near midnight. Some aurora among clouds.
L. Trowbridge records aurora Nov. 13 also.

Meteors.

Night of Nov. 13–14 mostly cloudy. Mr. Trowbridge watched for meteors and saw three.
Night of Nov. 14–15 cloudy till after 4 A.M., clear about 5 A.M. Prof. Winlock saw 1 meteor and Mr. Rogers saw 2 between 5 A.M. and sunrise.
Night of Nov. 27–28. Meteors radiating from the region of γ Andromedae numerous in the evening, most numerous about 6 P.M. Few at midnight, when observation were discontinued. 919 meteors were counted.

*Read carefully: 2 degrees difference between No. 4 and dry bulb.

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December 1872. Meteorological Record of

10 A.M.

Date	Barometer	Attached Thermometer (Casella 3235)	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity (Tables used July 18/72)	Wind	Clouds
1	29.940	44.9	26.6	26.3	27.9	23.0	59	5 e SW	1 R Rs
2	29.831	63.5	38.6	38.3	40.0	35.2	69	8 e SW	1 Pm Fm
3	29.792	62.5	37.7	37.3	39.1	33.0	57	15 e SW	4 Pm Fm M R Rm
4	30.073	56.1	35.0	34.7	36.2	29.8	54	13 e W	1 M Fm
5	30.252	53.1	30.0	30.1	31.9	27.5	68	4 e SW	9 R Rs
6	30.138	56.1	34.0	33.5	35.3	31.2	75	10 e SW	9 Pm Fm
7	30.310	54.0	28.1	27.4	29.0	26.9	93	6 e NW	10 R
8	29.930	52.6	34.6	34.2	36.0	32.1	75	5 e SE	10 Pm
9	29.520	60.4	33.2	32.5	34.4	32.5	96	1 e SW	10 Pm
10	29.702	53.0	14.7	14.2	16.0	13.1	74	30 e W	10 R
11	30.286	58.0	20.0	19.6	21.3	17.1	60	10 e NW	4 R Rs
12	30.259	46.4	12.2	11.7	13.0	10.6	82	9 e N	10 R
13	29.950	51.8	20.0	19.5	21.4	18.1	73	17 e NW	0
14	30.064	45.8	31.4	30.9	32.6	27.9	66	10 e SW	10 R
15	29.878	65.0	38.5	38.0	39.8	35.9	77	11 e SW	10 Pm R
16	30.250	56.9	19.4	19.0	21.1	18.8	87	4 e SW	4 R
17	30.150	58.8	27.1	26.7	28.7	25.7	82	5 e W	0
18	30.288	60.9	19.7	19.0	20.9	18.7	89	4 e N	10 R
19	30.442	59.8	24.8	24.7	26.5	21.8	60	7 e W	0 R Rs
20	29.865	62.6	35.1	34.8	36.6	35.0	99	8 e NE	10 Pm : raining.
21	30.174	71.2	27.8	27.2	28.9	24.0	60	8 e W	2 R R
22	30.033	62.2	12.7	12.1	14.0	10.9	69	20 e W	0
23	30.037	46.3	10.6	10.9	12.0	11.0	100	3 e S	10 R : snowing
24	30.349	49.7	8.5	7.6	10.0	6.5	56	5 e W	8 R Rs Rm
25	30.472	39.5	−2.2	−2.2	below graduation			7 e W	10 R
26	30.017	46.2	2.7	2.3	below graduation			10 e N	10 R : snowing
27	29.636	60.6	6.9	6.1	8.4	6.0	78	7 e NW	10 R : snowing
28	30.000	36.1	5.9	5.0	5.0	6.9	{under fastening}	6 e W	0
29	30.315	56.2	17.5	17.0	16.3	18.5	16.4	85	2 e NW	10 R : thin
30	30.472	49.3		7.1	6.8	{under fastening}	6.7		8 e NW	0
31	30.258	54.0		14.5	13.9	13.6	14.8	100	0 N	10 R : snowing

4 P.M.

Date	Barometer	Attached Thermometer	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity	Wind	Clouds
1	30.023	54.4	28.8		29.9	24.4	55	9 e SW	10 R
2	29.787	66.4	39.5		40.7	36.2	73	7 e S	3 Pm Fm
3	(29.922)	(65.6)	(37.4)		(38.6)	(32.6)	(57)	(8 e SW)	(8 R)
4	30.154	61.2	33.8		34.8	28.0	49	10 e NW	1 R M Fm
5	30.150	56.4	30.4		31.0	30.2	100	4 e S	10 R : snowing
6	30.156	61.1	37.6		38.5	32.8	60	10 e W	2 Pm M Fm
7	30.245	58.2	30.1		31.0	25.0	51	3 e W	0 R R
8	29.706	60.7	40.2		41.0	38.3	89	3 e SE	10 Pm : raining
9	29.414	57.6	33.5		34.7	32.3	90	9 e NW	10 R Pm Fm
10	29.873	57.6	17.4		18.6	*9.7		20 e W	6 R Rm Rs
11	30.250	59.4	23.6		24.7	19.0	45	9 e W	6 R Rs
12	30.090	44.9	14.7		16.0	15.0	100	12 e N	10 R : snowing
13	29.953	58.8	27.8		28.9	24.4	65	6 e SW	1 R Rs
14	30.150	62.0	33.6		34.7	32.0	87	8 e W	3 R Rs
15	29.881	68.2	36.6		37.8	30.8	51	17 e W	0 Pm
16	30.170	63.6	28.9		29.8	25.1	64	0 e SW	10 R
17	30.260	69.5	31.0		32.0	26.9	62	5 e NW	1 R Rs
18	29.974	61.7	22.6		23.8	22.4	100	7 e N	10 R : snowing
19	30.500	67.9	28.4		29.2	24.7	65	6 e W	9 R
20	29.749	71.9	34.4		35.7	34.0	98	4 e N	10 Pm
21	30.166	68.9	27.7		28.8	24.1	62	0 W	0 R
22	30.160	60.4	9.0		{under fastening below 11}	{about 7.0}		7 e NW	0 R
23	29.832	52.4	23.6		24.9	22.9	93	10 e NW	10 R : snowing
24	30.394	62.8	8.4		10.0	6.5	56	8 e NW	1 R
25	30.432	53.1	2.5		below graduation			9 e N	0 R Rs
26	29.699	57.5	6.7		could not be read			15 e N	10 R : snowing
27	29.596	48.4	8.5		{about 10.0}	7.9		9 e NW	10 R
28	30.052	40.6	16.8	17.2	18.0	14.8	72	11 e SW	0 R
29	30.290	63.0	23.0		24.0	20.1	67	4 e SW	10 R
30	30.475	61.4	15.6		16.9	13.8	72	3 e NW	1 R Rs
31	30.085	64.0	15.2		16.2	15.3	100	4 e NW	10 R : snowing

Sums of columns, number of observations, means, and reduction of barometer to the freezing point.

	10 A.M.	4 P.M.
Barometer	932.683	931.588
	31	31
	30.087	30.051
	− .070	− .085
	30.017	29.966
Attached Thermometer	1693.5	1859.6
	31	31
	54.6	60.0
No. 4	671.3	767.3
	31	31
	21.7	24.8
Minimum after setting	657.5	
	31	
	21.2	
Dry bulb	702.0	770.2
	28	27
	25.1	28.5
	On adding reductions, Dec. 2, 6, 30, mean: 23.0	On adding reductions, Dec. 22, 25, 27, mean: 25.8
Relative humidity	2043	1883
	27	26
	76	72
Wind	258	237
	31	31
	8.3	7.6
Clouds	193	172
	31	31
	6.2	5.5

See notes of July, November, and December, 1872, on the state of the psychrometer

1 Rain gauge A, on roof of shed north of Clock Room.

Date	Time	Canad.	Inches
3	10½ A.M.	16	0.138

Gauge A useless this month on account of cold and snow. Measurements of snow as follows.

{Dec. 13, 10 A.M.} Snow about 4½ inches deep. 9 inches in cylinder 1½ inches in diameter, weight 1½ ounces.

{Dec. 19, 10 A.M.} New snow averages about 22 inches deep. 15 inches in cylinder 1½ inches in diameter, weight 3⅞ ounces.

{Dec. 20, 4 P.M.} New snow about 3½ inches deep, but not well distinguished from old snow. 12 inches of new snow in cylinder 1½ inches in diameter, weight 7 ounces. This would give a rainfall of 1.28 inches. Deducting 0.108, the rainfall according to gauge C between 10 A.M. and 4½ P.M. we have 1.173 inches, which is probably not too large.

{Dec. 22, 10 A.M.} About 1½ inches of new snow. 6 inches in cylinder 1½ inches in diameter, weight 1 ounce.

{Dec. 24, 10 A.M.} Snow 2½ inches deep over crust. How much is new snow is doubtful; estimate 1½ inches, since the snow of Dec. 22 may have settled down a little. 3½ inches in cylinder 1½ inches in diameter, weight ¼ ounce.

{Dec. 27, 10 A.M.} 8.4 inches of snow above crust. Old snow probably packed

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Harvard College Observatory. December 1872.

Date	External Thermometer No. 4				Casella 3235		Maximum after setting	Extreme temperatures			Solar thermometer after setting	Rainfall in inches. Gauge C examined at 10 A.M.	Remarks.
	7 A.M.	2 P.M.	9 P.M.	Mean	2 P.M.	9 P.M.		Maximum set at 9 P.M.	Minimum set at 10 A.M.	Maximum solar thermometer set at 4 P.M.			
1	(25.0)	29.3	27.7	27.3			28.4	30.1	17.7	94.6	28.9	0.000	sl y< yc N. Snow beginning about 8½ P.M.
2	35.2	41.5	39.7	38.8			39.7	40.6	26.2	102.3	42.3	0.198	y y-2 y<A11 y>A7. y2l
3	35.4	(39.3)	(33.3)	36.0			(34.5)	(41.3)	34.4	(104.0)	(35.8)	0.070	Ryl Ry2l.
4	33.0	35.1	29.0	32.4			30.8	36.2	32.3	102.6	41.6	0.000	Rrl Ry2l.
5	23.8	30.6	30.5	28.3			33.0	33.7	23.4	82.1	31.0	0.000	yl. Snow after 11 P.M. Evening cloudy with a little snow.
6	27.2	38.9	30.6	32.2			31.5	39.0	26.1	97.4	44.8	0.045	Rl y>A10 r2l.
7		30.8	24.7				25.9	31.5	24.5	98.9	36.1	0.000	Rrl rl2l. {large halo round the moon early in the evening; none at 9 P.M.}
8	31.3	40.2	40.0	37.2			40.0	40.0	22.9	67.0	39.4	0.000	yRc y2l. Moderate rain at times after 4 P.M.
9	30.2	34.4	23.3	29.3			25.0	40.8	29.5	44.6	34.6	0.065	yl Snow afternoon. y2l. y>Td.
10	10.5	19.5	15.3	15.1			17.3	25.0	8.9	82.7	24.0	0.040	rdn Ry5 r29
11	15.3	23.9	16.9	18.7			18.6	24.5	14.0	84.0	29.1	0.000	Rrd rd2l
12	6.2	13.7	14.1	11.3			15.6	18.6	6.0	29.0	16.4	0.000	yd Snow after 11 A.M. ys2l.
13	14.3	28.0	22.3	21.5			23.7	28.2	6.2	101.2	32.9	†0.152	rd r2l Sy9. {Small colored lunar halo}
14	24.5	35.7	28.4	29.5			30.0	36.1	19.6	97.4	33.0	0.000	Rrl Sy2l. {Said to have been seen. Small lunar halo with prismatic colors at 6h 40m P.M.; again, somewhat less distinct, at 6h 50m P.M. At 8h P.M. large faint lunar halo.}
15	33.2	42.4	26.0	33.9			27.5	42.4	22.9	98.5	40.8	0.000	Ryl y>A10 rRd2l.
16	14.0	29.8	27.3	23.7			27.4	29.4	14.0	77.5	29.7	0.000	Rrl y<A10 ys2l. Snow after 4 P.M.
17	24.5	32.1	23.1	26.6			24.0	32.0	19.2	104.7	43.0	0.230	rl rRd2l.
18	16.3	21.6	23.8	20.6			23.9	24.6	14.2	43.0	24.6	0.000	yRd. Snow beginning about noon. ys2l.
19	24.8	29.4	21.9	25.4			22.9	29.2	18.8	112.7	29.1	†0.417	rl y2l
20	31.2	36.1	33.4	33.6			33.3	36.5	20.7	39.2	34.2	†1.173	{Snow previous night & early morning; afternoon rain, stopping 2 P.M.; now at times later.} y2l.
21	16.3	28.9	19.4	21.5			20.5	34.2	26.6	96.7	41.7	0.128	rl rz9.
22		10.6	3.0				5.3	23.9	10.4	95.8	15.0	†0.157	rd Rz9.
23	6.5	23.3	19.0	16.3			20.0	24.2	−1.8	39.6	26.5	0.010	ys {Snow early morning and at times later} y>A5 r2l Sy9.
24	1.5	9.8	(−0.6)	3.6			(4.5)	(19.7)	5.0	93.9	22.0	†0.179	Rrd rd2l.
25	−6.2	3.5	−1.5	−1.4			3.5	4.5	−8.6	78.9	26.8	0.000	yd y>A10 rd2l.
26	−0.5	8.4	6.6	4.8			8.0	9.0	−3.6	26.5	8.3	0.000	ysd {A little snow in the morning. Began to snow harder about 10 A.M. Snow continued through the day and evening}
27	8.5	8.9	(1.9)	6.4			(5.3)	(11.3)	2.4	23.5	21.7	†1.065	yd {Snow ceased falling before morning. A few flakes at 10 A.M. Cleared off about 6 P.M.}
28	−0.3	16.1	14.3	10.0	16.8	15.0	15.7	17.2	−5.0	103.0	45.8	0.000	rRd Sz9.
29	9.0	26.0	13.0	16.0			14.1	26.1	5.1	107.5	24.9	0.000	yRd r>A6.
30	1.5	15.1	(6.2)	7.6			(7.5)	(16.1)	1.5	98.0	46.0	0.000	rd rdl2l.
31	7.8	13.6	16.3	12.6			16.9	17.6	2.0	45.9	18.1	0.005	{Moderate snow all day and evening, stopping at times. Not snowing at 9 P.M.}
Sums	500.0	796.5	628.9	618.8				863.5	435.5			3.934	Rainfall for month 3.93 inches
Means	17.2	25.7	20.3	21.3				27.86	14.05				Mean temperature " " 21.3 Fahrenheit. Maximum " " " 42.4 Dec. 15. Minimum " " " −8.6 Dec. 25. " (reduced to standard of No. 4) −8.1. Highest reading of solar thermometer 112.7 Dec. 19.

Velocity of wind estimated in miles per hour: see notes of January, March, October, & November. By the anemometer, the velocity was 22 on Dec. 3 at 10 A.M. and 18 on Dec. 10 at 4 P.M.

Observations in parentheses ( ) were not made at the regular times. The actual times are given below.

Date	Regular times.	Actual times.
1	7 A.M.	8 A.M.
3	2 P.M., 4 P.M., 9 P.M.	1 P.M., 5¾ P.M., 11¼ P.M.
24	9 P.M.	10½ P.M.
27	9 P.M.	11⅚ P.M.
30	9 P.M.	9½ P.M.

Thermometer Casella 12530. Readings for comparison with the other thermometers: Dec. 28, 10 A.M. 5.5; 2 P.M. 16.7; 4 P.M. 16.9; 9 P.M. 14.7. Dec. 29, 10 A.M. 16.3.

Dec. 29, 1872, 2 P.M. Casella 3235 in bucket of ice and water in East Transit Room, where the temperature of the air is about 32.5, reads 32.7. Casella 12530 in same bucket reads 32.0.

The observations below were made at times when the air of the psychrometer was apparently dry. See notes of May, June, July, October, and November, 1872.

Date	Time	Dry bulb	Wet bulb
1	9½ A.M.	27.0	25.5
2	9½ A.M.	39.8	38.2
3	9½ A.M.	38.5	37.0
5	9½ A.M.	28.0	26.7
13	9½ A.M.	19.9	18.3
16	9½ A.M.	18.8	17.6
21	9½ A.M.	28.4	27.1

The psychrometrical observations for December have been reduced in the same way as those for November, by subtracting 1.5 from each reading of the dry bulb thermometer, and deducting the relative humidity according to Guyot's Tables from the remainder and the unchanged reading of the wet bulb thermometer.

† Rainfall determined by measurement and weighing of snow, gauge C not being serviceable in snow storms accompanied by wind.

* The wet bulb reading 9.7 on December 10 at 4 P.M. is possibly a mistake for 14.7 or an accidental misreading as it would indicate an argument beyond the limits of Guyot's Tables. If it was actually 9.7, the observation shows the uncertainty of the psychrometer below the freezing point. The instrument has no good protection against the wind, which was strong on December 10.

Auroras noticed.

Dec. 7. Aurora suspected. Moonlight.
Dec. 27. Some aurora seen 11 P.M. to midnight.
(No other auroras recorded by L. Trowbridge.)

Lunar halos Dec. 7, 13, 14: see remarks above.

Rainfall in inches for four years past.

	1869	1870	1871	1872
January	3.43	5.69	1.45	1.93
February	5.80	1.22	2.63	2.30
March	5.33	4.66	3.70	3.09
April	2.03	6.13	3.03	2.68
May	4.94	1.97	3.60	3.51
June	3.64	3.83	5.35	4.64
July	2.65	1.20	2.96	5.17
August	1.55	2.03	3.10	10.97
September	5.92	1.81	1.08	6.67
October	5.18	3.76	5.70	3.66
November	2.43	3.52	4.78	4.18
December	5.08	2.71	3.18	3.93
Total	47.98	41.53	40.56	52.73

considerably; new snow estimated at least 8 inches deep. 16½ inches in cylinder 4 inches in diameter weigh 3½ ounces.

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Minimum temperature observed in 1872 — 8.1 Dec. 25
Maximum " " by "solar thermometer" 93.9 July 4
" " " 161.4 July 30

General Remarks on the Observations for 1872.

Observers

The reading of thermometer No. 4 at 7 A.M. is by Bridget Henry. The other observations are by Arthur Searle, except those after July 19 and before 2 P.M. August 21; those after 4 P.M. September 14 and before 2 P.M. September 16; those after 10 A.M. October 12 and before 9 P.M. October 14: which are by L. and G. Trouvelot. Most of those in July and August are by G. Trouvelot. He began by reading the maximum thermometer correctly, but soon fell into some error which he could not explain afterwards. It probably consisted in reading the ends of the gap between the two detached portions of mercury instead of entering the reading of the thermometer before and after setting. L. Trouvelot read the maximum thermometer in the same way. In the copy, conjectural readings derived from the originals have been sometimes entered. The length of the detached portion of the mercury is almost exactly ten degrees (but see note in the record for August 1876) and of the air-bubble about half a degree, which has served as the warrant for these conjectural readings, when they have been entered. The quantity of cloud is given by G. Trouvelot sometimes in fractions like $\frac{4}{5}$, denoting the portion of sky covered; sometimes by figures like 10, 20, 7, or 5, intended to represent denominators, with 1 for a numerator. In the copy, these figures have been replaced by the equivalent notation of the regular system. L. Trouvelot recorded either by the regular system, or by vulgar fractions.

Errors in reading maximum

Errors in recording amount of cloud

Instruments

The instruments used during 1872 will be found described in the pages of this volume which precede the record. The psychrometer has evidently been out of order throughout the year, and probably for a long while before. Notes on its condition will be found in

Psychrometer (defective)

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Maximum (seems nearly to agree with No. 4)

the record. For comparing Casella 13399 (maximum) with No. 4, there are observations as follows (made when the temperature seemed to be rising without touching the instrument,) besides that in the record for February: Jan. 30, 2 P.M. 18.0; Feb. 1, 2 P.M., 21.0; Feb. 2, 2 P.M., 23.6. The corresponding readings of No. 4 and Casella 3235 will be found in the record.

Rain and snow

The measuring glass of gauge C was broken, and mended with cement. When not in use the water was weighed instead of being measured. The method of measuring the rainfall due to snow has generally been to measure the approximate depth of the snow with a rule in several places, and to estimate the depth of the snow last fallen in a somewhat arbitrary manner by the help of these measurements; then to collect a small quantity of the new snow, by cutting out cylinders of it $1\frac{7}{8}$ inches in diameter with a glass lamp chimney, and weigh the snow thus collected: and to compute the rain-fall from these data.

Phenomena

The auroral displays observed in 1872 have been noted in one place for each month, below the column of remarks. Other phenomena have been noted either in the column of remarks, or below it. The notes on the aurora of Feb. 4, being too long for insertion in the regular place, are copied here.

Aurora of Feb. 4

Reddish light diffused in southern sky at $6^h 25^m$ P.M. from below Orion to square of Pegasus; before $7^h 25^m$ P.M. becoming somewhat more concentrated and whiter. Diffused green light in the north gradually increasing during this time. At $7^h 35^m$, band in the south nearly white, covering most of Canis Major. At $7^h 45^m$ mainly red again in the south; green diffused light over most of the sky. Not much light anywhere at 9 P.M., but later, red light appeared again in the south, with a few streamers of green in the north.

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January 1873. Meteorological Record of

10 A.M.

Date	Barometer	Attached Thermometer	Cassella 3235	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's Tables (see note)	Wind	Clouds
1	30.400	56.7		9.1	9.1	11.5	*10.9	100	2e SW	0 haze
2	30.452	55.4		12.8	12.8	†13.6	†7.8	†17.	0e NW	10 R haze
3	(29.353)	(64.4)		(35.3)	(34.8)	(36.0)	(35.0)	(100)	(1e NW)	(10 Pm fog)
4	29.952	61.2		35.8	36.2	37.0	31.0	59	4e W	0
5	30.340	59.2		19.6	20.0	21.0	19.0	92	1e N	10 Pm Rs: a little haze
6	(29.903)	(60.0)		(33.9)	(33.8)	(34.2)	(29.2)	(65)	(8e SW)	(1 Fm)
7	30.450	56.6		12.8	12.8	14.2	12.0	86	3e N	1 Rs
8	30.267	50.3		14.8	14.0	15.9	15.0	100	4e N	10 R
9	29.748	65.5		32.7	32.5	34.5	32.2	91	6e SW	0
10	30.150	55.4		17.8	17.5	19.2	15.0	57	13e SW	0
11	30.166	44.0		3.8	3.5	cannot be read			6e W	0 R Rs
12	30.430	44.0		11.7	11.0	cannot be read			6e W	1 R Rs
13	30.467	57.5		21.8	21.2	23.0	19.9	77	3e SE	10 R: snowing
14	30.010	58.7		40.1	40.0	41.4	38.2	85	5e W	0 Fm
15	30.758	51.6		18.1	17.3				10e N	10 R
16	30.340	53.2		25.6	24.9	26.6	25.6	100	1e N	10 R fog
17	29.766	67.3		47.7	46.7	48.6	47.4	100	4e S	10 Pm fog: raining
18	30.052	65.2		28.9	28.2	30.1	27.9	92	12e NE	10 Pm: some rain
19	(29.779)	(61.9)		(31.3)	(30.9)	(32.6)	(31.7)	(100)	(9e SW)	(9 Rs Pm)
20	30.020	49.9		20.0	19.6	21.5	18.5	78	3e SW	9 R Rs: thin
21	29.886	62.6		34.5	34.0	35.8	32.1	77	1e S	9 Pm R
22	29.668	66.1		34.6	34.1	35.9	33.1	86	6e W	9 Pm Fm
23	30.282	54.4		20.3	19.9	21.9	18.7	75	7e NW	0 Rs
24	29.916	56.8		25.0	24.6	26.2	24.9	100	16e NE	10 R: snowing
25	29.745	45.8		20.6	20.2	22.0	19.0	78	6e W	0 R Rs
26	30.180	42.3		16.0	15.2	17.1	15.1	91	2e SW	10 Pm R
27	29.982	57.2		18.8	18.0	20.0	18.8	100	5e N	10 R: snowing
28	29.995	54.7		21.0	20.6	22.6	19.0	70	6e W	2 R Rs
29	30.236	50.0		1.4	1.1	below graduation			13e NW	0
30	30.217	50.7	+0.8	−0.3	0.0	below graduation			4e W	0 R Rs
31	30.091	62.8	20.9	20.0	20.0	21.7	17.6	62	3e SW	0

4 P.M.

Date	Barometer	Attached Thermometer	Cassella 3235	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's Tables (see note)	Wind	Clouds
1	30.362	64.2		23.0		24.1	21.3	82	1e W	7 R Rs: thin
2	30.410	60.2		23.2		24.0	22.8	100	2e W	8 Pm
3	29.253	68.0		36.0		36.4	35.2	100	0e NW	10 Pm: very foggy
4	30.153	70.0		33.2		34.0	28.6	61	3e NW	3 Rs Rm
5	29.851	56.2		34.4		34.9	33.5	100	4e E	10 haze
6	30.080	63.5		30.6		31.4	25.0	47	4e W	0
7	30.390	64.9		23.5		24.6	20.4	64	4e W	9 R R Rs
8	30.129	60.8		24.7		26.1	23.8	89	2e N	10 R
9	29.816	64.0		30.4		31.7	26.0	55	10e SW	3 Pm M Fm
10	30.082	61.4		20.9		22.0	17.0	49	10e SW	0
11	30.133	49.9		10.8		12.0	9.1	71	6e SW	0
12	30.481	56.6		17.1		18.2	14.8	68	2e W	0 Rs
13	30.268	59.0		27.3		28.3	25.9	89	2e SE	10 R
14	30.151	66.9		40.7		41.9	35.8	60	6e W	5 Pm R Rs M Fm
15	30.772	62.8		18.6		19.8	18.0	95	10e N	10 R
16	30.096	61.0		45.3		46.0	44.3	98	5e SW	8 Pm Fm haze
17	29.824	68.0		43.6		44.9	43.1	97	1e NW	10 Pm R
18	29.896	66.9		31.0		32.2	30.7	100	11e NE	10 R: snowing
19	29.859	59.0		23.5		24.9	20.9	67	15e SW	3 Pm M Fm
20	30.032	60.6		29.8		30.9	27.0	73	7e SW	10 R
21	29.740	65.8		34.5		35.8	32.4	80	6e E	10 R: snowing
22	29.774	64.3		33.4		34.7	29.6	65	11e NW	4 Pm Fm
23	30.232	64.3		22.0		23.1	18.4	55	5e N	10 R
24	29.660	56.0		21.8		22.9	21.6	100	12e NE	10 R: snowing
25	29.876	53.3		21.8		22.9	20.0	80	14e NW	3 M Pm
26	30.166	54.0		24.5		25.3	22.0	76	3e W	3 Pm R
27	29.714	69.3		23.1		24.3	22.9	100	9e NE	10 R: snowing
28	29.916	58.0		27.9		28.7	24.0	62	7e SW	9 R Rs
29	30.252	64.0		5.8		7.0	{under freezing}		9e NW	0
30	30.158	65.9	21.8	21.3		22.4	17.0	44	9e S	10 R Rs Pm
31	30.078	62.2	30.7	30.1		31.0	25.2	53	4e NW	1 R Rs

Sums of columns, number of observations, means, and reduction of barometer to the freezing point.

	10 A.M.	4 P.M.
Barometer	932.951	931.604
	31	31
	30.095	30.052
	−.074	−.090
	30.021	29.962
Attached Thermometer	1741.4	1921.0
	31	31
	56.2	62.0
No. 4	685.5	883.3
	31	31
	22.1	26.9
Minimum after setting	674.5	
	31	
	21.8	
Dry bulb	684.1	866.4
	26	31
	26.3	27.9
	Omitting Thermometer Nos. 11, 12, 13, 29, 30, 31	
Relative humidity	2138	2280
	26	30
	82	76
Wind	170	194
	31	31
	5.5	6.3
Clouds	161	196
	31	31
	5.2	6.3

Rain gauge A on roof of shed north of Clock Room.

Date	Time	Ounces	Inches

Gauge A useless this month owing to the weather.

Notes on falls of snow.

Jan. 1, 10 A.M. New snow about 2½ inches deep. 18 inches in cylinder 1⅞ inches in diameter weigh 2⅔ ounces. Hence rainfall 0.240 inches.

Jan. 24, 10 A.M. Snow about 2½ inches deep. 10½ inches in cylinder 1⅞ inches in diameter, weigh. 3¼ ounces. Hence rainfall 0.486 inches.

Jan. 24, 5 P.M. Gauge C cleared out. Snow 3½ inches deep. 8 inches in cylinder 1⅞ inches in diameter weigh. 5 ounces. Hence rainfall 0.96 inches in all: 0.429 inches since 10 A.M.

Jan. 25, 10 A.M. Snow about 3 inches deep. Packed together since 5 P.M. Jan. 24. 13 inches in cylinder 1⅞ inches in diameter weigh 6 ounces. Hence rainfall 0.869 inches in all; 0.383 inches since 10 A.M. Jan. 24. The mean of this measure and that of 5 P.M. Jan. 24 gives 0.406 inches for rainfall of past 24 hours.

1872phae.proj..382S

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Harvard College Observatory. January 1873.

Date	External Thermometer No. 4 7 A.M.	2 P.M.	9 P.M.	Mean	2 P.M. Casella 3235	Casella 12530	Maximum after setting	Extreme temperatures Maximum set at ** 10 A.M.	Minimum set at 10 A.M.	Maximum solar thermometer set at 4 P.M.	Solar thermometer after setting	Rainfall in inches Gauge C examined at 10 A.M.	Remarks.
1	3.8	22.8							1.2	99.8	35.3	‖0.240	
2	1.0	20.4	23.3	14.9			(24.0)	(13.4)	−2.2	102.4	30.2	0.000	Hoar frost: clearing up afternoon {clouding up again after 2 A.M.}
3	33.2	36.5	34.8	34.8					(13.2)	51.2	29.8	(0.375)	Fog and rain: thawing
4	33.0	37.0	22.5	30.8					32.0	100.2	33.0	0.177	Lunar halo at 7½ P.M.
5	14.7	33.8							13.5	95.5	34.8	0.000	{Sleet at 11 P.M.: then rain, lasting into the night, with strong wind in latter part of night.}
6	38.3	32.4							(21.2)	92.8	39.9	(1.682)	
7	9.7	24.2							8.0	92.0	29.4	0.000	
8	8.5	22.4	27.5	19.5					3.3	45.3	27.5	0.000	yc {A little snow about 10 A.M. A little rain in the evening}
9	33.2	35.0	22.0	30.1			32.9	40.5	14.0	98.8	41.1	0.496	Rain previous night. Rr Sw
10	10.3	22.0	11.6	14.6			20.2	34.7	10.0	90.6	47.5	0.000	2d
11	1.3	11.2	7.5	6.7			6.5	22.0	0.3	84.7	43.6	0.000	2d
12	5.2	16.6	9.6	10.5			12.7	13.0	3.5	86.9	35.6	0.000	2d
13	14.0	27.6	36.0	25.9			22.7	22.4	7.0	40.8	30.2	0.000	y d− A little snow at times.
14	36.7	43.6	27.9	36.1			40.0	40.0	21.2	105.8	62.0	0.074	Rain previous night.
15	15.5	19.3	18.9	17.9			19.0	43.5	15.0	61.9	21.8	0.000	y Rd y ll
16	21.5	35.2	45.2	34.0			25.4	25.4	17.1	71.9	62.3	0.060	A little rain previous night & early in the day.
17	46.3	46.2	(34.0)	42.2			45.0	48.2	24.9	62.2	45.8	0.618	
18	28.2	29.7	34.3	30.7			29.6	47.2	26.1	45.7	33.0	0.060	yc {Rain, sleet, and snow in the forenoon. Snow afternoon. Snow and heavy rain evening}
19	26.5	27.2	37.9	30.5			(33.7)	(34.2)	(25.8)	65.9	58.6	(0.450)	y Rd y − Az 2d ll
20	13.0	27.6	30.5	23.7			21.0	34.6	12.5	92.2	36.0	0.000	rl y < y U
21	29.8	35.8	35.0	33.5			34.4	34.2	19.8	81.9	36.0	0.020	{A little snow previous night. Rr y < Some snow and rain afternoon and evening}
22	32.4	34.4	28.4	31.7			34.8	38.0	30.5	96.9	50.1	0.290	Ryl y − Az. 2d.
23	19.0	22.0	20.2	20.4			21.2	37.1	18.2	93.0	29.8	0.000	rl y < N ycll.
24	23.5	§15.6	(11.2)	16.8			26.2	25.9	18.3	42.7	24.6	‖0.486	Snow all day with sleet at times.
25	13.5	22.9	14.3	16.9			21.4	26.6	8.1	109.0	51.3	‖0.406	
26	(10.2)	26.8	17.0	18.0			18.5	23.9	8.0	102.3	54.8	0.000	yc y > d− Rrz U.
27	18.0	23.4	22.0	21.1			24.0	26.4	15.1	54.6	25.7	‖0.224	Snow all day and evening.
28	16.5	28.0	22.0	22.2			22.0	24.2	16.2	107.0	48.2	‖0.319	rl y < y > U 2y 3y.
29	1.2	5.1	−0.5	1.9			5.0	28.2	0.2	100.8	57.0	0.000	2d A few flakes of snow previous night.
30	−9.3	17.4	(16.5)	8.2	17.6	17.9	3.0	6.3	−13.9	103.0	45.2	0.000	
31	15.0	30.3			30.9	30.1	21.0	21.3	0.0	105.0	71.8	0.000	
Sums	563.7	832.4	609.6	593.6				711.2	388.1			5.971	
Means	18.2	26.9	23.4	22.8				29.63	12.52				

Rainfall for month 5.97 inches
Mean temperature " " " 22.8 Fahrenheit.
Maximum " " " 48.2 Jan. 17
Minimum " " " −13.9 " 30
" " (reduced to standard of No. 4) − 13.6
Highest reading of solar thermometer 109.0 Jan. 25.

Velocity of wind estimated in miles per hour: see notes in record for 1872.

Observations in parentheses ( ) were not made at the regular times. The actual times are given below.

Date	Regular times.	Actual times.
2	10 A.M.	9 P.M.
3	10 A.M.	11 A.M.
6	10 A.M.	10½ A.M.
17	9 P.M.	10½ P.M.
19	10 A.M.	10½ A.M.
24	9 P.M.	9½ P.M.
26	7 A.M.	7½ A.M.
30	9 P.M.	8¾ P.M.

The observers this month were as follows. The 7 A.M. thermometer readings by Bridget Henry. On and after Jan. 8 the 9 P.M. observation is by W. Winlock, who also made those at 10 A.M. Jan. 12, 10½ A.M. Jan. 19, 2 P.M. & 4 P.M. Jan. 25, 10 A.M., 2 P.M. and 4 P.M. Jan. 26. L. Trouvelot made the observations at 10 A.M., 2 P.M., 4 P.M., & 9 P.M. from 10 A.M. Jan. 2 to 10 A.M. Jan. 7, both inclusive.

The other observations are by A. Searle, who was not at the Observatory after 6 P.M. Hence notes of evening phenomena were made at Boston.

Auroras noticed.

Jan. 7. Extensive aurora with much red light seen from time to time between 6 and 9 P.M.

Jan. 26. Aurora over clouds, seen in Boston about 7 P.M.

L. Trouvelot records auroras Jan. 19 & 25.

The psychrometrical observations for January have been reduced by determining the relative humidity from Guyot's Tables after subtracting 1.5 from each reading of the dry bulb, as in November & December 1872.

Notes on falls of snow, continued.

Jan. 27, 10 A.M. 2 inches of light snow. 5 P.M. Gauge C cleared out. New snow about 3½ inches deep. 14 inches in cylinder 1⅞ inches in diameter weigh 2½ ounces. Hence rainfall 0.392 inches at 5 P.M.; 0.224 inches at 10 A.M.

Jan. 28, 10 A.M. Total amount of new snow about 4½ inches. 13 inches in cylinder 1⅞ inches in diameter weigh 2½ ounces. Hence rainfall 0.573 inches in all; 0.151 inches since 5 P.M. Jan. 27; 0.319 inches since 10 A.M. Jan. 27. Gauge C buried up. Dug out and cleared.

* Wet bulb wetted at 9¼ A.M.

† Probably some error. The mercury in the wet bulb thermometer may have been concealed by the fastening.

‡ Index of barometer set by W. Winlock and read by A. Searle 3½ hours later (at 2 P.M.)

§ Carefully read; known to be 15.6 not 25.6.

‖ Rainfall from weighing and measuring snow.

** Time of setting maximum thermometer changed from 9 P.M. to 10 A.M., as the regular observer was not present in the evening.

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January 1873. Meteorological Record of

10 A.M.

Date	Barometer	Attached Thermometer	Casella 3235	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's tables (see note)	Wind	Clouds
1	30.400	56.7		9.1	9.1	11.5	*10.9	100	2e SW	0 haze
2	30.452	55.4		12.8	12.8	†13.6	†7.8	†17.	0e NW	10 Pr haze
3	(29.353)	(64.4)		(35.3)	(34.8)	(36.0)	(35.0)	(100)	(1e NW)	(10 Pm fog)
4	29.952	61.2		35.8	36.2	37.0	31.0	59	4e W	0
5	30.340	59.2		19.6	20.0	21.0	19.0	92	1e N	10 Pm Rs : a little haze
6	(29.903)	(60.0)		(33.9)	(33.8)	(34.2)	(29.2)	(65)	(8e SW)	(1 Fm)
7	30.450	56.6		12.8	12.8	14.2	12.0	86	3e N	1 Rs
8	30.267	50.3		14.8	14.0	15.9	15.0	100	4e N	10 R
9	29.748	65.5		32.7	32.5	34.5	32.2	91	6e SW	0
10	30.150	55.4		17.8	17.5	19.2	15.0	57	13e SW	0
11	30.166	44.0		3.8	3.5	cannot be read			6e W	0 Pr Rs
12	30.430	44.0		11.7	11.0	cannot be read			6e W	1 Pr Rs
13	30.467	57.5		21.8	21.2	23.0	19.9	77	3e SE	10 Pr : snowing
14	30.010	58.7		40.1	40.0	41.4	38.2	85	5e W	0 Fm
15	30.758	51.6		18.1	17.3				10e N	10 Pr
16	30.340	53.2		25.6	24.9	26.6	25.6	100	1e N	10 R fog
17	29.766	67.3		47.7	46.7	48.6	47.4	100	4e S	10 Pm fog : raining
18	30.052	65.2		28.9	28.2	30.1	27.9	92	12e NE	10 Pm : some rain
19	(29.779)	(61.9)		(31.3)	(30.9)	(32.6)	(31.7)	(100)	(9e SW)	(9 Rs Pm)
20	30.020	49.9		20.0	19.6	21.5	18.5	78	3e SW	9 Pr Rs : thin
21	29.886	62.6		34.5	34.0	35.8	32.1	77	1e S	9 Pm Pr
22	29.668	66.1		34.6	34.1	35.9	33.1	86	6e W	9 Pm Fm
23	30.282	54.4		20.3	19.9	21.9	18.7	75	7e NW	0 Rs
24	29.916	56.8		25.0	24.6	26.2	24.9	100	16e NE	10 R : snowing
25	29.745	45.8		20.6	20.2	22.0	19.0	78	6e W	0 Pr Rs
26	30.180	42.3		16.0	15.2	17.1	15.1	91	2e SW	10 Pm R
27	29.982	57.2		18.8	18.0	20.0	18.8	100	5e N	10 Pr : snowing
28	29.995	54.7		21.0	20.6	22.6	19.0	70	6e W	2 Pr Rs
29	30.236	50.0		1.4	1.1	below graduation			13e NW	0
30	30.217	50.7	+0.8	−0.3	0.0	below graduation			4e W	0 Pr Rs
31	30.091	62.8	20.9	20.0	20.0	21.7	17.6	62	3e SW	0

4 P.M.

Date	Barometer	Attached Thermometer	Casella 3235	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's tables (see note)	Wind	Clouds
1	30.362	64.2		23.0		24.1	21.3	82	1e W	7 Pr Rs : thin
2	30.410	60.2		23.2		24.0	22.8	100	2e W	8 Pm
3	29.253	68.0		36.0		36.4	35.2	100	0e NW	10 Pm : very foggy
4	30.153	70.0		33.2		34.0	28.6	61	3e NW	3 Rs Rm
5	29.851	56.2		34.4		34.9	33.5	100	4e E	10 haze
6	30.080	63.5		30.6		31.4	25.0	47	4e W	0
7	30.390	64.9		23.5		24.6	20.4	64	4e W	9 Pr R Rs
8	30.129	60.8		24.7		26.1	23.8	89	2e N	10 Pr
9	29.816	64.0		30.4		31.7	26.0	55	10e SW	3 Pm M Fm
10	30.082	61.4		20.9		22.0	17.0	49	10e SW	0
11	30.133	49.9		10.8		12.0	9.1	71	6e SW	0
12	30.481	56.6		17.1		18.2	14.8	68	2e W	0 Rs
13	30.268	59.0		27.3		28.3	25.9	89	2e SE	10 Pr
14	30.151	66.9		40.7		41.9	35.8	60	6e W	5 Pm Pr Rs M Fm
15	30.772	62.8		18.6		19.8	18.0	95	10e N	10 R
16	30.096	61.0		45.3		46.0	44.3	98	5e SW	8 Pm Fm haze
17	29.824	68.0		43.6		44.9	43.1	97	1e NW	10 Pm R
18	29.896	66.9		31.0		32.2	30.7	100	11e NE	10 R : snowing
19	29.859	59.0		23.5		24.9	20.9	67	15e SW	3 Pm M Fm
20	30.032	60.6		29.8		30.9	27.0	73	7e SW	10 R
21	29.740	65.8		34.5		35.8	32.4	80	6e E	10 R : snowing
22	29.774	64.3		33.4		34.7	29.6	65	11e NW	4 Pm Fm
23	30.232	64.3		22.0		23.1	18.4	55	5e N	10 R
24	29.660	56.0		21.8		22.9	21.6	100	12e NE	10 Pr : snowing
25	29.876	53.3		21.8		22.9	20.0	80	14e NW	3 M Pm
26	30.166	54.0		24.5		25.3	22.0	76	3e W	3 Pm R
27	29.714	69.3		23.1		24.3	22.9	100	9e NE	10 R : snowing
28	29.916	58.0		27.9		28.7	24.0	62	7e SW	9 Pr Rs
29	30.252	64.0		5.8		7.0	{under freezing}		9e NW	0
30	30.158	65.9	21.8	21.3		22.4	17.6	44	9e S	10 Pr Rs Rm
31	30.078	62.2	30.7	30.1		31.0	25.2	53	4e NW	1 Pr Rs

Sums of columns, number of observations, means, and reduction of barometer to the freezing point.

	10 A.M.	4 P.M.
Barometer	932.951	931.604
	31	31
	30.095	30.052
	−.074	−.090
	30.021	29.962
Attached Thermometer	1741.4	1921.0
	31	31
	56.2	62.0
No. 4	685.5	833.3
	31	31
	22.1	26.9
Minimum after setting	674.5	
	31	
	21.8	
Dry bulb	684.1	866.4
	26	31
	26.3	
	Opposite means of Jan. 11, 12, 13, 29, 30. 23.4	27.9
Relative humidity	2138	2280
	26	30
	82	76
Wind	170	194
	31	31
	5.5	6.3
Clouds	161	196
	31	31
	5.2	6.3

Rain gauge A on roof of shed north of Clock Room.

Date	Time	Ounces	Inches.

Gauge A useless this month owing to the weather.

Notes on falls of snow.

Jan. 1, 10 A.M. New snow about 2½ inches deep. 18 inches in cylinder 4 inches in diameter weighs 2¾ ounces. Hence rainfall 0.240 inches.

Jan. 24, 10 A.M. Snow about 2½ inches deep. 10½ inches in cylinder 4 inches in diameter weigh 3⅛ ounces. Hence rainfall 0.458 inches.

Jan. 24, 5 P.M. Gauge C cleared out. Snow 3½ inches deep. 12 inches in cylinder 4 inches in diameter weigh 5 ounces. Hence rainfall 0.917 inches in all: 0.429 inches since 10 A.M.

Jan. 25, 10 A.M. Snow about 3 inches deep. Packed together since 5 P.M. Jan. 24th. 13 inches in cylinder 4½ inches in diameter weigh 6 ounces. Hence rainfall 0.889 inches in all; 0.383 inches since 10 A.M. Jan. 24. The mean of these measures and that of 5 P.M. Jan. 24 gives 0.406 inches for rainfall of past 24 hours.

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1872phae.proj...3825

Harvard College Observatory. January 1873.

Date	External Thermometer No. 4 7 A.M.	2 P.M.	9 P.M.	Mean	2 P.M. Casella 3235	Casella 12580	Maximum after setting	Extreme temperatures Maximum set at 10 A.M.**	Minimum set at 10 A.M.	Maximum solar thermometer set at 4 P.M.	Solar thermometer after setting	Rainfall in inches Gauge C examined at 10 A.M.	Remarks.
1	3.8	22.8							1.2	99.8	35.3	‖0.240	
2	1.0	20.4	23.3	14.9			(24.0)	(13.4)	−2.2	102.4	30.2	0.000	Roar foot: clearing up afternoon {clouding up again after sunset.}
3	33.2	36.5	34.8	34.8					(13.2)	57.2	29.8	(0.375)	Fog and rain: thawing
4	33.0	37.0	22.5	30.8					32.0	100.2	33.0	0.177	Lunar halo at 7½ P.M.
5	14.7	33.8							13.5	95.5	34.8	0.000	{Sleet at 1 P.M.: then rain, lasting quite
6	38.3	32.4							(21.2)	92.8	39.9	(1.682)	the night, with strong wind in latter part of night.}
7	9.7	24.2					*		8.0	92.0	29.4	0.000	
8	8.6	22.4	27.5	19.5					3.3	45.3	27.5	0.000	yc {A little snow about 10 A.M. A little rain in the evening}
9	33.2	35.0	22.0	30.1			32.9	40.5	14.0	95.8	41.1	0.496	Rain previous night. Rr Sw
10	10.8	22.0	11.6	14.6			20.2	34.7	10.0	90.6	47.5	0.000	2d
11	1.3	11.2	7.5	6.7			6.5	22.0	0.3	84.7	43.6	0.000	2d
12	5.2	16.6	9.6	10.5			12.7	13.0	3.5	86.9	35.6	0.000	2d
13	14.0	27.6	36.0	25.9			22.7	22.4	7.0	40.8	30.2	0.000	y d− A little snow at times.
14	36.7	43.6	27.9	36.1			40.0	40.0	21.2	105.8	62.0	0.074	Rain previous night.
15	15.5	19.3	18.9	17.9			19.0	43.5	15.0	61.9	21.8	0.000	yRd yU
16	21.5	35.2	45.2	34.0			25.4	25.4	11.1	71.9	62.3	0.060	A little rain previous night {early in the day.}
17	46.3	46.2	(34.0)	42.2			45.0	48.2	24.9	62.2	45.8	0.618	
18	28.2	29.7	34.3	30.7			29.6	47.2	26.1	45.7	33.0	0.060	yc {Rain, sleet, and snow in the forenoon. Snow afternoon. Snow and heavy rain evening.}
19	26.5	27.2	37.9	30.5			(33.7)	(34.2)	(25.8)	65.9	58.6	(0.450)	y Rd y− Az 2dU
20	13.0	27.6	30.5	23.7			21.0	34.6	12.5	92.2	36.0	0.000	rU y< y U
21	29.8	35.8	35.0	33.5			34.4	34.2	19.8	81.9	36.0	0.020	{A little snow previous night. Rr y< Some snow and rain afternoon and evening}
22	32.4	34.4	28.4	31.7			34.8	38.0	30.5	96.9	50.1	0.290	Ryf y− Az. 2d0.
23	19.0	22.0	20.2	20.4			21.2	37.1	18.2	93.0	29.8	0.000	r y< N ycU.
24	23.5	§15.6	(11.2)	16.8			26.2	25.9	18.3	42.7	24.6	‖0.486	Snow all day with sleet at times.
25	13.5	22.9	14.3	16.9			21.4	26.6	8.1	109.0	51.3	‖0.406	
26	(10.2)	26.8	17.0	18.0			18.5	23.9	8.0	102.3	54.8	0.000	yc y> d> Rr2U.
27	18.0	23.4	22.0	21.1			20.0	26.4	15.1	54.6	25.7	‖0.224	Snow all day and evening.
28	16.5	28.0	22.0	22.2			22.0	24.2	16.2	107.0	48.2	‖0.319	rU y< y> U rJ yG.
29	1.2	5.1	−0.5	1.9			5.0	28.2	0.2	100.8	57.0	0.000	2d A few flakes of snow previous night.
30	−9.3	17.4	(16.5)	8.2	17.6	17.9	3.0	6.3	−13.9	103.0	45.2	0.000	
31	15.0	30.3			30.9	30.1	21.0	21.3	0.0	105.0	71.8	0.000	
Sums	563.7	832.4	609.6	593.6				711.2	388.1			5.971	
Means	18.2	26.9	23.4	22.8				29.63	12.52				

Rainfall for month 5.97 inches
Mean temperature " " 22.8 Fahrenheit.
Maximum " " " 48.2 Jan. 17
Minimum " " " −13.9 " 30
" " (reduced to standard of No. 4) −13.6
Highest reading of solar thermometer 109.0 Jan. 25.

Velocity of wind estimated in miles per hour: see notes in record for 1872.

Observations in parentheses ( ) were not made at the regular times. The actual times are given below.

Date	Regular times.	Actual times.
2	10 A.M.	9 P.M.
3	10 A.M.	11 A.M.
6	10 A.M.	10 7/12 A.M.
17	9 P.M.	10 5/12 P.M.
19	10 A.M.	10½ A.M.
24	9 P.M.	9½ P.M.
26	7 A.M.	7½ A.M.
30	9 P.M.	8¾ P.M.

The observers this month were as follows. The 7 A.M. thermometer reading is by Bridget Henry On and after Jan. 8 the 9 P.M. observation is by W. Winlock, who also made those at 10 A.M. Jan. 12, 10½ A.M. Jan. 19, 2 P.M. & 4 P.M. Jan. 25, 10 A.M., 2 P.M. and 4 P.M. Jan. 26. L. Trouvelot made the observations at 10 A.M., 2 P.M., 4 P.M., & 9 P.M. from 10 A.M. Jan. 2 to 10 A.M. Jan. 7, both inclusive.

The other observations are by A. Searle, who was not at the Observatory after 6 P.M. Hence notes of evening phenomena were made at Boston.

Auroras noticed.

Jan. 7. Extensive aurora with much red light seen from time to time between 6 and 9 P.M.

Jan. 26. Aurora over clouds, seen in Boston about 7 P.M.

L. Trouvelot records auroras Jan. 19 & 25.

The psychrometrical observations for January have been reduced by determining the relative humidity from Guyot's tables after subtracting 0.5 from each reading of the dry bulb, as in November & December 1872.

Notes on falls of snow continued.

Jan. 27, 10 A.M. 2 inches of light snow. 5 P.M. Gauge C cleared out. New snow about 3½ inches deep. 14 inches in cylinder 1⅞ inches in diameter weigh 2½ ounces. Hence rainfall 0.392 inches at 5 P.M.; 0.224 inches at 10 A.M.

Jan. 28, 10 A.M. Total amount of new snow about 4½ inches. 13 inches in cylinder 1⅞ inches in diameter weigh 2½ ounces. Hence rainfall 0.543 inches in all; 0.151 inches since 5 P.M. Jan. 27. 0.319 inches since 10 A.M. Jan. 27. Gauge C cleared up. Sugar out and closed.

* Wet bulb wetted at 9¼ A.M.

† Probably some error. The mercury in the wet bulb thermometer may have been concealed by the fastening.

‡ Index of barometer set by W. Winlock and read by A. Searle 3½ hours later (at 2 P.M.)

§ Carefully read; known to be 15.6 not 25.6.

‖ Rainfall from weighing and measuring snow.

** Time of setting maximum thermometer changed from 9 P.M. to 10 A.M., as the regular observer was not present in the evening.

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February 1873. Meteorological Record of

10 A.M.

Date	Barometer	Attached Thermometer	Casella 3235	Casella 12530	No. 4	Minimum after setting	Rychometer Dry bulb	Rychometer Wet bulb	Relative humidity Guyot's Tables (see note)	Wind (see note)	Clouds
1	30.022	46.2	23.6	22.9	23.4	22.5	24.4	21.0	74	2 NW	9 R
2	30.234	50.0	6.5	5.0	*4.2	5.0	8.4	4.5	44	8 W	0
3	(30.041)	(54.0)	(28.7)	(27.8)	(28.2)	(27.5)	(29.4)	(25.8)	(76)	(12 SW)	(10 R)
4	29.677	63.6	37.7	36.8	37.1	36.5	38.4	36.7	98	10 SW	10 Rm
5	30.031	68.0	33.0	32.7	32.7	32.3	33.6	26.9	48	10 N	4 Rm Fm
6	30.215	62.0	29.2	28.5	28.6	28.2	30.0	26.0	72	10 SW	1 R
7	30.080	65.0	31.9	31.0	31.5	31.0	32.8	30.3	89	4 NW	10 R haze
8	29.500	66.9	39.0	38.0	38.2	38.0	39.8	36.1	79	12 SW	1 R Rs
9	29.672	54.0	29.0	28.7	28.8	28.3	29.9	24.8	59	12 NW	7 Fm Rs
10	30.066	42.4	7.0	6.7	6.4	5.9	7.9	(under fastening)		20 NW	0
11	29.904	52.9	21.0	20.6	21.0	20.3	22.0	19.6	87	1 S	10 R: snowing
12	29.941	56.0	28.2	27.6	27.8	27.2	29.0	25.1	72	7 N	2 Rm Fm
13	30.072	58.7	12.2	12.0	12.0	11.5	13.0	10.8	86	14 N	7 R
14	30.440	61.0	14.0	13.5	13.5	13.1	15.0	11.0	54	8 N	2 R Rs
15	30.482	49.8	19.8	19.0	19.0	18.6	20.6	17.8	80	3 N	0 haze
16	30.302	52.1	29.1	28.1	28.9	28.4	30.0	32.0	100	8 SE	10 R Rm
†17	29.772	56.1	32.0	31.2	31.4	31.1	33.6	31.4	93	16 NE	10 R
18	30.427	60.2	26.4	25.5	25.8	25.4	27.2	23.6	74	1 N	0
19	30.060	54.9	38.4	37.5	38.1	37.2	39.0	36.0	86	6 S	10 Rm R
20	30.050	57.9	30.3	29.7	29.9	29.3	31.0	24.8	49	8 NW	0
21	29.718	51.6	20.0	19.0	19.6	18.9	21.0	18.5	85	4 NE	10 R: a few snowflakes
22	29.406	48.8	18.7	‡16.9	17.8	17.4	19.5	16.0	68	10 NW	0
23	29.502	41.0	13.8	13.3	13.1	12.8	14.6	11.0	60	20 NW	0
24	29.564	50.6	2.9	2.8	2.5	1.7	below graduation			13 W	9 R
25	29.650	49.5	23.0	22.4	22.5	22.2	23.9	19.8	64	5 W	1 R
26	29.902	51.7	30.2	29.7	29.8	29.3	30.9	25.9	62	13 N	0
27	29.910	59.4	26.2	25.7	26.9	25.2	27.1	23.8	77	3 NW	10 R Rm
28	29.846	58.9	32.8	32.0	32.5	31.9	33.6	29.2	70	15 N	10 Rm R

4 P.M.

Date	Barometer	Attached Thermometer	Casella 3235	Casella 12530	No. 4	Minimum after setting	Rychometer Dry bulb	Rychometer Wet bulb	Relative humidity Guyot's Tables (see note)	Wind (see note)	Clouds
1	29.952	53.0	25.8	25.0	25.5		26.2	24.0	91	4 NW	10 R Rm Rs
2	30.250	56.6	12.0	11.9	11.6		13.9	9.5	44	4 SW	0
3	29.916	55.4	37.0	36.2	36.6		37.5	33.4	74	17 SW	10 Rm
4	29.544	66.8	48.3	47.2	47.6		49.0	43.9	73	9 SW	0 haze
5	30.142	70.7	34.9	34.2	34.3		35.3	29.0	54	7 NW	0 Fm
6	30.084	62.3	40.9	40.0	40.1		41.2	34.0	49	14 SW	3 R
7	29.858	63.0	36.1	35.7	35.8		36.8	34.1	87	4 NE	10 Rm
8	29.576	70.4	42.0	41.0	41.2		42.6	35.3	50	8 W	3 M Fm
9	29.718	66.2	24.9	24.5	24.5		25.2	22.0	77	20 NW	3 Fm Rs
10	30.110	61.8	12.9	12.5	12.3		13.5	9.8	57	20 NW	0
11	29.772	66.0	28.0	27.3	27.8		28.8	25.8	82	0 S	10 R Rm Fm
12	29.941	68.0	30.3	29.7	30.0		30.9	27.8	82	7 NE	10 Rm Fm R
13	30.152	64.7	18.9	18.4	18.4		19.7	13.2	22	6 NE	5 R Rs
14	30.449	66.3	23.0	22.2	22.1		23.1	19.0	63	5 E	10 R
15	30.489	59.0	29.6	28.9	28.8		29.9	23.8	49	3 NW	0 haze
16	30.076	52.9	32.0	31.4	31.3		32.7	32.0	100	1 SE	10 R: snowing hard
17	29.967	68.5	38.0	37.6	37.9		39.7	34.2	63	8 N	0
18	30.360	60.6	31.5	30.7	30.9		32.0	27.7	70	5 E	3 R R Rs
19	29.882	67.9	40.6	39.7	40.0		41.0	39.3	98	3 S	10 Rm: some rain
20	30.049	70.4	31.2	30.5	30.8		31.8	25.5	50	12 NW	0
21	29.289	61.5	30.2	29.7	29.6		30.8	29.4	100	18 E	10 R: snowing hard
22	29.480	58.1	20.0	19.6	19.4		20.8	17.0	64	12 W	1 R Rs
23	29.450	55.5	12.0	11.8	11.6		12.0	9.5	79	12 SW	1 Rm
24	29.534	63.4	11.8	11.2	11.1		12.3	9.5	73	9 NW	0 Rs
25	29.673	63.2	32.0	31.5	31.6		32.6	26.8	56	9 W	1 R Rs
26	29.987	71.8	33.7	33.0	33.1		34.0	27.7	52	6 NW	0 Fm
27	29.760	68.5	33.1	32.6	32.8		33.7	29.4	71	3 NE	10 Rm
28	29.922	65.8	36.5	35.8	36.1		37.0	31.8	64	4 NE	10 Rm R

Sums of columns, numbers of observations, means, and reduction of barometer to the freezing point.

	10 A.M.	4 P.M.
Barometer	838.486	837.382
	28	28
	29.946	29.907
	−.071	−.094
	29.875	29.813
Attached Thermometer	1543.2	1778.3
	28	28
	55.1	63.5
Casella 3235	683.6	827.2
	28	28
	24.4	29.5
Casella 12530	664.6	809.8
	28	28
	23.7	28.9
No. 4	671.2	812.8
	28	28
	24.0	29.0
Minimum after setting	656.7	
	28	
	23.5	
Dry bulb	705.6	844.0
	27	28
	26.1	30.1
	Or, omitting estimat. for Feb. 24, mean 25.3	
Relative humidity	1906	1894
	26	28
	73	68
Wind	255	230
	28	28
	9.1	8.2
Clouds	143	130
	28	28
	5.1	4.6

Rain gauge A useless this month, owing to the weather.

Notes on falls of snow.

Feb. 17, 10 A.M. 10 measures of depth of snow, as follows: 10, 7, 8½, 9, 12, 9, 7½, 8, 8, 8½: mean 8.75 inches. 22½ inches in cylinder 1⅞ inches in diameter weigh 8 ounces. Hence rainfall 1.953 inches. Gauge C cleared out.

Feb. 22, about 11 A.M. New snow about 6½ inches deep, 17 inches in cylinder 1⅞ inches in diameter weigh 5¼ ounces. Hence rainfall 1.260 inches. Gauge C cleared out.

Feb. 28, 10 A.M. About 1¾ inches of new snow. 17½ inches in cylinder, 1⅞ inches in diameter weigh 3¾ ounces. Hence rainfall 0.235 inches.

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Harvard College Observatory. February 1873.

Date	External Thermometer No. 4 7 A.M.	2 P.M.	9 P.M.	Mean	2 P.M. Casella 3285	Casella 12530	Maximum after setting	Extreme temperatures. Maximum set at 10 A.M.	Minimum set at 10 A.M.	Maximum solar thermometer set at 4 P.M.	Solar thermometer after setting	Rainfall in inches. Gauge C examined at 10 A.M.	Remarks.
1	18.8	(26.3)	20.3	21.8			24.5	30.3	18.3	81.0	35.7	0.000	Very little snow between 3½ and 5 P.M.
2	−1.5	10.5	6.5	5.2			7.0	28.0	1.5	92.5	56.7	0.000	
3	9.5	33.5	33.5	25.5	33.8	33.0	(28.2)	(28.2)	(3.0)	56.6	40.8	(0.000)	yl A little rain and snow in the evening.
4	33.5	47.1	36.4	39.0	47.7	46.8	37.0	37.0	27.4	109.8	80.2	0.040	y Rw y=N
5	36.5	34.0	26.3	32.3	34.5	33.9	33.0	47.7	32.3	102.1	74.5	0.000	Syw y=
6	19.7	40.6	34.5	31.6	41.3	40.5	29.8	34.5	18.8	110.7	75.5	0.000	
7	28.0	34.6	(34.8)	32.5	35.0	34.0	32.2	40.6	26.2	76.2	38.6	0.000	yRc Rain in the evening.
8	35.0	42.2	34.9	37.4	42.8	41.9	38.0	37.8	31.0	108.8	62.9	0.502	rw
9		28.9	7.0				30.5	42.0	26.4	101.3	63.9	0.000	vd ← {The recent rain & thaw spoiled the sleighing, which has been good since the middle of December.}
10	3.8	12.1	9.4	8.4	12.7	12.1	9.3	30.8	3.3	87.7	52.8	0.000	rd n=N
11	15.0	25.0	23.0	21.0	25.0	24.2	21.0	21.0	6.0	52.8	32.2	0.000	A little snow in the morning.
12	26.5	32.5	25.0	28.0	32.9	32.5	28.1	28.3	20.0	99.2	37.3	0.000	Rrl y<N yc N.
13	11.3	17.9	15.1	14.8	18.3	17.8	14.2	33.0	10.1	95.8	37.9	0.000	yd A few snowflakes early in the day.
14	8.0	22.1	15.3	15.1	22.2	21.8	14.9	19.0	7.0	100.4	39.1	0.000	d Sy Thawing in the sun about noon.
15	10.7	28.1	22.0	20.3	28.7	28.0	20.3	23.1	10.4	100.0	69.1	0.000	
16	20.2	32.0	32.4	28.2			28.8	28.9	18.5	71.0	37.2	0.000	{Began to snow at 11½ A.M. Snowing hard at 4 P.M. Snow about 3 inches deep at 4 P.M.}
†17	29.3	34.4	32.8	32.2	36.2	35.1	31.4	33.2	28.2	102.1	83.0	§1.953	Cleared off about 1 P.M. Thawing.
18	20.0	31.6	27.9	26.5	32.0	31.3	26.5	38.0	18.8	104.3	69.9	0.000	rw
19	31.5	40.8	39.5	37.3	41.1	40.1	37.8	38.0	25.3	85.2	45.3	0.000	
20	27.2	31.0	21.3	26.5	31.5	30.7	30.8	41.3	26.7	103.0	77.7	0.055	
21	13.5	29.9	(22.8)	22.1	30.3	29.8	20.7	31.0	12.0	77.7	32.0	0.000	Snowing very hard about 6 P.M.
22	14.5	21.4	13.3	16.4	22.0	‡20.3	19.6	30.1	14.2	110.9	67.7	§1.260	
23	9.5	15.0	3.5	9.3			14.8	23.0	8.5	104.0	66.9	0.000	Snow drifting: a little blown into Gauge C
24	−5.5	9.6	8.9	4.3	9.9	9.9	5.8	16.9	−5.5	97.8	65.4	0.000	
25	15.2	32.2	25.1	24.2	32.8	31.9	22.9	22.8	1.8	118.4	74.8	0.000	
26	25.0	33.0	25.0	27.7	33.5	32.8	29.9	32.1	22.1	110.7	83.0	0.000	
27	15.7	33.6	30.0	26.4	33.9	32.6	27.0	33.1	13.1	91.8	40.4	0.000	
28	29.2	36.7	33.5	33.1	36.7	36.1	32.8	35.2	25.1	101.7	41.3	§0.235	Snow previous night & this morning. A few flakes later.
Sums	500.1	816.6	660.0	647.1				884.9	450.5			4.045	Rainfall for month 4.04 inches.
Means	18.5	29.2	23.6	24.0				31.60	16.09				Mean temperature " " 24.0 Fahrenheit.
													Maximum " " " 47.7 Feb. 5
													Minimum " " " −5.5 Feb. 24
													— " — (reduced to standard of No. 4) −5.0
													Highest reading of solar thermometer 118.4 Feb. 25.

Velocity of wind always merely estimated in miles per hour: see notes in record for 1872.

Observations in parentheses ( ) were not made at the regular times. The actual times are given below.

Date	Regular times.	Actual times.
1	2 P.M.	2⅓ P.M.
3	10 A.M.	12¼ P.M.
7	9 P.M.	9½ P.M.
21	9 P.M.	11 P.M.

Before wetting the cloth on the wet bulb of the psychrometer at 9¼ A.M. Feb. 15, the readings were as follows, the cloth being apparently dry: Dry bulb 18.4 Wet bulb 16.8.

The psychrometrical observations for this month have been reduced like those of November 1872, by subtracting 1.5 from each reading of the dry bulb before determining the relative humidity.

Auroras noticed.

None this month.

L. Trouvelot records auroras Feb. 20 & 24.

* The reading 4.2, Feb. 2, of No. 4 at 10 A.M. seems improbable. Perhaps it should have been 5.2.

† Some snow about the thermometers at 10 A.M. Feb. 17.

‡ Some snow lodged in the case of Casella 12530 at 10 A.M. and 2 P.M. Feb. 22.

§ Rainfall determined by weighing and measuring snow.

The observers this month were as follows: the 7 A.M. observation by Bridget Henry, " 9 P.M. " " W. Winlock; the other observations on Feb. 2, 9, 16, 23, by W. Winlock; on other days by A. Searle.

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March, 1873. Meteorological Record of

10 A.M.

Date	Barometer	Attached Thermometer	Casella 3235	Casella 12530	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity (Guot's Tables) (see note)	Wind (see note)	Clouds
1	30.092	54.3	35.2	34.7	35.0	34.3	36.0	30.4	61	6 N	10 Rs Rm
2	30.050	56.1	28.3	27.4	27.8	27.8	29.0	24.9	70	4 W	4 Rm Rs
3	29.548	60.9	26.9	26.3	26.7	25.9	27.6	26.1	100	9 N	10 R: snowing
4	29.795	55.1	20.0	19.1	19.7	18.9	21.0	17.7	73	18 NW	10 R: thin
5	30.474	51.6	18.1	17.8	17.7	17.2	19.0	14.7	55	4 NW	0
6	30.637	57.5	20.9	20.0	20.0	19.9	21.8	17.4	57	4 SW	0
7	30.414	62.2	32.2	30.9	31.4	31.1	33.0	26.9	53	4 SW	0 Rs Rs
8	29.900	58.1	39.0	38.1	38.5	38.0	40.0	34.9	67	7 S	2 haze
9	29.632	61.2	35.5	35.6	36.0	35.5	37.0	30.8	57	16 SW	4 Fm Rm
10	29.582	58.7	*27.6	*27.8	*27.9	*25.8	*27.0	26.0	100	17 NE	10 R: snowing
11	29.979	58.2	35.3	34.4	34.9	34.5	36.4	29.7	52	8 SE	4 Rs Rs
12	29.861	65.5	38.4	37.4	37.8	37.3	39.1	34.0	66	4 SW	0 Rs Rs
13	30.092	60.0	32.6	31.8	31.9	31.6	33.2	28.0	62	6 NW	3 Rs Rs Rm
14	30.182	60.7	37.9	37.0	37.3	36.7	38.4	31.7	52	7 W	0 M Fm
15	30.309	56.9	38.9	38.0	38.9	37.7	39.7	33.0	53	8 SW	10 R
16	29.506	64.0	43.0	42.0	42.7	42.0	43.9	39.5	75	2 SW	9 M Rm R
17	29.886	60.8	31.0	30.2	30.4	30.0	31.6	25.5	50	18 W	6 Fm
18	30.108	51.4	34.0	33.0	33.3	32.9	34.4	26.8	41	5 W	3 Rs Rs
19	29.726	58.2	42.1	41.6	42.1	41.0	43.0	37.1	62	9 W	10 Rs Fm
20	29.996	56.2	35.7	34.9	35.0	34.6	36.1	33.8	92	8 E	10 Rs Fm
21	29.286	59.2	37.6	37.2	37.9	37.0	39.0	35.4	80	6 SW	8 Rm Fm
22	29.481	50.8	35.0	34.1	34.5	34.0	35.8	30.2	61	7 SW	1 Rs M Fm
23	29.820	49.4	37.0	36.0	36.6	36.0	37.9	31.8	56	13 SW	9 Rs Rs
24	30.048	57.0	23.7	22.9	23.2	22.4	24.3	19.3	53	14 NW	9 Rs Rs: thin
25	30.160	54.7	27.3	26.8	27.0	26.4	28.0	24.7	78	6 NE	10 Rs Rm: snowing
26	29.770	55.0	31.2	30.4	30.7	30.2	32.0	30.4	98	6 NE	10 Rs {a little snow collected}
27	29.674	53.2	22.4	21.7	21.8	21.2	23.2	19.2	65	28 NW	2 Rs Fm
28	30.318	55.4	37.0	35.8	36.0	35.8	38.0	30.8	49	6 S	0
29	29.829	61.8	48.1	46.9	47.8	46.9	49.2	44.9	79	5 S	10 Rm Fm
30	29.058	54.9	39.0	38.1	38.6	38.0	39.9	35.0	68	15 W	10 {raining and snowing}
31	29.499	61.4	36.0	35.0	35.2	34.9	36.5	33.0	80	6 E	10 R Fm {snow in afternoon, rain in night}

4 P.M.

Date	Barometer	Attached Thermometer	Casella 3235	Casella 12530	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity (Guot's Tables) (see note)	Wind (see note)	Clouds
1	30.100	68.9	38.1	37.6	38.0		38.8	32.2	52	7 NW	10 Rs Rm
2	29.988	70.5	36.9	36.4	36.5		37.0	30.7	56	3 SW	9 Rm Fm
3	29.376	66.4	27.2	26.8	27.0		28.0	26.8	100	14 N	10 R: snowing
4	29.968	70.7	22.5	21.8	22.0		23.0	18.8	62	11 NW	2 Rs thin
5	30.509	65.8	27.6	27.0	27.1		28.0	21.4	40	5 SW	0
6	30.580	72.4	34.3	33.8	33.7		34.8	26.9	38	7 SW	0
7	30.250	61.6	43.6	42.8	43.0		44.0	36.0	47	8 SW	3 Rs haze
8	29.699	72.2	43.9	43.0	43.5		44.0	38.0	62	7 SW	10 Rm
9	29.728	65.1	31.6	31.0	31.0		32.0	26.0	52	13 SW	1 Rs
10	29.849	70.1	31.9	30.9	31.4		32.5	28.8	77	10 NW	3 Rs Fm
11	29.642	64.4	41.0	40.2	40.6		41.3	40.0	100	14 S	10 Rm: raining
12	29.883	73.2	39.9	39.0	39.1		40.2	32.2	42	4 W	3 Rm M Fm
13	30.104	70.4	36.0	35.4	35.8		36.5	29.6	50	5 NW	4 Rm Fm
14	30.208	69.1	40.8	39.9	40.1		41.0	32.1	35	6 NW	0
15	30.149	64.2	36.8	35.9	36.1		37.1	32.6	70	3 SE	10 Rs
16	(29.612)	(65.9)	(34.4)	(33.9)	(34.0)		(35.0)	(28.5)	(51)	(13 NW)	(6 M Fm)
17	29.950	62.3	34.6	33.9	34.1		35.0	27.2	39	18 NW	1 M Fm
18	29.961	61.1	40.0	39.4	39.5		40.0	31.8	40	4 SW	10 Rm
19	29.876	67.8	43.0	42.2	42.8		43.5	35.7	48	7 NW	9 Rs Rm Fm M
20	29.836	63.8	32.4	31.7	31.9		33.0	†32.0	100	7 E	10 Rs; snowing
21	29.346	63.6	35.8	35.0	35.4		36.4	29.9	54	11 SW	7 Rm M Fm
22	29.586	60.4	37.0	36.3	36.6		37.5	30.7	52	9 NW	10 Rs Rm M Fm
23	29.666	57.9	40.6	40.0	40.4		41.0	34.6	56	SW	9 Fm Rs
24	30.083	61.4	25.0	24.5	24.6		25.6	19.4	40	6 NW	7 Rs R
25	30.101	60.8	27.3	26.7	26.9		28.0			9 NE	10 Rm
26	29.357	60.5	33.0	32.4	32.6		33.7	32.2	100	6 NE	10 Rm: some rain
27	29.940	65.7	32.2	31.7	31.7		32.8	25.8	44	20 NW	2 Rs Rs
28	30.256	69.8	45.0	44.0	44.4		45.4	36.9	45	5 S	0 Rs Rs
29	29.408	67.1	43.0	42.1	42.2		43.2	41.6	99	9 E	10 Rm: raining
30	29.380	59.1	39.0	38.6	38.9		39.8	33.8	58	13 NW	9 Rm Rm
31	29.516	65.3	43.8	42.9	43.2		44.4	37.9	62	7 SW	1 Rs M Fm

Sums of columns, number of observations, means, and reduction of barometer to the freezing point.

	10 A.M.	4 P.M.
Barometer	926.712	925.907
	31	31
	29.894	29.868
	−.077	−.099
	29.817	29.769
Attached Thermometer	1780.1	2037.5
	31	31
	57.4	65.7
Casella 3235	1026.9	1118.2
	31	31
	33.1	36.1
Casella 12530	1002.9	1096.8
	31	31
	32.4	35.4
No. 4	1014.3	1104.1
	31	31
	32.7	35.6
Minimum after setting	995.5	
	31	
	32.1	
Dry bulb	1051.0	1132.5
	31	31
	33.9	36.5
Relative humidity	2065	1771
	31	30
	67	59
Wind	276	261
	31	30
	8.9	8.7
Clouds	184	186
	31	31
	5.9	6.0

Rain gauge A useless this month, owing to the weather.

Notes on falls of snow.

March 4, 10 A.M. New snow about 3½ inches deep, much drifted. 12½ inches in cylinder 1⅞ inches in diameter, weigh 2⅜ ounces. Hence rainfall 0.483 inches. If the amount collected by the rain gauge yesterday (0.055 inches) is deducted from this, there remains 0.428 inches.

March 10, 10 A.M. New snow about 3 inches deep, drifted. 12 inches in cylinder 1⅞ inches in diameter weigh 2⅜ ounces. Hence rainfall 0.431 inches.

5 P.M. New snow still 3 inches deep, but heavier. 12 inches in cylinder 1⅞ inches in diameter, weigh 3½ ounces. Hence total rainfall 0.510 inches; rainfall since 10 A.M. 0.079 inches.

March 21, 10 A.M. New snow and sleet, continued much to be well distributed; but apparently, over a new about 3½ inches deep, 19½ inches in cylinder 1⅞ inches in diameter weigh 7½ ounces. Hence rainfall 0.768 inches. By gauge 0.750 inches. The agreement of these results is no doubt accidental; neither is very certain. 0.754 [illegible] as the rainfall.

1872phae.proj..382S

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Harvard College Observatory. March 1873.

Date	External Thermometer No. 4 7 A.M.	2 P.M.	9 P.M.	Mean	2 P.M. Casella 3235	Casella 12530	Maximum after setting	Extreme temperatures. Maximum set at 10 A.M.	Minimum set at 10 A.M.	Maximum solar thermometer set at 4 P.M.	Solar thermometer after setting	Rainfall in inches. Gauge C examined at 10 A.M.	Remarks.
1	31.0	38.8	33.6	34.5	38.8	38.1	34.9	37.2	28.6	94.2	61.2	0.000	y Sw. Thawing.
2	14.8	37.5	31.0	27.8			30.0	38.8	18.0	109.0	52.0	0.000	Syw
3	25.0	27.1	21.6	24.6	27.5	26.9	27.6	37.4	23.9	51.9	35.7	0.055	Snow beginning early and continuing day & evening.
4	20.5	23.2	13.5	19.1	23.8	22.9	22.0	27.6	18.5	95.9	64.3	‡0.428	Rdy y zb.
5	9.7	26.9	18.4	18.3	27.1	26.6	19.0	23.8	8.5	105.7	73.6	0.000	zl Thawing in the sun.
6	7.5	33.8	22.3	21.2	34.4	33.7	21.8	27.4	5.8	110.9	79.4	0.000	z Sw Thawing.
7	19.5	42.5	36.0	32.7	43.0	41.9	31.9	34.1	16.1	110.2	75.6	0.000	Rrw Thawing fast.
8	29.3	45.7	37.3	37.4	46.0	45.2	38.5	43.4	28.2	108.4	50.0	0.000	Rrw y< N. Thawing fast. y- N4.
9	38.0	31.6	26.0	31.9			37.1	45.4	34.0	104.1	71.2	0.000	z RrN. y< N8.
10	27.3	*28.9	25.0	27.1	*28.9	*27.8	*26.5	38.0	24.1	112.0	71.0	‡0.431	Snow till about 3 P.M., then clearing off.
11	16.5	39.1	35.1	30.2	39.6	38.9	34.9	34.8	14.4	103.2	42.8	‡0.079	Rrl y< Rain began about 1½ P.M., & stopped about 4½ P.M.
12	32.5	40.0	30.6	34.4	40.5	39.8	38.0	41.7	32.2	111.9	83.4	0.360	zRw Thawing fast.
13	23.0	36.6	26.9	28.8	36.8	36.4	32.6	40.3	21.8	117.0	71.3	0.000	Rrw. Thawing. {Sleighing mostly gone. Ice on C about Mass. Avenue Bridge. It has lasted since about Dec. 15.}
14	29.8	38.8	33.5	34.0	39.5	38.7	37.2	37.2	26.8	113.9	82.0	0.000	Rrw
15		37.0	35.3		37.3	36.8	38.5	40.1	27.9	82.0	37.0	0.000	yc A few flakes of snow. {A little snow and rain in the evening}
16	37.5	40.6	31.7	36.6			42.6	42.1	33.4	(118.0)	(41.0)	0.014	v gn<.
17	27.6	33.2	30.0	30.3	33.8	33.0	31.7	46.0	27.0	108.0	74.6	0.000	zln.
18	25.4	41.9	35.0	34.1	41.8	40.9	33.9	34.1	22.5	114.0	43.7	0.000	Rc y<
19	37.5	44.0	36.0	39.2	44.0	43.6	41.6	41.8	33.0	120.9	59.4	0.070	yRw A little rain previous night.
20	34.0	33.1	32.3	33.1	33.9	33.0	35.6	44.1	28.7	58.7	38.2	0.000	yc Snow began at about 11½ A.M., & continued through the day. Snow & rain (in Boston) in the evening.
21		36.7	31.5		36.8	36.1	37.6	37.6	31.3	117.9	55.0	‡0.754	y Rw
22	28.3	37.8	31.5	32.5	38.0	37.2	34.8	39.8	26.8	113.9	44.6	0.000	zl y< A few snow flakes.
23	28.5	(39.6)	37.1	35.1			37.5	37.7	24.2	107.0	55.0	0.000	zl A few snow flakes in Boston.
24	23.0	24.2	22.0	23.1	24.6	24.0	24.6	40.4	21.6	107.8	56.9	0.000	l Rr Thin clouds.
25	19.0	26.4	23.0	22.8	26.8	26.0	27.2	26.9	16.4	56.8	35.5	0.000	yc {A little snow or sleet, 9 A.M. and later. Not enough to whiten the ground or roofs.}
26	23.2	32.3	31.9	29.1	32.8	32.0	30.8	30.6	21.8	45.9	39.0	0.050	yc A little snow, sleet, & rain.
27	20.2	29.4	33.5	27.7	30.0	29.2	24.0	32.8	19.5	100.7	80.0	0.330	zdn
28	20.5	(44.4)	-		(45.0)	(44.0)	35.6	35.6	18.4	116.2	91.3	0.000	zw
29	39.0	51.0	43.0	44.3	51.2	50.5	47.3	47.3	32.1	106.6	46.2	0.000	y Rain towards night.
30	37.8	40.1	35.1	37.7			40.1	57.4	36.0	113.0	61.0	0.786	vl Some snow & rain.
31		38.3	40.3		38.7	37.9	36.1	40.5	32.1	107.0	87.4	0.000	yc y- N A little snow & rain early.
Sums	725.9	1120.5	920.0	827.6				1141.9	753.6			3.357	Rainfall for month 3.36 inches.
Means	25.9	36.1	30.7	30.7				36.84	24.31				

Mean temperature " " 30.7 Fahrenheit
Maximum " " " 57.4 March 30
Minimum " " " 5.8 March 6
— " — (reduced to standard of No. 4) 6.4
Highest reading of solar thermometer 120.9 March 19.

Velocity of wind always merely estimated in miles per hour: see notes in record for 1872.

Observations in parentheses ( ) were not made at the regular times. The actual times are given below.

Date	Regular times	Actual times
16	4 P.M.	5 P.M.
23	2 P.M.	2⅔ P.M.
28	2 P.M.	2¼ P.M.

* Much snow about all the thermometers at 10 A.M. and 2 P.M. March 10.

† Wet bulb at 4 P.M. March 20 covered with snowflakes caught on the wet rag, which did not seem to be frozen. The thermometer was probably actually at the freezing point, and its reading seems to be correct.

‡ Rainfall wholly or partly determined by weighing and measuring snow. See notes on falls of snow.

Observers this month same as in February: W. Winlock observing on Sundays at 10, 2, & 4, as well as 9. The Sundays were March 2, 9, 16, 23, 30.

The observations below were made at times when the cloth about the wet bulb of the psychrometer was apparently dry. See similar notes in record for 1872.

Date	Time	Dry bulb	Wet bulb	No. 4
5	9¼ A.M.	16.0	15.0	
7	9⅓ A.M.	29.8	28.3	
8	9¼ A.M.	36.7	35.3	
11	9¼ A.M.	32.5	31.0	
13	9¼ A.M.	30.7	29.4	
14	9¼ A.M.	37.8	36.4	
15	9½ A.M.	37.9	36.8	
17	9 5/12 A.M.	31.0	29.9	
18	9½ A.M.	32.8	31.4	
19	9¼ A.M.	42.3	41.0	41.2
20	9¼ A.M.	36.6	35.2	
22	9⅓ A.M.	34.7	33.3	
24	9 1/12 A.M.	24.2	23.0	
25	9 1/12 A.M.	27.0	25.8	
26	9⅙ A.M.	31.1	29.7	29.9
27	9 5/12 A.M.	22.8	21.2	21.41
28	9½ A.M.	34.2	32.7	32.3
29	9¼ A.M.	45.4	44.0	44.2
31	9¼ A.M.	37.5	36.1	36.3

The psychrometrical observations have been reduced, like those of Nov. 1872 & later, by Guyot's Tables, after subtracting 1.5 from the reading of the dry bulb. But, by the comparisons above, this correction seems to be somewhat too large.

Wind strong March 17, and also March 27, when a different result was obtained.

Auroras noticed.

None this month. Fine aurora reported to have been seen at Concord, Mass., on the evening of March 1.

E. Frankenfield records auroras March 10, 22, 23, 24, 26, 27.

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April 1873. Meteorological Record of

10 A.M.

Date	Barometer	Attached Thermometer	Casella 3235	Casella 12530	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity (Guyot's Tables see note)	Wind	Clouds
1	30.080	62.0	41.7	40.6	41.0	40.4	42.2	35.8	56	8 NW	1 Fm R
2	29.867	59.2	37.5	36.6	36.8	36.4	38.0	36.4	97	5 E	10 Pm; raining
3	29.884	63.2	46.0	45.2	45.4	45.0	46.8	39.8	56	5 SW	7 Pm M Fm
4	30.118	61.1	43.9	43.0	43.4	42.8	44.4	36.8	49	6 NW	9 R Rs
5	30.292	56.9	36.8	36.2	36.5	35.9	37.2	33.1	72	1 N	10 R; snowing
6	30.180	53.0	40.2	39.8	39.9	39.8	40.9	36.1	69	2 SE	10 Pm Fm
7	30.044	50.6	38.6	37.6	37.9	37.3	39.1	37.5	97	4 SE	10 Pm
8	29.807	60.1	47.1	46.0	46.8	46.0	48.0	45.9	94	5 SW	10 Pm Fm; a little rain
9	30.199	63.8	41.3	40.5	40.7	40.4	41.9	36.2	61	13 NE	10 Pm
10	30.028	65.6	47.1	45.9	46.4	46.1	48.0	42.8	71	9 NW	5 R R Fm
11	30.261	56.9	54.2	53.6	54.0	53.2	55.0	44.6	42	7 SW	1 R Rs Rm
12	29.918	59.7	41.9	41.0	41.4	40.8	42.4	35.9	55	16 NE	10 Pm
13	29.610	46.2	35.6	35.0	35.3	34.8	36.2	34.7	98	6 N	10 snow & rain
14	29.572	50.2	39.9	38.9	39.2	38.8	40.4	35.6	68	10 NW	10 Pm
15	29.822	65.8	42.8	41.8	42.2	41.8	43.5	37.8	63	10 N	9 Pm M Fm
16	30.236	60.4	45.6	44.8	45.1	44.5	46.1	36.8	37	11 NE	4 R R
17	30.150	61.9	44.3	43.1	43.9	43.2	45.6	37.5	46	5 E	10 Pm
18	29.599	51.8	40.2	39.4	39.8	39.2	40.9	39.3	97	6 E	10 Pm; fine rain
19	29.626	55.2	46.0	45.2	45.7	45.0	46.8	41.2	66	4 NW	8 Pm M Fm
20	29.768	69.0	50.5	49.7	49.8	49.8	51.5	43.1	51	3 W	5 M Fm
21	29.758	65.3	44.4	43.3	44.0	43.3	45.1	39.0	61	4 NE	10 Pm
22	29.882	57.6	45.5	44.9	45.1	44.5	46.0	35.0	25	4 NW	5 R Rs; thin
23	29.810	63.9	45.7	44.5	44.9	44.5	46.2	35.8	31	7 NW	3 R Rs
24	29.836	56.5	51.8	51.5	51.2	50.7	52.4	42.2	40	3 S	1 M Fm
25	29.668	58.0	49.6	48.0	48.6	48.1	50.2	40.8	43	5 W	8 M Fm
26	29.531	55.3	46.0	45.3	45.8	44.9	46.6	38.8	50	7 W	10 Pm M Fm
27	29.870	60.6	51.3	50.3	51.0	50.7	52.0	42.1	41	5 NW	3 R Fm
28	30.163	59.2	53.8	52.8	53.3	52.5	54.4	42.1	31	6 NW	1 M Fm
29	29.980	62.6	54.8	54.0	55.1	54.0	55.8	47.5	56	3 NW	7 Pm Fm haze
30	30.123	58.9	53.4	52.1	52.7	52.2	54.3	47.5	64	4 N	1 M Fm

4 P.M.

Date	Barometer	Attached Thermometer	Casella 3235	Casella 12530	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity (Guyot's Tables see note)	Wind	Clouds
1	30.116	71.1	46.8	45.9	46.1		47.1	39.4	51	4 NW	0 haze
2	29.780	64.0	37.4	36.8	37.0		38.0	36.5	98	6 N	10 Pm; mist
3	29.884	66.8	47.2	46.6	47.0		47.9	39.2	45	8 W	10 Pm
4	30.138	70.3	48.0	47.1	47.5		48.6	38.6	37	8 NW	1 R Pm
5	30.229	64.2	40.1	39.7	40.3		40.8	36.2	70	0 calm	10 R Pm
6	30.120	59.6	41.8	40.7	41.0		42.0	37.8	74	1 S	10 Pm Fm
7	30.018	65.2	41.8	40.9	41.2		42.4	39.8	88	0 SE	10 Pm
8	29.758	69.6	58.4	57.9	58.4		59.4	53.9	74	0 S	6 Pm Fm haze
9	30.174	66.6	38.3	37.7	37.7		39.0	35.7	81	14 E	10 Pm
10	30.084	66.3	51.9	51.1	51.4		52.4	41.1	34	12 NW	1 Rs Fm
11	30.181	70.3	57.6	57.1	57.5		57.9	46.0	37	7 S	8 R R
12	29.732	58.5	33.3	32.8	32.7		34.0	32.5	98	16 NE	10 R snowing
13	29.678	61.4	34.9	34.0	34.3		35.1	33.8	100	7 NE	10: snow & rain
14	29.602	67.4	39.9	39.2	39.6		40.4	36.4	75	10 NW	10 Pm: some rain
15	29.978	65.9	45.2	44.4	44.8		45.8	39.7	62	6 NE	9 Pm M Fm
16	30.234	67.4	45.0	44.1	44.4		45.4	35.9	36	5 SE	4 R Rs Fm
17	30.024	61.3	42.7	41.2	41.2		42.0	35.8	57	6 E	9 Pm Fm
18	29.604	60.8	42.0	41.3	41.8		42.7	40.9	96	7 N	10 Pm; a little mist.
19	29.599	65.3	41.9	40.9	41.0		42.0	38.4	79	*5 E	10 Pm Fm
20	29.762	72.1	55.5	55.0	55.4		56.1	44.1	34	4 NW	7 M Fm
21	29.710	67.3	43.6	42.4	42.9		44.0	38.2	62	8 NE	10 R Pm Fm
22	29.801	64.1	49.8	48.9	49.4		50.4	39.4	33	6 W	10 R Pm; thin
23	29.784	70.8	51.9	51.0	51.5		52.4	39.9	27	8 N	5 R Rs
24	29.764	66.3	54.3	53.7	53.9		54.9	44.0	39	3 SE	10 R Pm Fm
25	29.624	64.7	49.8	49.4	49.8		50.4	39.0	36	6 W	10 Pm M Fm
26	29.567	61.0	50.0	49.4	49.8		50.7	40.9	41	14 W	10 Pm M Fm
27	29.878	68.0	55.9	55.0	55.8		56.5	44.0	33	5 NW	4 M R
28	30.004	70.6	59.4	59.0	59.5		60.0	45.1	24	8 W	4 M Fm Rs
29	29.999	69.0	49.7	48.5	48.7		50.0	45.1	73	6 E	10 Pm Fm
30	30.130	67.5	56.2	55.3	55.9		57.0	44.1	31	6 SE	1 haze M Fm

Items of columns, number of observations, means, and reduction of barometer to the freezing point.	10 A.M.	4 P.M.
Barometer	897.682	896.956
	30	30
	29.923	29.899
	−.081	−.100
	29.842	29.799
Attached Thermometer	1770.5	1983.4
	30	30
	59.0	66.1
Casella 3235	1357.5	1410.5
	30	30
	45.3	47.0
Casella 12530	1330.6	1387.0
	30	30
	44.4	46.2
No. 4	1342.9	1397.5
	30	30
	44.8	46.6
Minimum after setting	1326.6	
	30	
	44.2	
Dry bulb	1377.9	1425.3
	30	30
	45.9	47.5
Relative humidity	1787	1719
	30	30
	60	57
Wind	184	196
	30	30
	6.1	6.5
Clouds	208	229
	30	30
	6.9	7.6

Rain gauge A, on roof of Casella, north of Clock Room.
(Ice and water accumulated during the winter not worth measuring, emptied out April 2, 10 A.M.)

Date	Time	Ounces	Inches
3	10 A.M.	3 1/8	0.027
9	10 A.M.	20 1/4	0.175
10	10 A.M.	7 3/4	0.067
14	10 A.M.	191 1/2	1.657
16	10 A.M.	1 1/4	0.011
18	10 A.M.	60 1/2	0.523
21	10 A.M.	14 3/4	0.126
26	10 A.M.	3 7/8	0.034
30	10 A.M.	12 1/4	0.106
Total		315 1/2	2.726

April 12, 5 1/4 P.M. Snow 3 1/2 inches deep, 19 inches in cylinder 4 7/8 inches in diameter weigh 6 7/8 ounces. Hence rainfall due to snow 0.708 inches. Amount of rain previous to snow not very large: certainly not more than 0.500 inches should be allowed for it. Assuming it at 0.050 inches, the [illegible] 2.758 inches.

1872phae.proj..382S

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Harvard College Observatory. April 1873.

Date	External Thermometer No. 4 7 A.M.	2 P.M.	9 P.M.	Mean	2 P.M. Casella 3235	Casella 12520	Maximum after setting	Extreme temperatures. Maximum set at 10 A.M.	Minimum set at 10 A.M.	Maximum Solar thermometer set at 4 P.M.	Solar thermometer after setting	Rainfall in inches. Gauge C examined at 10 A.M.	Remarks.
1	36.7	45.5			46.1	45.0	41.2	44.1	34.2	115.1	92.8	0.018	w ⊕z y< Ag.
2	36.3	38.5	35.0	36.6	38.9	38.0	37.0	46.1	35.3	92.6	44.2	0.225	yc A little rain.
3	37.4	47.5	41.1	42.0	47.8	47.0	45.1	45.4	34.0	129.0	62.0	0.023	Ryw
4	38.2	47.6			48.0	47.1	43.3	47.4	34.0	116.0	90.4	0.000	Rew
5	35.0	38.8	37.7	37.2	38.7	38.0	37.0	48.2	32.0	91.3	51.8	0.000	yc A little snow and rain.
6	38.0	40.3	36.9	38.4			40.1	40.0	34.1	86.9	46.0	0.058	yc A little rain.
7	36.5	40.3	38.4	38.4	40.8	39.8	38.1	42.3	35.4	59.2	48.0	0.082	yc A little rain.
8	41.8	57.8	50.5	50.0	58.0	57.3	46.1	46.3	37.2	117.8	86.9	0.018	yw A little rain.
9	40.5	39.3	36.8	38.9	40.0	39.2	41.6	58.1	40.4	86.8	45.0	†0.017	yc
10	38.3	53.0	43.2	44.8	53.4	52.8	46.2	46.4	35.6	119.4	93.0	†0.067	w y>
11	36.4	58.0	43.1	45.8	58.0	57.0	53.1	53.7	33.3	126.1	89.7	0.000	rw y< A.
12	40.0	36.1	33.4	36.5	36.3	36.0	41.7	59.5	35.0	89.4	34.2	0.000	yl Mixed rain & snow after 11 A.M.; snow only after about 3 P.M.
13	37.3	35.0	34.6	35.6			35.7	41.8	32.4	68.0	40.9	†1.343	
14	35.0	(41.5)	39.0	38.5	(42.1)	(41.1)	39.0	38.9	32.7	97.2	49.5	0.430	A little rain after about 11 A.M.
15	40.2	43.9	41.1	41.7	44.1	43.3	42.4	42.4	37.6	118.5	66.9	0.016	Occasional showers.
16	40.8	45.7	37.2	41.2	46.4	45.0	45.0	46.1	36.4	115.3	89.9	†0.000	Rew
17	35.3	42.8	38.4	38.8	43.6	42.1	44.0	47.1	32.3	89.6	67.8	0.000	yc A very little sleet at about 3 P.M. & again 5½ P.M.
18	37.7	45.0	38.2	40.3	45.0	44.4	40.0	45.0	34.9	72.3	45.5	0.532	yc Rain previous night. Mist & fine rain today.
19	38.2	52.6	38.9	43.2	53.0	52.1	45.4	45.5	35.6	123.0	48.0	0.002	yw yc A2. Some rain.
20	40.5	55.0	41.7	45.7			52.1	53.0	36.4	125.0	82.9	†0.124	Ryw ⊕.
21	38.8	41.2	37.5	39.2	41.7	40.7	44.0	55.4	35.1	84.8	63.7	0.000	y Rl
22	37.3	51.1	41.0	43.1	51.0	50.6	45.2	45.1	32.0	119.8	65.0	0.000	y Rw
23	38.8	51.1	43.0	44.3	51.6	50.7	45.3	51.8	35.6	119.6	90.6	0.000	Rrw
24	40.6	57.7	47.5	48.6	57.6	57.0	51.8	51.8	35.1	125.2	66.8	0.000	rw y<
25	39.0	51.4	43.0	44.5	51.1	50.8	49.1	57.7	34.3	118.6	74.9	0.000	rRw y<
26	38.8	49.9	42.0	43.6	50.1	49.2	46.0	52.3	35.4	129.0	70.5	0.034	y Rl
27	43.2	55.8					51.1	51.8	38.0	127.1	92.0	0.000	
28	42.5	58.8	51.7	51.0	59.0	58.3	53.0	56.5	33.6	124.8	90.3	0.000	Rrw
29	45.5	53.4	47.2	48.7	54.0	52.8	54.6	60.5	42.0	128.0	49.8	0.000	Rrw y< Rain after 4 P.M.
30	42.0	54.8	48.9	48.6	55.0	54.4	53.4	58.9	38.6	121.7	96.4	0.094	Rrw
Sums	1166.6	1429.4	1107.0	1145.2				1479.1	1058.5			3.083	
Means	38.9	47.6	41.0	42.4				49.30	35.28				

Rainfall for month 3.08 inches.
Mean temperature " " 42.4 Fahrenheit.
Maximum " " " 60.5 April 29.
Minimum " " " 32.0 April 3, 22.
" (reduced to standards of No. 4) 32.6
Highest reading of solar thermometer 129.0 April 3, 26.

Velocity of wind merely estimated in miles per hour: see notes in Record for 1872.

Observations in parentheses ( ) April 14, were made at 2½ P.M. instead of 2 P.M.

Psychrometrical observations for April, 1873, reduced by subtracting 1.3 from the reading of the dry bulb thermometer, and then using the remainder with the unchanged wet bulb reading to determine the relative humidity. See annexed observations. The results of observations for March & April give

Temperature of wet bulb	Number of observations	Wet bulb below Dry bulb	Wet bulb below No. 4
20 to 30	7 [2]	1.33	0.20
30 " 40	11 [4]	1.37	0.25
40 " 50	18	1.32	0.14
50 " 60	6	1.28	0.05

The figures in brackets give the number of comparisons with No. 4

The difference of the dry & wet bulbs for temperatures between 50 & 60, 1.45, obtained last year, (see July 1872) was probably too large: possibly there may have been a change in the instruments since then.

* April 19, 4 P.M. Upper clouds move from the west.
† April 9, 10, 13, 16, 20. On these dates, either from mischievous disturbance or from falls of snow, gauge C was useless, and the rainfall was derived from the indications of gauge A or from measurement. (April 20 the water from gauge C was partly lost.)

Observers same as in February & March.

The observations below were made at times when the cloth about the wet bulb of the psychrometer was apparently dry. See similar notes in record for 1872.

Date	Time	Dry bulb	Wet bulb	No. 4
1	9 1/3 A.M.	41.2	40.0	40.1
2	9 1/6 A.M.	38.1	37.0	37.2
4	9 1/4 A.M.	43.8	42.4	42.5
9	9 1/12 A.M.	42.8	41.3	41.5
12	9 7/12 A.M.	42.0	40.7	40.9
15	9 1/6 A.M.	42.6	41.2	41.4
16	9 1/12 A.M.	44.8	43.4	43.8
17	9 1/12 A.M.	41.4	40.0	40.4
18	9 1/6 A.M.	40.5	39.0	39.2
21	9 7/12 A.M.	44.8	43.4	43.8
22	9 1/12 A.M.	43.8	42.6	42.5
23	9 A.M.	42.8	41.6	41.9
23	9 5/12 A.M.	45.9	44.5	44.6
24	9 A.M.	49.0	48.0	47.9
24	9 3/4 A.M.	51.7	50.6	49.8
25	9 1/6 A.M.	47.9	46.8	46.5
25	9 5/12 A.M.	48.3	47.0	47.0
26	9 2/12 A.M.	46.9	45.4	45.7
26	9 3/5 A.M.	47.8	46.5	46.4
28	9 A.M.	52.0	50.8	50.9
28	9 11/12 A.M.	54.6	53.1	53.3
29	8 11/12 A.M.	51.2	50.0	50.4
29	9 1/12 A.M.	53.1	52.0	52.2
29	9 5/6 A.M.	56.9	55.3	55.5

From the observations above and those of the same kind in March 1873 it appears that the dry bulb is more sensitive than that covered with the cloth, & both of them than No. 4, which has a large spherical bulb. The wet bulb thermometer is on the average 1.33 lower than the dry bulb, 0.14 lower than No. 4. There is no good evidence that the difference changes with the temperature.

Auroras noticed.

April 1, 9 1/4 P.M. Aurora seen in Boston.
" 20, 9 P.M. Aurora seen in Cambridge.
S. Trowbot records auroras April 1, 15, 19, 20, 27, 30.

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April 1873. Meteorological Record of

10 A.M.

Date	Barometer	Attached Thermometer	Casella 3235	Casella 12530	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's Tables (see note)	Wind	Clouds
1	30.080	62.0	41.7	40.6	41.0	40.4	42.2	35.8	56	8 NW	1 Fm R
2	29.867	59.2	37.5	36.6	36.8	36.4	38.0	36.4	97	5 E	10 Pm; raining
3	29.884	63.2	46.0	45.2	45.4	45.0	46.8	39.8	56	5 SW	7 Pm M Fm
4	30.118	61.1	43.9	43.0	43.4	42.8	44.4	36.8	49	6 NW	9 R Rs
5	30.292	56.9	36.8	36.2	36.5	35.9	37.2	33.1	72	1 N	10 R; snowing
6	30.180	53.0	40.2	39.8	39.9	39.8	40.9	36.1	69	2 SE	10 Pm Fm
7	30.044	50.6	38.6	37.6	37.9	37.3	39.1	37.5	97	4 SE	10 Pm
8	29.807	60.1	47.1	46.0	46.8	46.0	48.0	45.9	94	5 SW	10 Pm Fm: a little rain
9	30.199	63.8	41.3	40.5	40.7	40.4	41.9	36.2	61	13 NE	10 Pm
10	30.028	65.6	47.1	45.9	46.4	46.1	48.0	42.8	71	9 NW	5 R R Fm
11	30.261	56.9	54.2	53.6	54.0	53.2	55.0	44.6	42	7 SW	1 R Rs Rm
12	29.918	59.7	41.9	41.0	41.4	40.8	42.4	35.9	55	16 NE	10 Pm
13	29.610	46.2	35.6	35.0	35.3	34.8	36.2	34.7	98	6 N	10 snow & rain
14	29.572	50.2	39.9	38.9	39.2	38.8	40.4	35.6	68	10 NW	10 Pm
15	29.822	65.8	42.8	41.8	42.2	41.8	43.5	37.8	63	10 N	9 Pm M Fm
16	30.236	60.4	45.6	44.8	45.1	44.5	46.1	36.8	37	11 NE	4 R R
17	30.150	61.9	44.3	43.1	43.9	43.2	45.6	37.5	46	5 E	10 Pm
18	29.599	51.8	40.2	39.4	39.8	39.2	40.9	39.3	97	6 E	10 Pm; fine rain
19	29.626	55.2	46.0	45.2	45.7	45.0	46.8	41.2	66	4 NW	8 Pm M Fm
20	29.768	69.0	50.5	49.7	49.8	49.8	51.5	43.1	51	3 W	5 M Fm
21	29.758	65.3	44.4	43.3	44.0	43.3	45.1	39.0	61	4 NE	10 Pm
22	29.882	57.6	45.5	44.9	45.1	44.5	46.0	35.0	25	4 NW	5 R Rs; thin
23	29.810	63.9	45.7	44.5	44.9	44.5	46.2	35.8	31	7 NW	3 R Rs
24	29.836	56.5	51.8	51.5	51.2	50.7	52.4	42.2	40	3 S	1 M Fm
25	29.668	58.0	49.6	48.0	48.6	48.1	50.2	40.8	43	5 W	8 M Fm
26	29.531	55.3	46.0	45.3	45.8	44.9	46.6	38.8	50	7 W	10 Pm M Fm
27	29.870	60.6	51.3	50.3	51.0	50.7	52.0	42.1	41	5 NW	3 R Fm
28	30.163	59.2	53.8	52.8	53.3	52.5	54.4	42.1	31	6 NW	1 M Fm
29	29.980	62.6	54.8	54.0	55.1	54.0	55.8	47.5	56	3 NW	7 Pm Fm haze
30	30.123	58.9	53.4	52.1	52.7	52.2	54.3	47.5	64	4 N	1 M Fm

4 P.M.

Date	Barometer	Attached Thermometer	Casella 3235	Casella 12530	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's Tables (see note)	Wind	Clouds
1	30.116	71.1	46.8	45.9	46.1		47.1	39.4	51	4 NW	0 haze
2	29.780	64.0	37.4	36.8	37.0		38.0	36.5	98	6 N	10 Pm; mist
3	29.884	66.8	47.2	46.6	47.0		47.9	39.2	45	8 W	10 Pm
4	30.138	70.3	48.0	47.1	47.5		48.6	38.6	37	8 NW	1 R Pm
5	30.229	64.2	40.1	39.7	40.3		40.8	36.2	70	0 calm	10 R Pm
6	30.120	59.6	41.8	40.7	41.0		42.0	37.8	74	1 S	10 Pm Fm
7	30.018	65.2	41.8	40.9	41.2		42.4	39.8	88	0 SE	10 Pm
8	29.758	69.6	58.4	57.9	58.4		59.4	53.9	74	0 S	6 Pm Fm haze
9	30.174	66.6	38.3	37.7	37.7		39.0	35.7	81	14 E	10 Pm
10	30.084	66.3	51.9	51.1	51.4		52.4	41.1	34	12 NW	1 Rs Fm
11	30.181	70.3	57.6	57.1	57.5		57.9	46.0	37	7 S	8 R R
12	29.732	58.5	33.3	32.8	32.7		34.0	32.5	98	16 NE	10 R snowing
13	29.678	61.4	34.9	34.0	34.3		35.1	33.8	100	7 NE	10: snow & rain
14	29.602	67.4	39.9	39.2	39.6		40.4	36.4	75	10 NW	10 Pm: some rain
15	29.978	65.9	45.2	44.4	44.8		45.8	39.7	62	6 NE	9 Pm M Fm
16	30.234	67.4	45.0	44.1	44.4		45.4	35.9	36	5 SE	4 R Rs Fm
17	30.024	61.3	42.7	41.2	41.2		42.0	35.8	57	6 E	9 Pm Fm
18	29.604	60.8	42.0	41.3	41.8		42.7	40.9	96	7 N	10 Pm; a little mist.
19	29.599	65.3	41.9	40.9	41.0		42.0	38.4	79	*5 E	10 Pm Fm
20	29.762	72.1	55.5	55.0	55.4		56.1	44.1	34	4 NW	7 M Fm
21	29.710	67.3	43.6	42.4	42.9		44.0	38.2	62	8 NE	10 R Pm Fm
22	29.801	64.1	49.8	48.9	49.4		50.4	39.4	33	6 W	10 R Pm; thin
23	29.784	70.8	51.9	51.0	51.5		52.4	39.9	27	8 N	5 R Rs
24	29.764	66.3	54.3	53.7	53.9		54.9	44.0	39	3 SE	10 R Pm Fm
25	29.624	64.7	49.8	49.4	49.8		50.4	39.0	36	6 W	10 Pm M Fm
26	29.567	61.0	50.0	49.4	49.8		50.7	40.9	41	14 W	10 Pm M Fm
27	29.878	68.0	55.9	55.0	55.8		56.5	44.0	33	5 NW	4 M R
28	30.004	70.6	59.6	59.0	59.5		60.0	45.1	24	8 W	4 M Fm Rs
29	29.999	69.0	49.7	48.5	48.7		50.0	45.1	73	6 E	10 Pm Fm
30	30.130	67.5	56.2	55.3	55.9		57.0	44.1	31	6 SE	1 haze M Fm

	Sums of columns, number of observations, means, and reduction of barometer to the freezing point. 10 A.M.	4 P.M.
Barometer	897.682	896.956
	30	30
	29.923	29.899
	−.081	−.100
	29.842	29.799
Attached Thermometer	1770.5	1983.4
	30	30
	59.0	66.1
Casella 3235	1357.5	1410.5
	30	30
	45.3	47.0
Casella 12530	1330.6	1387.0
	30	30
	44.4	46.2
No. 4	1342.9	1397.5
	30	30
	44.8	46.6
Minimum after setting	1326.6	
	30	
	44.2	
Dry bulb	1377.9	1425.3
	30	30
	45.9	47.5
Relative humidity	1787	1719
	30	30
	60	57
Wind	184	196
	30	30
	6.1	6.5
Clouds	208	229
	30	30
	6.9	7.6

Rain gauge A, on roof of Stall, north of Clock Room. (Ice and water accumulated during the winter not worth measuring, emptied out April 2, 10 A.M.)

Date	Time	Ounces	Inches
3	10 A.M.	$3\frac{1}{8}$	0.027
9	10 A.M.	$20\frac{1}{4}$	0.175
10	10 A.M.	$7\frac{3}{4}$	0.067
14	10 A.M.	$191\frac{1}{2}$	1.657
16	10 A.M.	$1\frac{1}{4}$	0.011
18	10 A.M.	$60\frac{1}{2}$	0.523
21	10 A.M.	$14\frac{3}{4}$	0.126
26	10 A.M.	$3\frac{1}{8}$	0.034
30	10 A.M.	$12\frac{1}{4}$	0.106
Total		$315\frac{1}{4}$	2.726

April 12, $5\frac{1}{4}$ P.M.: Snow $3\frac{1}{2}$ inches deep. 19 inches in cylinder $4\frac{1}{2}$ inches in diameter weigh $6\frac{1}{8}$ ounces. Hence rainfall due to snow 0.708 inches. Amount of rain previous to snow not very large: certainly not more than 0.500 inches should be allowed for it. Assuming it at 0.050 inches, the rainfall is 0.758 inches.

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Harvard College Observatory. April 1873.

Date	External Thermometer No. 4 7 A.M.	2 P.M.	9 P.M.	Mean	2 P.M. Casella 3235	Casella 12520	Maximum after setting	Extreme temperatures. Maximum set at 10 A.M.	Minimum set at 10 A.M.	Maximum Solar thermometer set at 4 P.M.	Solar thermometer after setting	Rainfall in inches. Gauge C continued at 10 A.M.	Remarks.
1	36.7	45.5			46.1	45.0	41.2	44.1	34.2	115.1	92.8	0.018	w ⊼z y< N̄.
2	36.3	38.5	35.0	36.6	38.9	38.0	37.0	46.1	35.3	92.6	44.2	0.225	yc A little rain.
3	37.4	47.5	41.1	42.0	47.8	47.0	45.1	45.4	34.0	129.0	62.0	0.023	Ryw
4	38.2	47.6			48.0	47.1	43.3	47.4	34.0	116.0	90.4	0.000	Rew
5	35.0	38.8	37.7	37.2	38.7	38.0	37.0	48.2	32.0	91.3	51.8	0.000	yc A little snow and rain.
6	38.0	40.3	36.9	38.4			40.1	40.0	34.1	86.9	46.0	0.058	yc A little rain.
7	36.5	40.3	38.4	38.4	40.8	39.8	38.1	42.3	35.4	59.2	48.0	0.082	yc A little rain.
8	41.8	57.8	50.5	50.0	58.0	57.3	46.1	46.3	37.2	117.8	86.9	0.018	yw A little rain.
9	40.5	39.3	36.8	38.9	40.0	39.2	41.6	58.1	40.4	86.8	45.0	†0.017	yc
10	38.3	53.0	43.2	44.8	53.4	52.8	46.2	46.4	35.6	119.4	93.0	†0.067	w y>
11	36.4	58.0	43.1	45.8	58.0	57.0	53.1	53.7	33.3	126.1	89.7	0.000	rw y< N̄.
12	40.0	36.1	33.4	36.5	36.3	36.0	41.7	59.5	35.0	89.4	34.2	0.000	yl Mixed rain & snow after 11 A.M.; snow only after about 3 P.M.
13	37.3	35.0	34.6	35.6			35.7	41.8	32.4	68.0	40.9	†1.343	
14	35.0	(41.5)	39.0	38.5	(42.1)	(41.1)	39.0	38.9	32.7	97.2	49.5	0.430	A little rain after about 11 A.M.
15	40.2	43.9	41.1	41.7	44.1	43.3	42.4	42.4	37.6	118.5	66.9	0.016	Occasional showers.
16	40.8	45.7	37.2	41.2	46.4	45.0	45.0	46.1	36.4	115.3	89.9	†0.000	Rew
17	35.3	42.8	38.4	38.8	43.6	42.1	44.0	47.1	32.3	89.6	67.8	0.000	yc A very little sleet at about 3 P.M. & again 5½ P.M.
18	37.7	45.0	38.2	40.3	45.0	44.4	40.0	45.0	34.9	72.3	45.5	0.532	yc Rain previous night. Mist & fine rain today.
19	38.2	52.6	38.9	43.2	53.0	52.1	45.4	45.5	35.6	123.0	48.0	0.002	yw yc N̄z. Some rain.
20	40.5	55.0	41.7	45.7			52.1	53.0	36.4	125.0	82.9	†0.124	Ryw r̄g.
21	38.8	41.2	37.5	39.2	41.7	40.7	44.0	55.4	35.1	84.8	63.7	0.000	y Rl
22	37.3	51.1	41.0	43.1	51.0	50.6	45.2	45.1	32.0	119.8	65.0	0.000	y Rw
23	38.8	51.1	43.0	44.3	51.6	50.7	45.3	51.8	35.6	119.6	90.6	0.000	Rrw
24	40.6	57.7	47.5	48.6	57.6	57.0	51.8	51.8	35.1	125.2	66.8	0.000	wr y<
25	39.0	51.4	43.0	44.5	51.1	50.8	49.1	57.7	34.3	118.6	74.9	0.000	rRw y<
26	38.8	49.9	42.0	43.6	50.1	49.2	46.0	52.3	35.4	129.0	70.5	0.034	y Rl
27	43.2	55.8					51.1	51.8	38.0	127.1	92.0	0.000	
28	42.5	58.8	51.7	51.0	59.0	58.3	53.0	56.5	33.6	124.8	90.3	0.000	Rrw
29	45.5	53.4	47.2	48.7	54.0	52.8	54.6	60.5	42.0	128.0	49.8	0.000	Rrw y< Rain after 4 P.M.
30	42.0	54.8	48.9	48.6	55.0	54.4	53.4	58.9	38.6	121.7	96.4	0.094	Rrw
Sums	1166.6	1429.4	1107.0	1145.2				1479.1	1058.5			3.083	
Means	38.9	47.6	41.0	42.4				49.30	35.28				

Velocity of wind merely estimated in miles per hour: see notes in Record for 1872.

Observations in parentheses ( ), April 14, were made at 2½ P.M. instead of 2 P.M.

Psychrometrical observations for April, 1873, reduced by subtracting 1.3 from the reading of the dry bulb thermometer and then using the remainder with the unchanged wet bulb reading to determine the relative humidity. See annexed observations.

The results of observations for March & April give

Temperature of wet bulb	Number of observations	Wet bulb below Dry bulb	Wet bulb below No. 4	
20 to 30	7 [3]	1.33	0.20	The figures in brackets give the number of comparisons with No. 4
30 " 40	11 [4]	1.37	0.25	
40 " 50	18	1.32	0.14	
50 " 60	6	1.28	0.05	

The difference of the dry & wet bulbs for temperatures between 50 & 60, 1.45, obtained last year, (see July 1872) was probably too large: possibly there may have been a change in the instruments since then.

* April 19, 4 P.M. Upper clouds move from the west.

† April 9, 10, 13, 16, 20. On these dates, either from mischievous disturbance or from falls of snow, gauge C was useless, and the rainfall was derived from the indications of gauge A or from measurement. (April 20 the water from gauge C was partly lost.)

Observers same as in February & March.

The observations below were made at times when the cloth about the wet bulb of the psychrometer was apparently dry. See similar notes in record for 1872.

Date	Time	Dry bulb	Wet bulb	No. 4
1	9⅓ A.M.	41.2	40.0	40.1
2	9⅙ A.M.	38.1	37.0	37.2
4	9¼ A.M.	43.8	42.4	42.5
9	9 1/15 A.M.	42.8	41.3	41.5
12	9½ A.M.	42.0	40.7	40.9
15	9⅙ A.M.	42.6	41.2	41.4
16	9 7/12 A.M.	44.8	43.4	43.8
17	9 1/12 A.M.	41.4	40.0	40.4
18	9⅚ A.M.	40.5	39.0	39.2
21	9 7/12 A.M.	44.8	43.4	43.8
22	9 1/12 A.M.	43.8	42.6	42.5
23	9 A.M.	42.8	41.6	41.9
23	9⅚ A.M.	45.9	44.5	44.6
24	9 A.M.	49.0	48.0	47.9
24	9 5/12 A.M.	51.7	50.6	49.8
25	9 1/12 A.M.	47.9	46.8	46.5
25	9 5/12 A.M.	48.3	47.0	47.0
26	9 2/12 A.M.	46.9	45.4	45.7
26	9 7/12 A.M.	47.8	46.5	46.4
28	9 A.M.	52.0	50.8	50.9
28	9 11/12 A.M.	54.6	53.1	53.3
29	8 11/12 A.M.	51.2	50.0	50.4
29	9 2/12 A.M.	53.1	52.0	52.2
29	9 5/12 A.M.	56.9	55.3	55.5

From the observations above and those of the same kind in March 1873 it appears that the dry bulb is more sensitive than that covered with the cloth, & both of them than No. 4, which has a large spherical bulb. The wet bulb thermometer is on the average 1.33 lower than the dry bulb, 0.14 lower than No. 4. There is no good evidence that the difference changes with the temperature.

Rainfall for month 3.08 inches.

Mean temperature " " 42.4 Fahrenheit.
Maximum " " " 60.5 April 29.
Minimum " " " 32.0 April 5, 22.
" (reduced to standard of No. 4) 32.6
Highest reading of solar thermometer 129.0 April 3, 26.

Auroras noticed.

April 1, 9¼ P.M. Aurora seen in Boston.
" 20, 9 P.M. Aurora seen in Cambridge.

L. Trowbot records auroras April 1, 15, 19, 20, 27, 30.

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Meteorological Record of May 1873.

10 A.M.

Date	Barometer	Attached Thermometer	Casella 3235	Casella 12530	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's Tables (see note)	Wind	Clouds
1	30.200	62.6	61.7	60.9	61.2	60.9	62.5	46.9	24	3 N	0 haze
2	30.049	63.0	49.1	48.1	48.8	48.0	49.8	43.0	60	7 NE	10 Pm
3	29.638	61.4	38.2	37.8	38.2	37.4	39.1	36.9	93	16 NE	10 Pm
4	29.932	57.1	43.9	43.0	43.0	43.0	44.4	37.0	51	2 W	0
5	29.981	65.9	59.0	57.7	58.7	58.2	60.0	49.4	46	6 SW	9 Pm Fm
6	30.381	61.1	54.2	53.0	53.7	53.4	55.1	41.9	27	6 NW	0
7	30.457	64.1	56.0	55.7	55.8	55.4	56.7	44.9	37	6 E	4 Rs haze
8	30.478	58.6	53.8	52.8	53.2	52.7	54.4	43.0	36	4 SE	3 R Rs Rm haze
9	30.294	59.0	45.1	44.3	44.7	44.0	45.8	42.2	81	5 E	10 Pm; raining
10	30.102	64.0	50.4	49.7	50.6	49.2	51.2	49.6	98	0 calm	10 Pm; mist
11	29.998	64.0	48.8	47.9	48.1	47.9	49.1	47.9	100	4 E	10 Pm
12	29.692	64.6	*57.6	56.7	57.4	56.8	58.0	52.3	62	9 NW	10 Pm M Fm
13	29.599	62.3	63.4	62.3	63.5	62.9	64.6	54.6	53	9 S	10 Pm M
14	29.725	57.2	52.3	51.7	52.1	51.6	53.0	43.0	42	10 SW	3 M Fm R
15	29.723	54.4	52.0	51.1	51.7	51.0	52.8	43.6	47	12 NW	1 R R
16	29.837	54.2	57.8	56.9	57.9	56.9	58.4	48.4	48	4 NW	5 R R Rm M Fm
17	29.852	56.2	57.8	56.0	56.8	56.0	57.0	48.2	54	4 NW	8 M
18	29.922	62.7	56.0	55.1	56.0	55.4	56.8	47.4	49	3 NW	9 M Pm
19	29.956	58.6	60.1	59.6	60.6	59.3	61.1	47.3	31	6 NW	9 Pm Fm
20	30.298	60.7	58.6	57.9	58.6	58.0	59.4	47.2	37	2 NW	0 Fm
21	30.381	59.0	58.4	57.6	58.2	57.5	59.1	46.6	36	1 E	5 R Rs
22	30.236	61.4	56.8	55.9	56.8	55.8	57.6	54.0	85	5 S	10 Pm Fm
23	30.062	65.4	72.7	71.9	73.0	71.9	73.7	65.2	64	4 S	4 M Fm
24	29.727	68.2	72.8	71.8	73.0	71.9	73.8	66.6	70	9 SW	4 M Fm
25	29.859	62.1	70.1	69.8	70.4	69.5	70.8	59.2	49	3 NW	9 M Pm
26	(30.149)	(66.8)	(77.7)	(76.7)	(77.7)	(76.8)	(78.4)	(64.6)	(47)	(5 SW)	(7 R R M Fm)
27	30.040	64.6	72.5	71.8	72.8	71.9	73.5	61.6	50	5 SW	0 Rs haze
28	29.859	71.7	77.6	76.4	77.7	76.6	78.4	70.8	70	5 SW	4 R R
29	29.986	70.8	74.8	73.8	74.7	74.0	75.4	63.1	50	3 NW	1 R R Rs
30	30.028	64.0	58.4	57.4	58.2	57.4	59.2	51.0	59	10 NW	10 Pm Fm
31	30.409	58.1	56.5	55.4	56.3	55.8	57.7	45.8	37	2 NE	0 Fm

4 P.M.

Date	Barometer	Attached Thermometer	Casella 3235	Casella 12530	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's Tables (see note)	Wind	Clouds
1	30.088	70.9	68.2	67.7	68.5		69.0	51.9	26	5 SW	5 R M Fm
2	29.881	66.6	41.0	40.2	40.7		41.6	40.0	97	10 NE	10 Pm; raining
3	29.644	58.7	35.0	33.9	34.4		35.6	34.0	99	15 NE	10 Pm; sleet
4	29.950	70.1	52.9	52.1	52.9		53.8	44.8	49	3 NE	1 R
5	30.039	71.0	62.0	61.0	61.8		62.9	49.6	36	7 N	2 M Fm
6	30.331	71.2	58.3	57.8	58.3		59.0	46.4	35	1 E	0 haze
7	30.428	70.8	50.0	49.1	49.2		50.0	43.1	60	4 SE	7 R R Rs
8	30.400	67.2	53.4	52.5	52.7		53.8	44.1	45	7 SE	9 R Rs Rm; thin
9	30.250	64.6	44.4	43.5	43.8		45.0	42.6	91	8 NE	10 Pm; raining
10	30.088	66.8	56.7	55.9	56.9		57.3	54.0	87	0 E	10 Pm
11	29.844	63.0	48.0	47.0	47.8		48.8	47.2	98	3 NE	10 Pm; raining
12	29.692	71.7	63.6	63.0	63.6		64.2	50.7	36	7 NW	7 M Fm
13	29.526	69.0	56.6	56.0	57.0		57.3	55.2	95	3 SW	10 Pm; raining
14	29.635	62.3	57.9	57.2	57.7		58.4	44.9	30	14 SW	2 M Fm
15	29.761	60.8	58.1	57.7	58.2		58.8	47.2	40	10 NW	1 M Fm
16	29.828	60.6	60.0	59.2	60.1		60.9	49.8	44	5 N	10 Pm Fm
17	29.832	60.3	59.8	58.9	59.5		60.4	47.9	37	7 NW	5 Pm M Fm
18	29.948	65.2	52.1	51.0	51.6		52.9	46.1	63	2 SE	2 M
19	30.024	62.4	54.8	54.0	54.3		55.1	45.6	48	8 E	2 M Fm
20	30.302	64.3	56.0	55.5	55.6		56.3	44.4	35	6 SE	0
21	30.313	65.2	61.9	61.1	61.9		62.8	50.2	39	8 SW	9 R Rs
22	30.167	65.8	65.8	64.6	65.8		66.8	60.9	75	4 SW	10 Pm Fm
23	29.973	70.6	73.8	73.0	74.0		74.2	64.6	60	8 S	8 Pm M Fm
24	29.632	76.0	74.8	73.8	74.9		75.3	66.0	62	9 SW	9 Pm M Fm
25	29.950	71.2	67.0	65.9	66.9		67.8	57.9	56	1 E	2 M Rs
26	30.126	74.2	76.6	75.9	76.6		77.0	59.7	33	12 S	5 R R Rs
27	29.964	74.8	75.5	74.8	75.7		75.9	63.0	48	6 SW	9 R R
28	29.786	80.8	80.2	79.8	80.6		80.3	71.9	68	7 S	9 Pm R M Fm
29	29.966	77.1	81.0	80.0	81.3		81.7	65.9	41	1 SW	9 M R
30	30.084	66.6	62.5	61.8	62.6		63.3	49.6	34	9 NW	7 R Pm M
31	30.354	63.4	60.7	59.6	60.4		61.4	50.3	45	3 SE	0 haze

Sums of columns, number of observations, means, and reduction of barometer to the freezing point.

	10 A.M.	4 P.M.
Barometer	930.850	929.806
	31	31
	30.027	29.994
	−.090	−.105
	29.937	29.889
Attached Thermometer	1923.8	2103.2
	31	31
	62.1	67.8
Casella 3235	1824.1	1868.6
	31	31
	58.8	60.3
Casella 12530	1796.7	1843.5
	31	31
	58.0	59.5
No. 4	1819.4	1865.3
	31	31
	58.7	60.2
Minimum after setting	1797.1	
	31	
	58.0	
Dry bulb	1846.8	1887.6
	31	31
	59.6	60.9
Relative humidity	1693	1712
	31	31
	55	55
Wind	170	193
	31	31
	5.5	6.2
Clouds	175	190
	31	31
	5.6	6.1

See note of September 1873 on the state of the psychrometer

Rain gauge A, on roof of shed, north of Clock Room.

Date	Time	Ounces	Inches
3	10 A.M.	125¼	1.084
3	4½ P.M.	13½	0.117
4	7 P.M.	93¾	0.811
9	10 A.M.	3¾	0.032
9	4 P.M.	45¼	0.391
10	10 A.M.	54¼	0.469
12	10 A.M.	66¼	0.573
14	10 A.M.	18	0.156
19	10 A.M.	3½	0.030
22	10 A.M.	45¼	0.391
29	10 A.M.	3¾	0.032
Total		472½	4.086

Observers as in Feb., March and April except that on May 2, 3, 5, 6, the thermometer reading at 7 A.M. is by A. Searle, and that the observations on May 17 at 10 A.M. are by L. Trowbridge.

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Harvard College Observatory. May 1873.

Date	External Thermometer No. 4 7 A.M.	2 P.M.	9 P.M.	Mean	2 P.M. Casella 3235	Casella 12530	Maximum after setting	Extreme temperatures. Minimum set at 10 A.M.	Maximum set at 10 A.M.	Maximum solar thermometer set at 4 P.M.	Solar thermometer after setting	Rainfall in inches Gauge C examined at 10 A.M.	Remarks.
1	51.2	(68.6)	57.8	59.2	(68.8)	(67.8)	61.2	61.2	44.1	130.9	102.2	0.000	r Rh
2	53.6	43.6	38.7	45.3	43.9	43.0	49.0	68.4	48.0	106.0	42.6	0.000	y c<. Rain after 1 P.M.
3	38.0	37.3	32.1	36.1	37.4	36.9	38.8	49.2	35.9	50.0	35.9	1.100	yc {Rain, ⅝ after 2 P.M., sleet; after 4 P.M. snow: following very hard at about 6 P.M.}
4	37.8	52.9	47.0	45.9			43.0	43.0	32.5	†120.9	98.4	0.928	rw {At 10 A.M. ends about 2 inches deep, melting very fast. Day quite pleasant.}
5	49.5	65.7	52.3	55.8	65.7	64.9	57.9	58.2	41.8			0.000	yw y> A10.
6	43.9	55.0	47.3	48.7	55.2	54.7	53.9	66.6	38.7			0.000	rw n → A11 : Sz.
7	47.7	50.8	44.9	47.8	51.4	50.8	55.9	59.0	38.1			0.000	Rrw yl<
8	41.3	52.1	45.2	46.2	52.7	51.8	53.6	56.6	37.2			0.000	Ryw
9	44.5	43.7	(43.4)	43.9	44.0	43.2	45.6	54.2	42.3			0.030	yc Easterly rain all day.
10	46.0	56.2	51.0	51.1	56.1	55.1	49.7	49.7	42.3			0.857	ny Rw
11	47.2	48.0	47.0	47.4			50.0	56.0	47.0			0.160	y Rc Rain at times; afternoon rainy.
12	51.2	64.0	53.5	56.2	64.5	63.2	56.0	56.7	45.9			0.425	yw y> Rc N.
13	52.5	70.0	50.8	57.8	70.0	69.0	§60.6	64.0	42.7			0.000	yw y> Rc N. Thunder shower 3½ to 4 P.M.
14	44.5	57.3	50.7	50.8	57.7	56.9	52.6	71.3	39.9			0.158	Rrw
15	45.3	57.6	49.9	50.9	57.8	57.0	51.6	57.8	41.2			0.000	Rrw
16	46.7	61.7	53.5	54.0	61.2	60.8	57.1	58.0	41.0			0.000	yw
17	50.6	60.6	52.5	54.6	60.6	59.8	57.0	61.6	47.0			0.000	Ryw
18	54.0	52.5	47.2	51.2			55.0	61.3	46.9			0.030	Ryl : slight showers
19		63.5	49.5		63.0	62.7	59.3	60.0	41.4			0.000	yw y<
20	47.8	56.6	48.4	50.9	57.0	56.3	58.7	63.3	38.8			0.000	r Rh
21	48.0	57.6	51.0	52.2	58.1	57.0	57.8	60.2	39.2	†123.7	89.0	0.000	Ryl
22	49.2	63.2	59.0	57.1	63.0	62.3	55.8	62.0	45.6	† 86.0	75.0	0.380	yw
23	62.2	73.6	62.5	66.1	73.3	72.7	§71.0	72.3	55.1	131.2	90.9	0.000	h Ry
24	64.0	81.1	69.1	71.4	81.1	80.4	71.4	75.0	58.3	144.0	85.5	0.000	h Ry Slight thunder shower 3 P.M.
25	64.2	66.8	60.9	64.0			71.0	81.8	56.2	137.0	103.0	0.000	r Rh
26	60.4	80.0	62.0	67.5	79.9	79.1	(76.0)	(77.3)	(52.3)	143.3	106.8	(0.000)	Rhy
27	59.8	78.8	58.9	65.8	78.8	77.8	71.0	80.1	50.8	137.2	86.8	0.000	Rhy y<
28	67.5	85.8	71.9	75.1	85.7	84.7	76.3	78.2	55.0	143.9	81.0	0.000	Rhr y< Thunder shower 4½ P.M.
29	68.0	80.6	70.0	72.9	80.3	79.7	74.0	85.4	63.0	150.3	120.9	0.026	r Sy
30	60.3	61.8	53.2	58.4	61.8	60.8	59.4	80.4	57.1	134.4	81.5	0.000	Ryl Ry slight showers early.
31	50.5	57.6			58.3	57.0	57.5	63.2	41.4	130.0	104.7	0.000	
Sums	1547.4	1904.6	1582.2	1604.3				1992.0	1406.7			4.094	
Means	51.6	61.4	52.7	55.3				64.26	45.38				

Rainfall for month 4.09 inches.
Mean temperature " " " 55.3 Fahrenheit.
Maximum " " " 85.8 May 28.
Minimum " " " 32.5 May 4.
Highest reading of solar thermometer (reduced to standard of No. 4) 33.2.
Highest reading of solar thermometer 150.3 May 29.

Velocity of wind merely estimated in miles per hour: see notes in record for 1872.

Observations in parentheses ( ) were not made at the regular times. The actual times are given below.

Date.	Regular times	Actual times
1	2 P.M.	2 5/6 P.M.
9	9 P.M.	10 1/6 P.M.
26	10 A.M.	11 1/4 A.M.

Results of annexed observations for error of psychrometer.

Temperature of wet bulb thermometer	Number of observations	Wet bulb below Dry bulb	Wet bulb below No. 4
40 to 50	6	1.30	0.37
50 to 60	20	1.20	0.15
60 to 70	2	1.35	0.40
70 to 80	5	0.82	0.10
In all	33	1.17	0.19

For corrections used in finding relative humidity, see note of September, 1873.

The observations below were made at times when the cloth about the wet bulb of the psychrometer was apparently dry. See similar notes in record for 1872 and later.

Date	Time	Dry bulb	Wet bulb	No. 4
2	8 5/6 A.M.	50.2	49.0	49.5
2	9 1/3 A.M.	49.9	48.7	49.3
2	9 11/12 A.M.	49.5	48.2	48.8
5	8 5/12 A.M.	54.3	53.0	53.3
5	9 5/12 A.M.	57.0	55.9	55.8
5	9 5/6 A.M.	59.0	57.8	57.8
6	8 1/6 A.M.	49.9	48.4	48.4
6	9 1/12 A.M.	53.0	51.8	52.0
6	9 5/6 A.M.	54.4	53.0	53.3
7	8 5/6 A.M.	55.0	53.6	53.6
7	9 1/12 A.M.	56.0	54.8	54.9
7	9 2/3 A.M.	58.0	56.8	56.8
8	9 1/4 A.M.	55.0	54.0	53.7
8	9 1/2 A.M.	55.0	53.9	53.3
8	9 1/12 minute after last reading	56.0	56.2	54.7
9	9 1/3 A.M.	46.1	44.9	45.1
9	9 7/12 A.M.	46.0	44.6	44.9
13	9 3/4 A.M.	61.8	60.4	60.9
14	9 11/12 A.M.	53.8	52.7	52.4
15	9 3/4 A.M.	51.7	50.4	50.8
16	9 5/6 A.M.	59.0	57.8	58.0
19	9 3/4 A.M.	61.3	60.0	60.3
20	9 2/3 A.M.	58.5	57.2	57.6
21	9 3/4 A.M.	59.3	58.0	58.6
22	9 5/6 A.M.	57.2	55.9	56.7
23	9 5/6 A.M.	71.4	70.7	70.8
27	9 5/6 A.M.	71.2	70.2	70.4
27	9 2/3 A.M.	73.1	72.4	71.9
28	9 3/4 A.M.	77.0	76.2	76.6
29	9 1/2 A.M.	75.1	74.2	74.5
30	9 2/3 A.M.	59.3	58.0	58.5
31	9 5/8 A.M.	55.1	54.0	54.4
31	9 3/4 A.M.	56.6	55.5	55.8

Auroras noticed.

May 19, about 9 P.M. Aurora seen in Boston, mostly among clouds.

L. Trouvelot records auroras May 15, 16, 19, 23.

* Reading of C.3235 at 10 A.M. May 12 was 55.9: there was a drop of rain on the bulb. After removing this drop & waiting till 10 1/6 A.M. the thermometers read as follows: C.3235, 57.8; C.12530, 56.8; No. 4, 57.6. Hence probably for 10 A.M. C.3235 should have read 57.6.

† Solar thermometer carried off by children, & recovered May 20. Its mounting was required May 21 & its height above the ground reduced from 7 inches to 6. By being handled at this time it was set back below 89.0, where it had been set at 4 P.M. When set up at 10 A.M. May 21 it read 63.0.

§ The maximum thermometer has to be taken down & set in the room every day. The room is very commonly warmer than the external air: sometimes colder, as appears from the settings May 13 & 23.

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June, 1873. Meteorological Record of

10 A.M.

Date	Barometer	Attached thermometer	Casella 3235	Casella 12530	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's tables (Lamont)	Wind	Clouds
1	30.220	58.1	67.6	66.1	67.2	67.0	68.2	55.7	45	2 W	1 Rs
2	30.244	64.3	61.9	61.0	61.4	61.4	62.3	49.3	37	6 SE	6 R R Rs
3	30.324	60.3	53.8	53.0	53.2	53.1	54.2	42.8	36	8 E	10 R Rm
4	29.927	58.6	60.7	60.0	60.9	60.0	61.5	51.0	48	12 S	10 Rm
5	29.650	66.3	63.1	62.1	63.1	62.7	64.1	57.5	70	5 SE	10 Rm
6	29.750	62.0	73.2	72.0	73.2	72.6	74.6	64.2	57	2 W	0 Fm haze
7	29.875	63.0	62.7	61.4	62.7	61.9	63.9	59.0	79	6 NE	10 Rm M Fm
8	30.138	60.0	56.0	55.0	55.8	55.0	57.0	57.0	100	4 N	9 Rm
9	30.151	59.1	64.1	63.4	64.3	63.5	65.2	53.0	43	6 NE	0 Rs
10	29.961	61.3	69.0	68.0	69.3	68.3	70.0	60.0	56	5 N	6 R Rs
11	29.840	67.1	72.1	71.2	72.6	71.3	73.2	68.8	83	9 SW	10 Rm Fm
12	30.080	67.0	67.8	67.0	67.9	67.0	68.7	56.3	45	10 N	0 Fm
13	30.267	62.1	67.8	66.4	67.8	67.0	68.8	57.8	52	6 E	4 M Rs
14	30.102	61.4	60.0	59.0	59.7	49.2	60.8	54.8	71	7 E	9 R Fm
15	29.922	63.9	69.5	68.0	69.0	68.7	70.8	62.7	65	2 SW	3 R Rs
16	29.850	69.8	79.2	78.0	79.2	78.5	80.1	68.2	54	6 NW	0 Fm
17	29.840	71.5	73.8	72.5	73.7	72.9	74.5	62.0	48	11 NW	1 M Fm
18	29.971	65.4	69.7	68.1	69.6	68.6	70.8	55.8	36	3 NW	0 Rs
19	29.727	68.0	81.4	80.0	81.8	80.5	82.4	68.9	50	5 W	1 haze Rs
20	29.620	76.9	86.7	85.4	86.7	86.0	87.6	65.6	53	4 NW	9 Rm Fm
21	29.852	70.2	70.8	70.0	71.1	70.0	71.5	55.1	31	7 NW	1 M Fm
22	30.066	65.9	67.0	67.3	67.9	67.0	67.0	55.9	50	1 S	4 R M Fm
23	30.250	63.8	71.6	70.4	71.8	70.9	72.6	58.7	42	0 S	0 R Rs M
24	30.218	64.5	73.0	71.7	73.4	72.1	74.1	60.7	45	6 S	0 Rs Rs
25	30.386	64.0	75.0	73.7	75.0	74.2	76.2	61.7	42	1 SE	0 haze
26	30.361	66.9	79.9	78.9	80.2	79.2	80.6	62.5	33	8 SW	0 Rs Rs
27	30.130	72.6	77.8	76.9	78.3	77.1	78.7	63.8	43	8 SW	1 Rs Rs
28	29.766	72.4	81.8	80.6	82.4	81.0	82.8	71.9	59	4 W	8 Rm M R
29	29.858	75.0	82.9	82.9	84.2	83.1	84.0	73.0	59	3 SW	1 R Fm
30	29.972	74.8	82.6	81.6	83.2	82.0	83.7	73.1	61	7 S	5 M Fm Rm

4 P.M.

Date	Barometer	Attached thermometer	Casella 3235	Casella 12530	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's tables (Lamont)	Wind	Clouds
1	30.118	70.0	75.6	75.0	75.8		76.0	57.1	26	4 SW	2 Rs
2	30.150	68.0	65.0	64.0	64.8		65.6	52.8	41	2 SE	1 R R R haze
3	30.250	63.3	58.0	57.2	58.0		58.1	46.7	40	2 SE	10 R Rm
4	29.702	64.3	68.8	67.7	68.9		69.8	62.3	68	10 S	5 Rm Fm
5	29.630	70.5	64.0	63.4	63.9		64.8	55.6	57	7 SE	4 R R Rm M
6	29.738	69.0	68.7	67.6	68.6		69.7	62.0	67	2 E	7 Rs Rs M
7	29.901	67.6	60.0	58.2	59.6		61.1	59.4	97	1 NE	9 Rm M Fm
8	(30.020)	(63.9)	(60.5)	(59.8)	(60.4)		(61.0)	(53.1)	(61)	(5 E)	(3 R Fm)
9	30.088	66.7	62.5	61.8	62.3		63.1	50.1	64	6 SE	1 Rs Rs
10	29.930	69.8	69.7	69.0	69.6		69.9	58.1	49	3 SE	0 haze M Fm Rs
11	29.881	73.7	78.7	77.8	78.7		79.1	66.5	54	7 W	6 Rs R M
12	30.100	71.0	70.9	70.0	70.8		71.4	54.8	39	9 N	0 haze
13	30.214	68.8	64.6	63.8	64.4		65.1	54.1	48	7 E	0 M Rs
14	30.000	66.2	62.1	61.1	62.0		63.0	55.9	67	7 NE	10 Rm
15	29.852	73.0	78.0	76.9	78.0		78.7	66.0	50	5 SW	6 R Rs
16	29.778	78.2	85.8	85.0	85.9		86.2	67.1	34	7 SW	2 Rs R M.
17	29.857	76.2	77.9	77.0	78.0		78.4	*57.2	21	7 NW	0 M
18	(29.830)	(73.2)	(71.2)	(70.8)	(71.6)		(71.4)	(58.8)	(46)	(7 SW)	(9 Rs Rm)
19	29.721	78.9	90.8	90.0	91.3		91.3	72.5	39	6 W	6 Rm Fm
20	29.633	85.0	84.8	83.9	84.8		85.1	61.4	22	16 W	0 haze
21	29.803	74.6	76.3	75.7	76.8		77.0	59.7	33	8 NW	8 Rm Fm M Rs
22	30.082	71.1	68.4	67.2	68.0		69.0	58.0	52	1 SE	8 M Fm R
23	30.238	71.8	71.1	70.0	71.1		71.8	59.4	47	8 SE	9 Rs R Rm M Fm
24	30.209	71.6	70.2	69.1	70.0		71.1	57.2	40	6 SE	5 Rs Rs: thin
25	30.394	72.8	75.9	75.0	75.7		76.7	56.5	22	7 SE	0 Rs Rs haze
26	30.264	75.3	86.0	84.9	86.1		86.5	64.1	25	8 SW	3 Rs Rs
27	29.991	82.0	85.0	84.0	85.2		85.5	67.8	37	10 SW	0 Rs Rs
28	29.732	79.2	83.2	82.2	83.3		83.5	73.2	62	2 E	5 R R Rm M Fm
29	29.848	80.4	83.7	81.9	83.3		83.0	73.8	66	2 S	7 R M Rm
30	29.952	79.0	83.5	82.1	83.5		84.2	73.1	59	13 S	5 M Fm

Sums of columns, number of observations, means, and reduction of barometer to the freezing point

	10 A.M.	4 P.M.
Barometer	900.318	898.906
	30	30
	30.011	29.964
	−.101	−.118
	29.910	29.846
Attached thermometer	1976.2	2175.1
	30	30
	65.9	72.5
Casella 3235	2122.5	2200.9
	30	30
	70.7	73.4
Casella 12530	2091.6	2172.1
	30	30
	69.7	72.4
No. 4	2126.6	2200.4
	30	30
	70.9	73.3
Minimum after setting	2091.8	
	30	
	69.7	
Dry bulb	2149.9	2217.1
	30	30
	71.7	73.9
Relative Humidity	1593	1430
	30	30
	53	48
Wind	164	185
	30	30
	5.5	6.2
Clouds	119	131
	30	30
	34.0	4.4

See note of September 1873 on the errors of the psychrometer.

Rain gauge A, on roof of shed, north of Clock Room.

Date	Time	Ounces	Inches
5	10 A.M.	3 3/4	0.032
7	4 P.M.	16 1/2	0.143
9	10 A.M.	18 1/2	0.160
11	4 P.M.	9 3/4	0.084
17	10 A.M.	5	0.043
30	4 P.M.	4 1/4	0.037
Total		57 3/4	0.499

Observers as in Feb., March, & April, 1873. A. Searle lived in Cambridge near the Observatory after June 19, and observations of aurora recorded after that time were made in Cambridge.

1872phae.proj..3825

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Harvard College Observatory. June, 1873.

Date	External Thermometer No. 4 7 A.M.	2 P.M.	9 P.M.	Mean	2 P.M. Casella 3235	Casella 12530	Maximum after setting	Extreme temperatures Maximum set at 10 A.M.	Minimum set at 10 A.M.	Maximum solar thermometer set at 4 P.M.	Solar thermometer after setting	Rainfall in inches. Gauge C examined at 10 A.M.	Remarks.
1	56.8	75.7					66.4	67.0	42.1	143.1	111.5	0.000	
2	(57.5)	62.1	67.1	62.2	62.3	61.8	62.4	76.5	56.4	139.0	112.8	0.000	Rcl
3	52.5	58.0	50.2	53.6	58.2	57.0	55.0	66.5	48.0	115.3	73.5	0.000	yRl
4	51.5	66.9	64.0	60.8	66.8	65.6	59.9	60.3	47.7	130.0	101.4	0.000	yRl
5	58.8	62.0	54.1	58.3	62.6	61.6	63.3	70.0	57.3	138.8	102.4	0.035	yRl y> A11. y< A3.
6	55.0	68.5	61.0	61.5	68.5	67.7	72.2	72.9	48.2	143.3	98.3	0.000	Rhr y< A11
7	55.0	60.4	52.6	56.0	60.8	60.0	61.8	76.6	51.0	138.7	109.3	0.045	yw Occasional showers.
8	56.2	62.0	54.0	57.4			55.6	70.6	51.2	(125.9)	(109.0)	0.275	Showers early; clear towards night.
9	55.0	65.9			66.0	65.1	63.6	63.9	46.3	134.7	117.8	0.000	rRw
10	58.5	70.9	64.9	64.8	70.8	70.0	68.4	68.9	49.1	138.5	118.0	0.000	Rw Sy y> N.
11	68.5	76.6	66.9	70.7	76.0	75.2	70.3	73.8	59.8	143.6	126.9	0.040	Showers before noon hy> N.
12	62.2	70.9	60.0	64.4	71.0	70.1	67.4	78.2	57.1	138.7	122.0	0.040	rw
13	55.8	66.9	54.9	59.2	66.9	66.2	66.8	70.7	48.1	136.0	115.0	0.000	rl
14		64.1	55.8		64.3	63.5	59.8	68.8	44.8	133.8	76.4	0.000	yRc
15	64.2	78.6	62.0	68.3			68.4	69.0	53.7	143.0	118.1	0.020	Rcl y> w<
16	66.5	85.2	71.4	74.4	85.2	84.2	78.2	79.0	59.5	147.2	130.0	0.000	rh
17	66.8	78.1			78.0	77.3	72.8	85.4	60.8	144.6	129.5	0.020	rw
18	60.5		62.4				69.0	78.0	52.6	(140.4)	(76.4)	0.000	rw y< N.
19	66.0	89.6	(72.1)	75.9	89.0	88.2	79.6	81.1	57.1	143.8	129.9	0.000	h Rc
20	78.8	87.6			87.6	86.6	85.4	90.8	71.6	147.7	129.0	0.000	r Rhw
21	64.0	76.8	63.2	68.0	76.7	75.6	70.3	87.7	57.2	145.0	113.9	0.000	Rw A few drops of rain in the evening
22	59.0	68.0	58.4	61.8			67.2	77.1	51.3	144.0	89.0	0.000	rw
23	57.3	70.2	58.9	62.1	71.0	69.2	70.8	71.8	48.0	147.6	110.0	0.000	Rw
24	57.5	(70.9)	60.1	62.8	(70.9)	(69.8)	72.0	75.3	49.3	139.8	116.0	0.000	
25	58.2	75.8	64.6	66.2	75.9	74.7	73.0	76.4	48.1	144.2	125.3	0.000	
26	63.7	87.0	70.0	73.6	87.0	86.0	78.0	79.7	52.8	143.8	131.9	0.000	
27	64.3	85.7	69.4	73.1	85.6	84.7	77.0	86.9	56.2	148.0	130.0	0.000	
28	70.0	88.5	73.1	77.2	88.6	86.8	80.6	86.0	63.4	157.2	131.2	0.000	Slight thunder showers about noon.
29	75.5	82.1	73.0	76.9			80.9	88.5	66.2	152.9	95.9	0.010	Slight thundershower beginning at 2 P.M.
30	71.2	87.1	74.1	77.5	86.8	85.8	80.5	89.4	67.0	150.2	134.0	0.010	Very slight shower about 3 P.M.
Sums	1786.8	2142.1	1638.2	1586.7								0.495	
Means	61.6	73.9	63.0	66.1				2288.8	1621.9				
								76.23	54.06				

Rainfall for month 0.50 inches.

Mean temperature " " 66.1 Fahrenheit.
Maximum " " " 90.8 " ; June 29
Minimum " " " 42.1 " ; " 1
(reduced to standard of No. 4) 43.3
Highest reading of solar thermometer 157.2; June 28

Velocity of wind merely estimated in miles per hour: see notes in record for 1872.

Observations in parentheses ( ) were not made at the regular times. The actual times are given below.

Date	Regular times.	Actual times
2	7 A.M.	7½ A.M.
8	4 P.M.	4½ P.M.
18	4 P.M.	6 P.M.
19	9 P.M.	9½ P.M.
24	2 P.M.	2½ P.M.

Results of annexed observations for error of psychrometer.

Temperature of wet bulb thermometer	Number of observations	Wet bulb below Dry bulb	No. 4
50 to 60	1	1.20	0.40
60 to 70	11	1.15	0.12
70 to 80	12	0.92	0.16
80 to 90	5	0.82	0.40
	Mean 29	1.00	0.19

The observations below were made at times when the cloth about the wet bulb of the psychrometer was apparently dry. See similar notes in record for 1872 and later.

Date	Time	Dry bulb	Wet bulb	No. 4
4	9⅔ A.M.	61.4	60.1	60.3
5	9½ A.M.	62.0	60.7	60.5
5	9¾ A.M.	63.8	62.4	62.5
6	9¼ A.M.	72.1	70.9	70.8
6	9¾ A.M.	73.8	72.6	72.4
7	9 7/12 A.M.	63.0	61.8	61.7
7	9¾ A.M.	63.2	62.0	62.1
9	9⅝ A.M.	65.3	64.0	64.3
10	9 5/12 A.M.	69.7	68.7	69.1
11	9¾ A.M.	71.8	70.8	70.9
12	9¾ A.M.	68.9	68.0	68.1
13	9 14/12 A.M.	68.4	67.5	67.3
14	9⅔ A.M.	60.4	59.2	59.6
16	9½ A.M.	78.8	78.0	78.0
16	9¾ A.M.	78.7	77.9	78.0
17	9⅔ A.M.	73.3	72.4	72.7
17	9 11/12 A.M.	73.8	72.9	73.3
18	9½ A.M.	68.9	68.0	68.2
18	9¾ A.M.	69.8	68.6	69.0
19	10 A.M.	82.0	81.4	81.5
20	9½ A.M.	85.8	84.9	85.5
20	9¾ A.M.	86.0	85.6	85.7
21	9⅝ A.M.	71.9	71.0	70.9
23	9 11/12 A.M.	71.7	70.8	71.5
26	9¾ A.M.	81.1	80.2	80.1
27	9½ A.M.	79.2	78.3	78.2
27	9¾ A.M.	78.6	77.8	78.2
28	9⅝ A.M.	79.6	78.8	79.2
28	9 11/12 A.M.	82.0	81.3	82.0

For corrections used in finding relative humidity see note of September, 1873.

Auroras noticed.

June 20 or 22, about 10 P.M. Sky clear, aurora rather bright. The date is uncertain. It cannot have been June 21, that evening was cloudy.
June 23, about 10 P.M.
June 26, at 10 P.M.: arch & short streamers.
June 27, 10 P.M.: auroral light among clouds.
June 29, about 9½ P.M.: faint arch from Ursa Maj. to Cass. & some appearance of streamers.

L. Trouvelot records auroras June 2, 13, 15, 18, 21, (in a small gap among clouds,) 23, 26, 27.

* Read carefully.

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July 1873. Meteorological Record of

10 A.M.

Date	Barometer	Attached thermometer	Casella 3235	Casella 12530	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's Tables (see note)	Wind	Clouds
1	29.855	74.2	75.6	74.0	76.1	74.9	77.1	70.6	75	0 E	10 Pm M; thin
2	30.090	74.3	80.9	80.0	81.2	80.3	81.8	70.1	56	2 W	1 M Fm Rs
3	30.100	74.8	71.6	70.6	71.6	70.8	72.6	71.1	97	4 S	8 Pm M Fm
4											
5	29.886	76.2	85.1	84.0	85.7	84.6	86.4	73.6	54	6 SW	3 R R Rm Rs
6	29.846	75.8	78.0	77.2	78.4	77.5	79.0	65.0	46	5 NW	2 Fm
7	(30.066)	(68.2)	(70.1)	(69.5)	(70.0)	(69.9)	(71.1)	(56.6)	(38)	(6 SE)	(0 Pm Fm)
8	30.030	65.2	72.6	72.4	74.0	72.2	73.5	63.8	59	3 S	2 Rs R R Rs Fm
9	30.042	68.8	70.0	68.8	70.3	69.3	71.3	63.9	68	0 SE	8 R; thin
10	30.090	69.0	76.8	75.3	76.8	76.0	78.1	66.7	55	3 SE	4 Pm Rm Fm M
11	30.000	66.7	71.8	70.9	72.5	71.0	72.9	64.8	65	2 SW	9 Pm Rs
12	30.199	66.2	69.3	68.6	69.4	68.8	70.2	55.7	37	10 N	2 R Rs Rm Fm
13	30.320	61.5	76.0	75.0	76.3	75.0	76.9	63.1	45	3 SW	9 Rs
14	30.108	70.4	81.7	80.3	82.0	80.9	82.6	71.1	57	2 SW	0 haze Pm
15	29.884	78.8	86.4	85.3	86.6	85.9	87.1	73.7	53	7 N	1 M Fm
16	30.050	72.4	70.9	69.9	70.9	70.0	71.8	56.6	32	6 N	0 Fm
17	30.024	70.3	67.8	66.9	67.8	67.0	68.3	59.9	63	4 N	10 Pm
18	29.966	64.9	57.6	56.7	57.3	56.6	58.4	56.2	94	12 E	10 Pm; a little rain
19	29.988	62.9	58.7	58.0	58.6	58.0	59.7	58.2	99	6 NE	10 Pm; raining
20	29.940	63.9	69.7	68.3	69.5	69.0	70.0	59.0	51	2 W	2 Rs
21	29.974	68.0	68.8	68.0	69.3	68.1	69.8	60.6	61	4 NW	6 R R Pm Rm
22	30.217	67.7	75.0	73.9	74.7	74.2	75.8	61.5	81	1 NW	1 M Fm Rs
23	30.157	70.4	76.1	75.0	76.4	75.4	77.0	67.0	60	2 W	8 R Rs
24	29.948	75.8	81.0	80.1	81.4	80.2	81.7	69.8	55	5 W	7 R R Rs Pm Fm
25	30.067	73.3	75.2	74.0	75.2	74.4	75.9	63.1	48	5 E	9 R Rs Fm; thin
26	30.030	76.4	85.0	84.1	85.4	84.6	85.8	75.0	61	6 SW	0 haze
27	30.164	77.0	74.1	73.5	74.5	73.0	74.9	71.0	86	3 SW	10 Pm: raining
28	30.230	74.4	77.3	76.0	76.6	76.5	78.8	73.3	79	0 calm	10 Pm M Fm Rm
29	30.094	75.6	78.7	77.8	79.0	77.9	79.4	74.0	80	8 SW	10 Pm Fm
30	30.029	77.9	82.8	81.6	82.8	82.0	83.8	75.3	68	2 NW	4 M Fm Pm Rm Rs
31	30.181	76.3	81.6	80.5	81.6	81.0	82.3	69.6	52	3 NE	3 R Rs

4 P.M.

Date	Barometer	Attached thermometer	Casella 3235	Casella 12530	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's Tables (see note)	Wind	Clouds
1	29.854	77.4	76.8	75.8	76.9		77.3	74.4	91	5 S	10 Pm Fm
2	30.104	83.0	88.3	87.1	88.4		89.0	71.7	42	5 W	5 M Fm
3	30.009	85.9	84.8	80.7	85.0		85.1	73.8	59	17 S	5 Pm Rm Rs Fm
4											
5	29.832	81.7	86.0	85.3	86.3		85.9	76.7	67	11 S	8 R Pm M Fm Rm
6	29.892	78.0	76.0	75.6	76.5		76.8	62.2	42	5 NNW	6 M Fm
7	30.034	73.2	70.5	69.4	70.2		71.0	57.4	41	5 E	0 Rs R
8	30.000	72.7	70.7	69.7	70.5		71.4	61.7	58	4 SE	10 Pm Fm R
9	30.022	74.5	73.4	72.4	73.4		74.1	62.3	51	5 SE	5 Pm Fm Rm
10	30.042	74.3	71.8	70.8	71.4		72.2	63.7	64	8 E	5 Pm M Fm
11	29.950	70.9	69.4	68.0	68.9		70.0	63.6	72	4 E	5 Pm Fm
12	30.246	72.1	75.0	74.0	75.0		75.7	58.1	30	5 NW	1 M Fm R R Rs
13	30.252	74.9	80.6	80.0			81.0	67.0	47	4 SW	9 Rs
14	29.992	79.9	90.7	88.9	90.5		91.5	76.8	51	4 SW	9 Pm M Fm R
15	29.841	85.4	90.6	89.9	90.9		91.0	70.4	34	9 N	9 Pm M Fm
16	30.000	77.0	78.0	77.0	78.0		78.6	56.7	19	7 N	1 Pm Rm Fm
17	29.965	69.7	61.1	60.3	60.9		61.8	57.8	84	4 E	10 Pm Fm; a little rain
18	30.038	64.8	58.0	57.1	57.6		58.8	56.0	91	5 E	10 Pm
19	29.940	64.7	58.8	58.0	58.8		60.4	57.8	91	6 N	10 Pm
20	29.932	75.1	75.8	75.1	76.2		76.1	62.1	44	5 W	6 R R Pm
21	29.974	74.3	77.7	76.7	77.6		78.2	63.9	44	5 W	4 Pm M Fm
22	30.168	75.1	81.7	80.8	81.9		82.1	66.0	41	2 W	3 M Fm
23	30.082	82.8	84.9	84.0	85.1		85.3	68.2	39	9 SW	4 R R
24	29.908	79.8	84.0	83.0	84.4		84.7	68.5	42	6 W	9 R Rs M Fm
25	29.974	79.0	77.5	76.4	77.2		77.9	67.7	59	5 E	1 R haze Rs
26	30.006	82.4	88.4	87.7	88.7		88.9	73.9	49	13 SW	2 R Fm haze
27	(30.150)	(76.9)	(74.3)	(72.9)	(73.6)		(74.3)	(71.7)	(89)		(10 Pm: raining)
28	30.192	78.3	76.4	75.7	76.3		77.0	70.2	73	3 SE	4 R R Rm Pm M
29	30.014	81.0	82.9	82.0	83.1		83.2	75.0	69	6 S	8 Pm Fm M R
30	30.034	83.4	87.7	86.6	87.5		88.0	71.8	44	1 W	3 M Fm
31	30.164	81.0	80.0	78.7	80.0		80.8	69.0	55	4 SE	5 R Rs

Sums of columns, number of observations, means and reduction of barometer to the freezing point.

	10 A.M.	4 P.M.
Barometer	901.575	900.581
	30	30
	30.052	30.019
	−.114	−.130
	29.938	29.889
Attached thermometer	2137.3	2309.2
	30	30
	71.2	77.0
Casella 3235	2246.2	2331.8
	30	30
	74.9	77.7
Casella 12530	2216.2	2299.6
	30	30
	73.9	76.7
No. 4	2251.9	2250.8
	30	29
	75.1	77.6 (Dry, adding estimate for July 13, mean) 77.7
Minimum after setting	2225.0	
	30	
	74.2	
Dry bulb	2274.0	2348.0
	30	30
	75.8	78.3
Relative humidity	1875	1682
	30	30
	62	56
Wind	122	172
	30	29
	4.1	5.9
Clouds	159	177
	30	30
	5.3	5.9

See note of September 1873 on the data of the psychrometer.

Rain gauge A, on roof of shed, north of Clock Room.

Date	Time	Ounces	Inches
2	4 P.M.	$20\frac{1}{4}$	0.175
3	10 A.M.	$90\frac{1}{2}$	0.783
12	$10\frac{1}{2}$ A.M.	16	0.131
17	10 A.M.	$1\frac{1}{2}$	0.013
18	10 A.M.	99	0.856
19	10 A.M.	$101\frac{1}{2}$	0.878
19	4 P.M.	55	0.476
28	10 A.M.	$29\frac{5}{8}$	0.256
29	10 A.M.	$0\frac{1}{4}$	0.002
Total		$413\frac{5}{8}$	3.570

The difference between gauges A & C is mostly in the measurement of July 18. Possibly there is some error in the weight of water from gauge A recorded that day. The addition of 1 pound (16 oz.) would about cancel the difference.

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Harvard College Observatory. July 1873

Date	External Thermometer No. 4 7 A.M.	2 P.M.	9 P.M.	Mean	2 P.M. Casella 3235	Casella 12530	Maximum after setting	Extreme temperatures Maximum set at 10 A.M.	Minimum set at 10 A.M.	Maximum Solar thermometer set at 4 P.M.	Solar thermometer after setting	Rainfall in inches. Gauge C examined at 10 A.M.	Remarks.
1	65.8	77.5	71.5	71.6	76.8	76.1	75.0	86.4	63.6	138.8	84.5	0.000	yw Frequent slight showers.
2	72.0	88.0	78.6	79.5	88.4	86.9	80.6	88.8	65.5	153.0	122.0	0.154	zh
3	73.3	88.6	74.1	78.7	88.3	*84.8	70.2	88.4	68.8	144.8	97.2	0.740	wRy Thundershowers before 10 A.M.
4	72.2												
5	74.0	87.3	71.9	77.7	87.0	85.9	82.8	89.9	67.8	150.0	105.3	†0.000	h Sy
6	(73.2)	78.6	63.2	71.7			77.4	86.0	69.7	154.0	109.0	0.000	
7	62.0	71.7	60.4	64.7	72.0	70.7	(70.0)	(81.0)	(53.1)	139.8	121.8	(0.000)	rw
8	63.5	74.1	66.2	67.9	74.1	73.4	72.4	73.7	54.3	142.1	70.7	0.000	y Ru
9	64.3	72.0	63.0	66.4	72.2	71.1	70.0	77.2	60.1	144.0	119.2	0.000	Sy w
10	63.5	75.2	61.3	66.7	75.7	74.2	75.6	76.6	57.7	147.3	97.9	0.000	Rrw zll.
11	65.2	68.8	63.0	65.7	69.1	67.9	71.0	76.5	57.4	131.0	120.0	0.000	Ryw. Very little rain about 1 P.M. {Thundershowers after 8 P.M. also.
12	64.3	73.4	64.0	67.2	73.7	72.6	68.8	74.7	55.3	140.0	126.8	0.140	rw RzU
13	(67.5)						75.0	75.9	53.3	147.0	117.0	0.000	Rzh zRlU.
14		90.9	80.0		90.0	89.9	80.1	83.5	60.6	148.1	135.6	0.000	h Rz
15	78.0	90.3	77.8	82.0	89.7	89.2	85.4	91.3	72.2	155.6	116.9	0.000	h Rz
16	68.8	76.5	69.0	71.4	76.4	75.6	70.9	92.2	63.6	143.0	130.0	0.000	rw
17	65.0	61.6	56.6	61.1	61.8	61.0	67.6	77.8	60.0	130.0	63.2	0.008	yl A little rain at times. Heavier rain in the evening.
18	56.3	57.6	58.0	57.3	58.0	57.0	57.4	67.7	55.5	75.9	62.2	1.010	yl Drizzling rain frequently.
19	57.0	60.0	(57.3)	58.1	60.0	59.1	58.0	58.0	55.7	87.0	67.8	0.870	yl Heavy rain at times.
20	61.5		(65.6)				68.6	68.7	56.0	143.0	118.0	0.465	rw
21	60.2	70.7	66.6	65.8	70.3	69.9	68.6	76.5	57.2	142.8	122.0	0.000	wv zU.
22	63.7	80.5	‡70.4	71.5	80.7	79.4	74.0	77.0	56.2	144.0	126.3	0.000	rw
23	66.8	85.2	75.6	75.9	85.0	84.0	74.9	81.2	59.9	148.9	124.2	0.000	Ry h
24	72.2	85.6	74.7	77.5	85.1	84.6	80.0	85.0	69.5	149.0	102.6	0.000	Ry h A few drops of rain about 7 A.M.
25	69.3	76.1	73.3	72.9	76.1	75.5	74.6	85.3	62.9	137.3	119.0	0.000	h yzF yzN.
26	77.2	90.3	76.3	81.3	90.0	89.2	84.0	85.0	70.1	145.0	126.0	0.000	h Rz zU.
27	73.3	81.3	72.3	75.6			75.0	91.0	71.7	(147.2)	(73.2)		yw Some thunder showers. SzU.
28	71.0	77.9	68.4	72.4	77.8	76.9	76.7	81.4	68.9	133.9	118.0	§0.280	h y— {Fog came up suddenly about 2 P.M. Evening foggy.
29	72.5	85.7	75.0	77.7	85.2	84.9	77.7	79.8	68.0	146.0	94.6	0.000	wy A few drops of rain at times.
30	75.4	87.9	77.0	80.1	87.8	86.8	82.0	85.5	71.8	150.0	121.9	0.000	h Rz
31	71.0	82.0	74.4	75.8	82.0	81.0	80.8	87.2	66.0	144.7	124.2	0.000	h Sy
Sums	2040.0	2195.3	2005.5	1934.2				2421.2	1872.4			3.667	Rainfall for month 3.67 inches.
Means	68.0	78.4	69.2	71.6				80.71	62.41				Mean temperature " " 71.6 Fahrenheit
													Maximum " " " 92.2 " ; July 16
													Minimum " " " 53.1 " ; July 7
													" (reduced to standard of No. 4) 54.0 "
													Highest reading of solar thermometer 155.6 " ; July 15

Velocity of wind merely estimated in miles per hour: see notes in record for 1872.

Observations in parentheses ( ) were not made at the regular times. The actual times are given below.

Date	Regular times	Actual times
6	7 A.M.	$7\frac{1}{2}$ A.M.
7	10 A.M.	$10\frac{1}{3}$ A.M.
13	7 A.M.	$7\frac{1}{2}$ A.M.
19	9 P.M.	$9\frac{1}{2}$ P.M.
20	9 P.M.	$9\frac{11}{12}$ P.M.
27	4 P.M.	$4\frac{12}{5}$ P.M.

The observations below were made at times when the cloth about the wet bulb of the psychrometer was apparently dry. See similar notes in record for 1872 and later.

Date	Time	Dry bulb	Wet bulb	No. 4
2	$9\frac{5}{6}$ A.M.	81.4	80.6	81.0
5	$9\frac{5}{6}$ A.M.	86.0	85.5	85.1
7	$10\frac{1}{3}$ A.M.	72.3	71.4	71.6
8	$9\frac{3}{4}$ A.M.	75.4	74.6	74.6
9	$9\frac{5}{6}$ A.M.	69.9	68.9	69.8
10	$9\frac{14}{15}$ A.M.	77.1	76.3	76.6
11	$9\frac{11}{12}$ A.M.	73.2	72.1	72.2
12	$9\frac{11}{12}$ A.M.	70.1	69.0	70.1
14	$10\frac{1}{12}$ A.M.	82.4	81.6	81.6
15	$9\frac{1}{3}$ A.M.	86.1	85.3	85.7
15	$9\frac{5}{6}$ A.M.	86.9	86.1	86.5
16	$9\frac{5}{6}$ A.M.	71.2	70.1	70.6
22	$9\frac{5}{6}$ A.M.	75.8	74.4	74.9
23	$8\frac{11}{12}$ A.M.	75.1	74.1	74.5
23	$9\frac{3}{4}$ A.M.	76.3	75.4	76.0
24	$8\frac{11}{12}$ A.M.	79.8	79.0	79.5
24	$9\frac{5}{6}$ A.M.	82.1	81.2	81.6
25	$9\frac{3}{4}$ A.M.	75.0	74.0	74.4
26	$9\frac{1}{4}$ A.M.	84.6	83.5	83.6
26	$9\frac{3}{4}$ A.M.	84.9	84.1	84.4
30	$9\frac{1}{2}$ A.M.	82.2	81.6	81.6
30	$9\frac{1}{2}$ A.M.	83.1	82.0	82.5
31	$9\frac{11}{12}$ A.M.	82.3	81.6	81.6

Results of above observations for error of psychrometer.

Temperature of wet bulb thermometer	Number of observations	Wet bulb below Dry bulb	Wet bulb below No. 4
60 to 70	2	1.05	1.00
70 to 80	10	0.98	0.35
80 to 90	11	0.80	0.19
	Means 23	0.90	0.33

* Reading of Casella 12530 at 2 P.M. July 3 very low compared with the other thermometers. Bulb examined to see if it was wet: found dry.

† Gauge C found partly covered by a board at 10 A.M. July 5: gauge A examined: no water there.

‡ Original record at 9 P.M. July 22 defective from want of lead in the pencil: from indentation of paper record inferred on July 23 to have been 70.4.

§ Original record 0.720; but on inquiry it appeared, July 28, that this record, made at 4 P.M. July 27, was an error for 0.270: the observer, W. Winlock, distinctly remembered that the glass was only half full; the glass measures 0.500 at a time. The record 10 A.M. July 28 was 0.010; this added to 0.270 gives 0.280, which agrees tolerably with gauge A.

Observers as in June, 1873.

Auroras noticed.

July 12, 10 P.M. White light, in form of arch, suspected to be auroral, on or among clouds in the north; moon about rising.

July 23, about 9 P.M. A little aurora: one tolerably distinct streamer near the horizon below Polaris.

July 30, about $9\frac{3}{4}$ P.M. Aurora with some streamers.

L. Trouvelot records auroras July 13, 20.

Shooting star seen July 21 at $8\frac{46}{60}$ P.M.

For corrections used in finding relative humidity see note of September 1873.

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August 1873. Meteorological Record of

10 A.M.

Date	Barometer	Attached Thermometer	Casella 3235	Casella 12530	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's Table (see note)	Wind	Clouds
1	30.065	74.5	79.7	78.9	80.0	79.0	80.2	72.0	68	8 S	10 {Pm Fm Ps Rs; a little rain}
2	29.972	76.2	80.4	79.6	80.6	79.9	81.4	72.5	66	1 W	6 M Fm
3	29.916	77.1	83.2	81.9	83.3	82.3	84.0	77.1	75	1 S	1 Rs
4	30.120	73.5	74.0	72.9	73.9	73.2	74.9	64.5	57	2 N	5 R Rs R
5	30.311	69.8	72.0	71.2	72.3	71.3	72.8	62.0	54	5 E	3 M Fm
6	30.280	67.4	73.4	72.4	73.3	72.9	74.5	64.8	60	2 S	0 haze
7	30.020	71.8	74.9	73.9	75.1	74.0	75.7	67.4	66	8 SW	10 Pm Fm
8	29.922	75.6	78.7	77.8	78.6	78.0	79.5	69.2	59	5 NW	1 M Fm
9	30.048	70.8	74.5	73.6	74.5	74.7	75.0	59.8	39	1 N	1 R
10	30.182	62.1	72.4	71.1	72.0	71.5	73.0	58.0	37	1 NW	1 Rs
11	30.15										
12	30.276	67.2	69.7	68.8	69.8	68.9	70.4	56.5	40	3 SE	4 Pm M Rm haze
13	30.266	65.6	67.0	66.0	67.0	66.6	68.6	60.7	66	11 NE	8 Ps Rs M Fm
14	30.106	66.5	61.8	61.0	61.8	61.1	62.6	60.5	95	12 N	10 Pm Fm; {some rain}
15	29.958	65.4	62.7	62.0	63.3	62.6	64.4	61.5	90	6 NE	10 Pm
16	29.888	68.3	73.1	71.6	73.6	72.5	74.2	69.1	80	5 SW	10 Pm Fm
17	30.20										
18	30.298	68.4	67.5	66.6	67.5	66.8	68.5	59.3	60	5 E	10 Pm M Fm
19	30.090	67.6	63.4	62.8	63.4	62.8	64.7	62.5	94	5 N	10 Pm
20	30.216	69.0	68.4	67.2	68.7	67.8	69.0	65.8	89	5 E	10 Pm; fog
21	30.283	66.2	66.5	65.8	66.4	65.9	67.3	62.6	81	4 E	10 Pm Rs; a little rain
22	30.152	67.9	64.5	63.5	64.4	63.8	65.3	63.5	97	2 SE	10 Pm mist; raining
23	30.057	69.5	75.2	74.6	75.4	74.8	76.3	71.1	80	3 NW	5 M Fm haze
24	29.998	62.0	59.0	57.8	58.2	57.9	59.8	50.0	51	15 NW	1 Fm
25	29.916	61.6	65.1	64.3	64.9	64.5	66.1	56.2	54	4 N	0
26	29.893	64.1	63.8	62.7	63.7	63.1	65.0	57.5	65	7 N	9 Pm Fm
27	30.136	62.8	63.1	62.2	62.8	62.3	64.3	54.8	55	7 N	0 M
28	30.310	63.6	68.0	66.8	67.4	67.2	69.0	60.9	65	2 N	3 R R
29	30.378	63.3	70.0	69.0	70.2	69.3	71.4	64.8	72	0 S	5 R Rs Rm Pm
30	30.200	67.0	71.4	70.5	71.9	70.5	72.4	68.4	85	4 SW	10 Pm Fm
31	30.000	71.0	75.7	74.8	76.0	74.9	76.6	70.6	62	1 SW	9 Pm

4 P.M.

Date	Barometer	Attached Thermometer	Casella 3235	Casella 12530	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's Table (see note)	Wind	Clouds
1	29.974	82.3	84.0	83.2	84.3		84.3	74.4	70	14 S	9 Pm M Fm
2	29.935	82.4	84.8	84.3	84.9		84.4	74.0	69	1 W	4 M Fm Rs
3	29.850	83.8	81.0	82.5	83.3		81.8	70.0	55	15 W	8 M Pm
4	30.162	78.3	77.1	76.2	77.2		77.8	62.2	39	5 NW	3 Ps Rs M Fm
5	30.290	73.8	70.5	69.6	70.4		71.0	57.9	43	6 SE	2 M Fm
6	30.217	75.7	79.4	78.7	79.8		79.9	67.0	51	1 SW	10 Pm M Fm Rs
7	29.941	77.1	81.0	80.1	81.4		81.7	70.4	57	9 SW	9 Pm Fm
8	(29.872)	(79.9)	(82.9)	(82.1)	(83.2)		(83.2)	(69.4)	49	(8 SW)	(5 Pm M Fm)
9	30.034	77.1	80.0	79.0	80.4		80.6	63.9	37	1 NW	4 M Pm Fm
10	30.174	74.6	73.5	73.8	73.9		73.7	60.0	43	1 NW	1 R Rs
11	30.212	72.5	68.8	67.9	68.7	68.0	69.3	56.9	46	8 E	1 Ps Rs haze
12	30.264	72.1	67.6	66.8	67.4		68.3	59.9	63	4 E	1 Fm Rs
13	30.252	69.3	65.9	65.0	65.8		66.6	59.9	71	13 E	10 Pm Fm
14	30.023	67.0	62.0	61.2	62.0		63.0	61.5	98	16 NE	10 Pm; raining
15	29.950	68.0	67.9	66.6	67.9		68.8	64.7	85	0 calm	10 Pm
16	29.852	76.9	80.9	79.4	80.9		81.7	71.0	59	4 SW	6 M Fm
17	30.192	73.8	*73.9	71.8	72.9	72.0	74.3	61.9	49	1 E	4 R Rs
18	30.230	69.7	64.8	64.0	64.6		65.2	60.6	81	6 E	10 Pm; raining
19	30.072	72.8	75.5	75.0	†77.0		77.4	72.1	79	3 S	10 Pm Fm
20	30.214	72.2	69.7	68.8	69.4		70.0	64.6	77	6 E	10 Pm Fm
21	30.238	68.0	66.1	65.2	66.1		67.1	63.4	86	4 E	10 Pm Fm
22	30.104	69.3	‡67.4	67.2	68.6		69.4	66.3	90	2 N	10 Pm
23	30.000	76.8	69.3	68.4	69.3		70.9	67.5	87	1 NE	10 Pm M Fm
24	29.930	65.4	64.1	63.3	64.0		64.9	52.2	40	15 W	1 Fm
25	29.860	70.9	72.9	72.0	73.0		73.6	61.9	51	5 W	4 M Fm Pm R
26	29.921	69.3	65.9	65.0	65.7		66.2	58.6	66	7 SE	1 M Fm Rs
27	30.151	68.7	66.0	65.2	66.0		66.6	56.4	54	4 SE	0 haze
28	30.299	72.3	73.5	72.8	73.6		74.1	61.0	46	6 S	7 R R Rs
29	30.321	74.0	74.8	74.1	75.1		75.3	63.4	51	7 S	5 Ps Rs R Rm
30	30.090	76.3	79.0	78.0	79.2		79.9	70.6	64	6 SW	6 M Fm Pm R
31	29.938	74.9	76.2	75.4	76.7		77.0	70.8	76	1 SW	10 Pm

	10 A.M.	4 P.M.
Sums of columns, number of observations, means, and reduction of barometer to the freezing point		
Barometer	873.257	932.562
	29	31
	30.112	30.083
	−.106	−.121
	30.006	29.962
Attached Thermometer	1975.8	2285.2
	29	31
	68.1	73.7
Casella 3235	2039.1	2266.4
	29	31
	70.3	73.1
Casella 12530	2011.3	2242.6
	29	31
	69.4	72.3
No. 4	2040.0	2272.7
	29	31
	70.3	73.3
Minimum after setting	2020.1	
	29	
	69.7	
Dry bulb	2066.9	2288.0
	29	31
	71.3	73.8
Relative humidity	1962	1932
	29	31
	68	62
Wind	134	180
	29	31
	4.6	5.8
Clouds	172	191
	29	31
	5.9	6.2

See note of September, 1873, on the state of the psychrometer.

Rain gauge A on wall, 3d floor, north of Clock Room.

Date	Time	Ounces	Inches
2	10 A.M.	78 1/4	0.677
4	10 A.M.	6 3/8	0.055
14	10 A.M.	8	0.069
14	4 1/4 P.M.	141 1/2	1.224
15	10 A.M.	111 1/4	0.962
18	10 A.M.	1 1/4	0.011
19	10 1/4 A.M.	123	1.064
22	10 A.M.	39 3/4	0.344
23	10 A.M.	45 3/4	0.396
23	4 1/4 P.M.	32	0.277
25	10 A.M.	2 5/8	0.023
30	10 A.M.	5 1/2	0.044
Total		594 1/4	5.146

Observers as in June 1873: (9 P.M. reading of No. 4 August 18, 20, 21, by A. Searle)

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Harvard College Observatory. August 1873.

Date	External Thermometer No. 4 7 A.M.	2 P.M.	9 P.M.	Mean	2 P.M. Casella 3235	Casella 12530	Maximum after setting	Extreme temperatures Maximum set at 10 A.M.	Minimum set at 10 A.M.	Maximum of solar thermometer at 4 P.M.	Solar thermometer after setting	Rainfall in inches Gauge C examined at 10 A.M.	Remarks.
1	67.5	85.0			84.9	83.6	78.2	83.7	63.1	139.8	92.3	0.000	yun Thundershowers in the evening.
2	72.5	85.6	(75.3)	77.8	85.6	84.5	78.4	86.2	68.2	148.3	114.2	0.655	Rrh
3	73.5	89.2	72.6	78.4			83.0	86.0	70.3	142.0	87.3	0.000	w Slight showers towards night.
4	67.4	77.8	66.9	70.7	77.6	76.6	73.6	88.9	64.5	147.8	117.8	0.050	w Rr
5	61.0	72.2	62.3	65.2	72.7	71.4	71.8	77.7	56.4	143.0	116.4	0.000	Rrw
6	61.2	79.9	69.3	70.1	79.8	78.9	72.8	73.4	54.3	141.5	89.9	0.000	Rrh y < N.
7	67.8	82.0	65.7	71.8	81.4	80.8	74.2	80.4	63.8	133.8	94.7	0.000	Ryu A few drops of rain at times.
8	69.7	83.7	73.2	75.5	83.6	82.5	78.0	81.4	65.4	(147.8)	(110.0)	0.000	Rrh
9	64.3	78.8	65.3	69.5			74.0	84.0	61.3	150.0	105.1	0.000	
10	63.8	75.7	62.3	67.3			71.0	80.0	56.0	143.0	124.0	0.000	
11	(64.5)	71.3			71.2	70.6	(69.0)	(75.4)	(54.5)	142.3	110.7	(0.000)	
12	61.0	68.7	61.0	63.6	69.0	68.4	69.0	69.0	58.0	138.8	108.4	0.000	Rrw
13		67.2	63.0		67.0	66.4	67.3	71.2	53.0	136.7	73.2	0.000	Rl
14	60.5	61.7	61.0	61.1	61.8	61.0	61.2	68.4	60.9	75.2	64.8	0.060	yl Some rain early: steady rain after 10 A.M.
15	60.0	67.0	63.6	63.5	65.6	65.0	62.0	62.2	58.0	97.5	75.0	2.180	yw A little rain.
16	69.6	80.7	72.9	74.4	80.8	79.3	71.8	72.6	61.2	145.0	116.6	0.000	yu
17	64.0	74.3	63.5	67.3			(73.0)	(80.9)	(62.5)	139.1	113.9		Rrw
18	62.2	66.9	62.6	63.9	67.0	66.1	67.4	68.6	60.2	113.5	65.9	0.010	y Rl Some rain.
19	61.0	†74.3			72.3	71.4	62.8	67.9	60.0	145.2	94.5	1.065	yw Rain previous night.
20	63.6	71.5	(64.7)	66.6	71.5	70.3	68.3	76.3	61.0	126.4	82.0	0.000	yw
21	60.5	65.0	64.2	63.2	65.1	64.1	66.5	71.7	57.0	100.6	76.0	0.000	y Rw A little rain.
22	63.2	66.6	67.0	65.6	66.8	65.8	63.7	66.6	61.6	100.5	78.1	0.333	y Rw Some rain: rain previous night.
23	66.5	80.1			80.0	79.6	73.6	74.0	63.9	145.0	70.6	0.400	y Rw Thunder showers 2 to 4 P.M.
24	52.5	64.9	56.9	58.1			59.8	81.0	49.8	131.0	102.6	0.280	rln
25	57.2	72.3	62.8	64.1	72.6	71.3	64.6	64.7	52.9	137.3	104.0	0.000	r Rw
26	56.8	67.4	58.2	60.8	67.5	66.5	63.8	72.6	53.0	140.9	101.2	0.000	Ryy y > N.
27	57.4	65.5	57.0	60.0	65.7	65.0	63.0	67.6	50.3	135.6	101.2	0.000	rly
28	59.0	74.0	61.4	64.8	73.8	73.1	67.2	67.3	51.8	142.3	98.8	0.000	Syw
29	57.3	76.1	62.3	65.2	76.1	75.3	69.4	74.4	52.5	143.8	98.0	0.000	Syw
30	67.5	78.0	70.1	71.9	77.5	77.0	70.4	75.8	59.0	139.4	112.0	0.036	Ryu A little rain early.
31	69.2	(78.2)					73.7	78.9	63.9	121.0	82.0	0.000	Shower about 2 P.M.
Sums	1902.2	2304.6	1685.1	1680.4				2328.8	1828.3			5.069	Rainfall for month 5.07 inches.
Means	63.4	74.2	64.8	67.2				75.12	58.98				Mean temperature " " 67.2 Fahrenheit.
													Maximum " " " 88.9 " ; August 4.
													Minimum " " " 50.3 " ; " 27.
													— " — (reduced to standard of No. 4) 50.9 "
													Highest reading of solar thermometer 150.0 " ; " 9.

Velocity of wind merely estimated in miles per hour: see notes in record for 1872.

Observations in parentheses ( ) were not made at the regular times. The actual times are given below.

Date	Regular times	Actual times
2	9 P.M.	9 2/3 P.M.
8	4 P.M.	3 2/3 P.M.
11	7 A.M. 10 A.M.	7 1/2 A.M. 4 P.M.
13	10 A.M.	4 P.M.
	9 P.M.	9 1/2 P.M.
31	2 P.M.	2 1/2 P.M.

* Reading 73.9 of Casella 3235 at 4 P.M. August 17 supplied to be an error for 72.9

† Readings of No. 4 at 2 and 4 P.M. August 19 disagree considerably with those of the Casella thermometers. This was noticed at the time and the readings were carefully verified. At 2 P.M. the dry bulb of the psychrometer read 75.1.

‡ Drop of water on bulb of Casella 3235 at 4 P.M. August 22.

The observations below were made at times when the cloth about the wet bulb of the psychrometer was apparently dry. See similar notes in record for 1872 and later.

Date	Time	Dry bulb	Wet bulb	No. 4
4	9 3/4 A.M.	74.0	73.0	73.2
5	9 A.M.	70.1	69.0	69.1
5	9 2/3 A.M.	71.6	70.5	70.7
8	9 1/3 A.M.	78.0	77.1	77.2
8	9 3/4 A.M.	79.2	78.2	78.4
13	9 1/4 A.M.	67.0	65.6	65.9
13	9 2/3 A.M.	67.1	65.8	66.2
28	9 1/4 A.M.	66.8	65.6	65.0
28	9 3/4 A.M.	68.4	67.0	67.8

Results of above observations for error of psychrometer.

Temperature of wet bulb thermometer	Number of observations	Wet bulb below Dry bulb	Wet bulb below No. 4
60 to 70	5	1.28	0.20
70 to 80	4	1.00	0.18
	In all 9	1.16	0.19

For corrections used in finding relative humidity see note of September 1873.

Auroras noticed.

August 4, about 9 1/4 P.M. Aurora suspected, moon bright.

August 17, about 9 P.M. Light, apparently aurora, among and over clouds.

Lt. Tromelot records auroras Aug. 4, 12, 23, 24, 25, 26, 28.

Meteors noticed.

August 9, between 9 and 10 P.M. Several very bright meteors near the horizon.

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September 1873. Meteorological Record of

10 A.M.

Date	Barometer	Attached Thermometer	Casella 3235	Casella 12530	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative Humidity (Guyot's Tables) (see note)	Wind	Clouds
1	29.851	69.9	69.1	68.0	69.0	68.2	69.9	63.6	74	7 E	4 haze Pm Fm Rs
2	29.848	65.4	67.0	65.9	66.8	66.3	67.8	58.3	57	15 SW	1 M Fm
3	30.120	64.7	67.7	66.9	67.7	66.7	68.6	57.4	50	9 NW	7 R Rs Rm
4	29.978	64.6	64.6	63.8	64.6	63.8	65.4	63.9	98	4 SE	10 Rm; raining
5	29.852	78.1	80.8	79.9	80.5	80.0	81.6	75.0	75	2 SW	2 M Fm Pm
6	30.190	67.3	61.8	60.9	61.5	61.0	62.6	53.0	54	10 NW	1 M Fm
7											
8	30.272	63.8	64.8	64.0	64.8	64.0	65.8	57.8	64	7 NW	8 Pm M Rs Fm
9	30.478	59.6	61.4	60.7	61.1	60.7	62.7	55.0	63	0 N	1 M Fm
10	30.387	58.6	60.0	59.4	59.9	59.2	61.0	54.0	66	8 NE	7 Pm M Fm R Rs
11	30.228	63.8	62.0	61.0	62.0	61.2	63.0	57.7	77	4 N	10 Pm M Fm
12	30.068	60.2	68.1	66.9	67.5	67.3	69.9	64.4	78	3 S	0 haze
13	29.885	62.5	67.0	65.9	67.1	64.2	68.4	64.0	83	1 S	10 Pm Fm
14	29.920	64.2	55.0	54.3	54.9	53.9	55.8	52.9	89	1 NW	10 Pm; raining
15	30.200	55.4	52.6	51.7	52.0	51.7	53.4	46.6	63	3 N	2 M Fm
16	(30.014)	(56.9)	(61.0)	(60.0)	(61.0)	(60.2)	(62.0)	(56.9)	(77)	(12 SW)	(8 Pm M Fm)
17											
18											
19											
20	29.725	61.4	55.9	55.1	55.8	55.0	56.8	47.0	48	10 NW	10 Pm R Fm
21	30.238	49.8	53.3	52.3	52.8	52.5	53.9	45.0	50	1 NW	0
22	30.410	55.4	56.6	55.8	56.5	55.8	58.1	46.3	38	4 NE	9 R Rs M haze
23	30.161	56.3	56.3	55.7	56.1	55.4	57.2	54.1	88	6 E	10 Pm
24	29.940	62.2	59.0	58.4	59.0	58.0	59.8	57.7	95	4 NE	10 Pm
25	30.150	59.2	59.6	58.3	59.2	58.6	61.0	56.1	78	(3 E)	(4 Pm R Fm)
26	30.181	62.1	66.7	65.8	66.0	65.8	67.6	59.2	63	3 NW	0 Fm
27	30.234	61.3	66.4	65.4	65.9	65.8	67.6	61.5	74	7 SW	0
28	30.150	68.3	75.0	73.6	74.3	74.0	76.1	69.9	75	1 W	1 Pm
29	29.913	69.8	72.9	72.1	73.0	72.0	73.8	68.1	77	4 S	10 Pm Fm
30	29.990	65.1	55.6	54.9	55.3	54.8	56.4	48.4	58	10 N	10 Pm R

4 P.M.

Date	Barometer	Attached Thermometer	Casella 3235	Casella 12530	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative Humidity (Guyot's Tables) (see note)	Wind	Clouds
1	29.648	75.0	80.0	79.2	80.4		80.8	74.3	75	9 SW	6 Pm M Fm Rs
2	29.828	72.0	71.9	71.0	71.7		72.5	57.7	38	13 W	1 M Fm
3	30.083	71.8	72.0	71.1	72.2		72.7	60.1	47	4 SW	7 R Rs
4	29.828	70.9	75.9	75.2	76.1		76.6	71.8	82	17 SW	10 Pm Fm
5	29.830	84.4	83.3	82.7	83.3		84.0	71.0	52	10 SW	4 R Pm M Rs Fm
6	30.190	67.7	65.8	65.0	65.6		66.4	53.4	40	5 N	0
7	30.280	65.6	61.7	59.9	60.1	60.7	64.2	58.9	77	1 SE	3 M Pm Fm
8	30.354	68.6	65.2	64.8	65.3		66.0	54.9	49	9 N	9 R Pm M Fm
9	(30.422)	(65.3)	(61.0)	(60.5)	(60.8)		(61.7)	(53.5)	(60)	(5 SE)	(1 Rs Fm)
10	30.334	63.5	60.8	60.0	60.5		61.4	56.0	75	5 E	10 Pm Fm
11	30.140	67.1	63.2	62.2	63.0		64.1	58.2	73	5 SE	0 haze
12	30.014	71.0	75.1	74.6	75.1		76.0	66.3	60	5 S	0 haze M Fm
13	29.783	70.8	75.7	75.0	75.7		76.2	65.8	58	8 SW	1 Pm Rs
14	29.934	63.1	57.3	56.3	*59.6		58.0	51.7	69	1 NW	
15	30.151	61.0	57.0	55.9	56.5		57.8	51.0	66	5 SE	6 R M Fm
16											
17											
18											
19											
20	29.781	64.3	59.7	59.0	59.3		60.2	47.7	37	8 NW	3 M Fm R
21	(30.275)	(62.3)	(59.1)	(58.3)	(59.0)		(60.0)	(49.5)	(46)	(1 SW)	(0)
22	30.350	61.6	58.0	57.2	57.7		58.7	48.7	49	7 SE	1 Pm Fm M Rs R
23	30.064	61.2	61.0	60.1	60.9		61.8	57.8	84	3 E	10 Pm
24	29.979	64.6	65.9	65.1	65.7		66.8	60.0	70	2 NE	6 Pm Fm
25	30.090	65.0	60.0	59.1	59.7		60.7	55.5	76	5 E	2 R Rs Rm
26	30.191	68.4	70.9	70.0	70.0		71.5	58.3	43	2 NW	0 Rs
27	30.165	71.0	76.2	75.3	76.2		77.0	68.7	67	7 SW	0
28	30.048	76.0	81.8	80.9	82.4		82.3	70.9	57	4 SW	1 R
29	29.772	73.6	75.6	74.8	75.6		76.1	69.8	75	17 SW	4 Pm R Fm Rs
30	30.052	66.1	56.4	55.9	56.3		57.0	46.8	46	9 NW	6 R Fm

	Sums of columns, number of observations, means, and reduction of barometer to the freezing point.	
	10 A.M.	4 P.M.
Barometer	782.383	781.586
	26	26
	30.092	30.061
	−.092	−.106
	30.000	29.955
Attached Thermometer	1625.9	1771.9
	26	26
	62.5	68.1
Casella 3235	1640.2	1750.5
	26	26
	63.1	67.3
Casella 12530	1616.7	1729.1
	26	26
	62.2	66.5
No. 4	1634.3	1748.7
	26	26
	62.9	67.3
Minimum after setting	1616.1	
	26	
	62.2	
Dry bulb	1666.2	1770.5
	26	26
	64.1	68.1
Relative humidity	1812	1571
	26	26
	70	60
Wind	139	164
	26	26
	5.3	6.3
Clouds	145	91
	26	25
	5.6	3.6

See note of this month, on the state of the psychrometer.

Rain gauge A, on roof of shed, north of Clock Room.

Date	Time	Ounces	Inches
1	10 A.M.	5 1/2	0.048
1	6 P.M.	77	0.666
4	10 A.M.	41 1/2	0.359
5	10 A.M.	25	0.216
6	10 A.M.	12	0.104
8	10 A.M.	5 7/8	0.051
15	10 A.M.	10 3/4	0.093
20	1 P.M.	124 1/2	1.075
24	10 A.M.	64 3/4	0.560
30	10 1/2 A.M.	23 1/2	0.200
Total		389 7/8	3.372

Observers as in June, 1873.

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Harvard College Observatory. September 1873.

Date	External Thermometer No. 4				2 P.M.		Maximum after setting	Extreme temperatures			Solar thermometer after setting	Rainfall in inches. Gauge C examined at 10 A.M.	Remarks.
	7 A.M.	2 P.M.	9 P.M.	Mean	Casella 3235	Casella 12530		Maximum set at 10 A.M.	Minimum set at 10 A.M.	Maximum solar thermometer set at 4 P.M.			
1	67.5	77.0	65.8	70.1	76.9	75.4	68.7	80.2	62.0	131.8	95.0	0.048	Thunder shower 5 to 5½ P.M.; rainbow a few minutes after shower.
2	65.0	71.5	62.6	66.4	71.1	70.8	66.4	79.6	58.8	137.0	92.0	0.660	
3	57.8	71.4	62.3	63.8	71.2	70.2	67.2	71.4	54.2	130.9	90.0	0.000	
4	61.2	74.6	75.1	70.3	73.8	73.2	63.5	72.2	55.1	106.9	81.0	0.350	
5	74.0	84.8	68.9	75.9	84.9	84.0	79.8	80.0	68.7	142.0	100.8	0.213	Thunder shower 7 P.M.
6	49.2	66.0			66.1	65.2	62.0	84.0	55.0	138.9	87.3	0.102	
7	60.3	61.9	57.0	59.7			(64.0)	(65.9)	(43.8)	135.0	81.9		
8	62.5	66.1	56.9	61.8	66.1	65.6	64.4	64.8	56.0	135.0	78.2	0.043	
9	46.5	64.4	54.0	55.0	64.6	63.6	61.2	66.7	45.7	(133.0)	(57.2)	0.000	
10	46.2	60.6	58.9	55.2	60.9	60.0	59.7	64.3	43.7	136.0	70.2	0.000	
11	57.2	65.0	54.8	59.0	65.0	64.2	61.7	61.8	56.2	125.5	78.0	0.000	
12	54.0	76.0	60.9	63.6	76.0	75.3	67.2	67.5	51.2	131.0	89.0	0.000	
13	57.2	76.1	66.3	66.5	76.6	75.8	66.4	75.9	53.8	137.8	89.0	0.000	
14	54.0	55.8	48.0	52.6			56.1	76.0	53.0	89.0	66.0	0.070	
15	42.5	59.6	49.0	50.4	59.5	58.9	52.8	56.7	40.9	130.0	75.0	0.602	
16	52.2		58.4				(60.2)	(60.3)	(45.9)			(0.010)	
17	57.3		52.0										
18	59.4		61.9										
19	64.5		63.9										
20	51.3	60.3	48.9	53.5	60.9	60.0	55.8	71.6	43.9	133.2	74.2	0.988	
21	45.7	58.8	50.1	51.5			54.9	60.1	40.9	(128.0)	(78.0)	0.000	
22	40.0	59.0	48.6	49.2	59.2	58.7	56.2	59.0	38.0	133.2	74.0	0.000	
23	48.8	61.7			61.8	60.9	56.2	59.3	43.0	90.5	65.0	0.000	y Rc. Rain beginning about 6½ P.M.
24	57.5	65.4			65.5	64.8	58.3	62.0	55.4	97.0	72.9	0.550	
25	49.3	60.2	56.3	55.3	60.7	59.9	59.0	65.4	46.7	131.6	72.7	(0.000)	
26	58.0	70.6	58.1	62.2	71.1	70.1	65.8	65.8	54.1	138.8	83.0	0.000	
27		75.8	66.4		76.0	75.0	65.2	70.7	48.2	138.5	87.6	0.000	
28	63.4	82.3	68.0	71.2			73.0	75.9	61.9	142.7	92.5		
29	67.5	76.2	71.9	71.9	75.9	75.0	71.8	82.0	62.4	130.3	85.1	0.000	
30	53.8	57.5	47.7	53.0	57.5	56.7	56.0	76.5	52.2	123.5	70.7	0.182	
Sums	1623.8	1758.6	1592.7	1338.1				1875.6	1390.7			3.218	
Means	56.0	67.6	59.0	60.8				69.47	51.51				

Rainfall for month 3.22 inches.

Mean temperature " " 60.8 Fahrenheit.
Maximum " " " 84.0 — " — ; Sept. 6.
Minimum " " " 38.0 — " — ; Sept. 22.
— " — (reduced to standard of No. 4) 38.7 — " —
Highest reading of solar thermometer 142.7 — " — ; Sept. 28.

Auroras noticed.

Sept. 21, about 7½ P.M. Faint auroral arch.
Sept. 22, about 8 P.M. Some aurora.

L. Trouvelot records auroras Sept. 14, 21, 26, 30.

Velocity of winds merely estimated in miles per hour: see notes in Record for 1872.

Observations, in parentheses ( ) were not made at the regular times. The actual times are given below.

Date	Regular times	Actual times
7	10 A.M.	4 P.M.
7	4 P.M.	5⅓ P.M.
16	10 A.M.	9⅞ A.M.
21	4 P.M.	4 5/12 P.M.
25	10 A.M.	10½ A.M.

The observations below were made at times when the cloth about the wet bulb of the psychrometer was apparently dry. See similar notes in Record for 1872 and later.

Date	Time	Dry bulb.	Wet bulb	No. 4
6	9¾ A.M.	62.6	61.1	61.5
10	9 5/12 A.M.	60.7	59.2	59.4
10	9¾ A.M.	61.0	59.5	59.8

From the comparisons between the wet and dry bulb thermometers this season, the following corrections have been adopted for the dry bulb to be applied to its reading before finding the relative humidity by Guyot's Tables; for readings of the dry bulb lower than 40°, the correction is −1.5; between 40 and 60, it is −1.3; between 60 and 70, it is −1.2; between 70 and 80, it is −0.9; above 80 it is −0.8.

These corrections have been used in determining the relative humidity since April 1873.

It is likely that the wet bulb never gets thoroughly dry except in hot weather, so that these corrections are not very accurate; but they are perhaps better than none.

* Reading of No. 4 at 4 P.M. September 16 suspected to be erroneous. It is likely to have been 57.6 instead of 59.6.

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October 1873. Meteorological Record of

10 A.M.

Date	Barometer	Attached Thermometer	Casella 32.35	Casella 12.530	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's Tables (see note)	Wind	Clouds
1	30.184	54.9	51.5	50.4	51.0	50.5	52.8	46.0	63	0 N	1 M Fm
2	30.234	55.4	55.8	55.0	55.0	55.0	56.4	46.6	47	2 NW	4 R R Rs
3	30.258	54.5	55.6	54.0	54.4	54.6	57.0	51.3	72	4 S	1 Rs R haze
4	30.267	57.0	54.1	53.2	54.2	53.2				2 N	10 Pm
5	29.815	62.1	65.9	65.0	66.1	65.1	*67.2	64.1	90	1 S	9 Pm
6	29.722	62.2	64.2	63.0	63.8	63.5	65.9	60.1	75	4 S	7 Pm R Rs Rm
7	29.512	59.4	51.6	50.4	50.8	50.7	52.5	50.0	91	7 N	10 Pm
8	29.800	52.4	50.0	49.0	49.7	49.0	50.9	44.6	64	10 N	10 Pm
9	30.196	54.0	50.5	49.7	49.9	49.4	51.1	42.7	51	16 N	0 Fm
10	30.240	48.9	52.8	51.7	52.0	51.6	53.5	45.2	54	8 NE	0
11	30.066	51.7	55.2	53.9	55.1	54.2	56.2	48.1	57	3 NW	0
12	29.760	58.0	55.5	54.8	55.9	54.8	56.7	51.7	76	0 NW	10 Pm
13	30.028	56.4	49.6	48.8	49.0	48.6	50.1	41.8	50	15 NW	0 M Fm
14	30.132	50.4	53.0	51.9	52.3	52.0	53.8	47.0	63	8 SW	4 haze Rs
15	30.523	53.8	53.8	52.8	53.2	52.8	54.6	46.3	55	5 NW	4 Pm Rs haze
16	30.390	58.4	56.9	55.6	56.5	55.9	58.3	53.9	81	7 SW	3 haze Rs
17	30.299	59.8	53.0	52.1	52.5	52.0	53.8	44.1	45	7 N	0
18	30.336	48.8	49.0	47.3	48.2	48.0	50.7	47.0	83	4 S	9 Pm Fm
19	30.128	64.2	62.9	61.9	62.9	62.1	64.1	60.9	89	1 S	10 Pm
20	29.730	63.0	64.4	63.4	64.4	63.4	65.6	62.0	86	8 SE	10 Pm
21	29.820	62.9	62.1	61.5	62.0	61.6	63.3	55.8	64	10 S	5 Pm Fm
22	30.149	57.0	55.0	54.0	54.1	54.0	56.1	48.8	62	7 SE	1 Fm haze
23	30.264	54.5	52.6	51.2	51.3	51.4	53.7	48.3	72	2 SW	0 haze
24	30.208	57.0	60.0	59.0	59.7	59.2	61.2	55.9	76	6 S	10 Pm Rm R R
25	30.231	55.3	49.7	49.0	49.1	48.7	50.4	40.8	42	7 NW	2 R Rs
26	30.213	48.6	44.6	43.7	43.8	43.7	45.3	†41.6	†80	0 NW	9 R Rs
27	29.552	56.0	60.0	59.0	59.8	59.2	61.0	58.4	91	25 S	10 Pm; raining
28	29.820	57.6	47.6	46.6	47.0	46.6	48.4	42.9	68	0 NW	9 R Pm Fm
29	29.931	49.0	41.0	40.0	40.1	40.3	41.7	35.2	54	6 SW	1 M Fm
30	(30.490)	(57.3)	(39.1)	(38.1)	(38.2)	(38.0)	(39.8)	(32.7)	(49)	(4 NE)	(0)
31	30.244	64.4	40.3	39.6	40.0	39.2	40.8	39.4	97	8 N	10 Pm; fine rain

4 P.M.

Date	Barometer	Attached Thermometer	Casella 32.35	Casella 12.530	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's Tables (see note)	Wind	Clouds
1	30.119	63.3	57.1	56.3	56.8		57.7	50.1	61	3 SE	2 M Fm
2	30.194	63.0	60.5	59.8	60.0		61.1	50.8	49	3 W	5 Pm Fm M
3	30.224	63.7	63.8	62.9	63.4		64.4	53.3	47	4 NW	5 Pm M Fm
4	30.156	61.5	62.0	61.5	62.3		63.0	56.3	67	6 S	10 Pm Fm
5	29.699	68.2	69.6	69.1	69.9		70.7	64.4	73	0 SW	7 M Pm
6	29.651	66.8	66.9	66.0	66.8		67.6	61.5	74	8 SW	10 Pm Fm M
7	29.606	57.8	49.6	48.8	49.4		50.2	48.5	97	3 N	10 Pm; raining
8	29.810	55.7	57.8	56.8	57.6		58.6	47.9	45	10 N	9 R R Rm Pm Fm
9	30.208	58.4	53.2	52.7	53.0		54.0	42.9	37	8 NE	0
10	30.206	57.5	56.7	56.0	56.2		57.3	42.4	21	7 NE	0
11	29.990	68.4	59.6	58.9	59.2		60.2	47.8	37	6 NE	0
12	29.700	63.2	63.4	63.3	63.9		64.1	56.2	63	0 SW	7 M R Rs
13	30.104	59.0	50.2	49.6	49.8		50.8	41.4	43	7 NW	0
14	30.143	60.1	63.9	62.9	63.4		64.6	57.8	70	7 W	1 haze
15	30.509	61.8	53.9	53.0	53.3		54.2	47.7	65	3 E	2 haze
16	30.180	64.9	64.8	64.0	64.6		65.4	56.1	58	15 SW	3 R R Rs haze
17	30.330	60.8	52.0	51.2	51.4		52.4	45.4	61	4 SE	0
18	30.244	65.2	56.4	55.6	56.1		57.4	50.8	67	3 E	9 Pm
19	30.028	67.6	63.7	62.4	63.6		64.3	60.9	87		
20	29.624	63.6	61.4	60.2	61.2		62.5	60.9	98	6 SE	10 Pm; fine rain
21	29.915	66.2	59.0	58.3	58.6		59.8	51.1	56	13 SW	0
22	(30.114)	(62.1)	(59.0)	(58.5)	(58.5)		(60.0)	(48.4)	(40)	(6 SW)	(1 M Fm)
23	30.214	63.5	62.9	62.3	62.5		63.8	54.2	54	7 S	0 haze
24	30.150	64.0	64.0	63.5	64.0		65.0	56.8	62	5 W	10 Pm
25	30.190	62.8	54.8	54.0	54.4		55.3	44.3	37	7 NW	1 R R M
26	30.100	58.1	‡51.5	48.9	49.0		51.1	46.2	74	1 SE	1 Rs
27	29.388	65.1	62.4	61.7	62.4		63.4	61.2	94	10 S	10 Pm; raining
28	29.730	57.6	49.0	48.0	48.3		49.4	43.6	67	5 NE	9 R Pm
29	30.099	55.7	43.6	42.9	43.0		44.0	36.3	47	6 W	2 M Fm
30	30.484	67.6	42.7	41.8	41.8		43.0	36.6	57	6 E	2 Pm R Fm Rs
31	30.070	69.4	45.9	45.0	45.5		46.7	44.9	96	6 NE	10 Pm

Sums of columns, number of observations, means and reduction of barometer to the freezing point.	10 A.M.	4 P.M.
Barometer	932.542	931.179
	31	31
	30.082	30.038
	−.074	−.093
	30.008	29.945
Attached Thermometer	1741.9	1942.6
	31	31
	56.2	62.7
Casella 32.35	1657.3	1781.3
	31	31
	53.5	57.5
Casella 12.530	1625.6	1755.9
	31	31
	52.4	56.6
No. 4	1642.0	1769.9
	31	31
	53.0	57.1
Minimum after setting	1628.3	
	31	
	52.5	
Dry bulb	1632.9	1802.0
	30	31
	54.4	58.1
	(By adding estimated for Oct. 4, mean 54.5)	
Relative humidity	2049	1904
	30	31
	68	61
Wind	187	175
	31	30
	6.0	5.8
Clouds	159	136
	31	30
	5.1	4.5

See note of this month on the state of the psychrometer

Rain gauge A, on roof of shed, north of Clock Room.

Date	Time	Ounces	Inches
6	10 A.M.	12 1/4	0.106
7	10 A.M.	135 3/8	1.171
7	4 P.M.	32	0.277
8	10 A.M.	47 1/4	0.408
20	10 A.M.	52 1/4	0.450
21	10 A.M.	98 1/2	0.849
27	10 A.M.	30 3/4	0.265
27	4 P.M.	21 1/4	0.183
28	10 A.M.	46 3/4	0.403
31	10 A.M.	4	0.034
Total		478 3/8	4.129

Gauge A tested Oct. 8, by pouring water into it, and found to be somewhat leaky. The leak seems to be of such a kind that in light rains water from the outside of the funnel runs down the pipe into the bottle, and in heavy rains water from the inside of the funnel drips off the pipe without reaching the bottle; so that the gauge sometimes catches too much and sometimes too little.

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Harvard College Observatory. October 1873.

Date	External Thermometer No. 4 7 A.M.	2 P.M.	9 P.M.	Mean	2 P.M. Casella 3235	Casella 12530	Maximum after setting	Extreme temperatures Maximum set at 10 A.M.	Minimum set at 10 A.M.	Maximum solar thermometer set at 4 P.M.	Solar thermometer after setting	Rainfall in inches Gauge C Sundined at 10 A.M.	Remarks.
1	39.0	58.0	49.1	48.7	58.4	57.7	51.7	57.0	37.3	122.7	65.7	0.000	Rrl
2	42.0	60.1	51.4	51.2	60.7	60.0	55.5	58.4	44.0	126.3	70.0	0.000	Rrl
3	42.8	(63.9)	57.5	52.7	(64.2)	(63.2)	55.3	60.6	40.0	129.0	70.7	0.000	Rr Sw
4	50.3	64.1	56.5	57.0	64.0	63.6	54.0	63.8	43.8	120.7	64.0	0.000	y Rc
5		68.9	58.9				64.9	65.1	53.0	131.5	76.9	0.055	yw Some showers.
6	52.5	69.0			68.9	68.2	63.4	70.0	51.1	129.2	68.4	0.025	yw Thunder in the evening.
7	50.3	49.9			50.0	49.2	51.6	71.1	48.4	68.4	51.2	1.282	yl Rain previous night and much of the day.
8	42.5	56.1	54.9	53.2	56.4	55.3	49.4	51.6	42.6	83.6	62.2	0.700	yl
9	45.8	53.4	43.3	47.5	53.9	53.0	50.5	57.9	44.7	122.0	66.5	0.000	rl
10	38.7	57.8			58.1	57.2	52.2	53.2	37.8	129.0	66.3	0.000	rl
11	39.3	60.8	44.2	48.1	60.9	60.2	54.2	57.4	36.5	130.3	71.2	0.000	r Sw
12	48.0	63.2	52.2	54.5			56.1	60.9	44.0	130.1	66.1	0.002	y rw< A 10 y< A 1̄
13	46.2	51.4	40.0	45.9	51.8	51.0	49.6	64.3	45.4	119.2	62.6	0.000	rl
14	43.8	63.4	54.6	53.9	63.8	63.0	52.2	52.2	35.2	118.6	71.2	0.000	yc rw< A 9
15	47.5	55.9	45.7	49.7	56.2	55.3	53.6	63.6	42.4	122.8	61.8	0.000	Rrw
16	50.5	65.9	58.0	58.1	66.2	65.4	56.3	57.6	38.2	120.9	71.4	0.000	fc rw A 9 / y< A 3̄.
17	48.7	55.1	43.9	49.2	55.8	55.0	53.2	65.7	47.7	130.0	59.8	0.000	rl
18	33.0	54.7	52.9	46.9	55.0	54.0	49.0	57.9	31.1	128.8	57.9	0.000	Morning misty and chilly. rw< y< N.
19	57.5	68.0	58.3	61.3			62.9	61.0	48.0	120.1	63.9	0.000	rw Rain began 3¾ P.M. Morning misty.
20	62.8	60.8	63.8	62.5	61.0	60.4	63.6	69.8	56.7	76.5	63.0	0.406	Rain last night and at intervals this day.
21	58.2	62.4	49.9	56.8	62.7	62.0	60.3	66.2	57.4	124.0	65.5	0.943	y> rw
22	44.0	61.0	48.1	51.0	61.0	60.7	55.0	62.7	43.8	(128.8)	(62.8)	0.000	r Rw
23	40.2	62.9	51.9	51.7	62.9	62.0	52.2	61.3	39.8	128.6	69.7	0.000	rwz
24	49.0	65.8	(55.7)	56.8	66.0	65.0	59.2	62.8	47.8	123.2	64.8	0.000	yw
25	42.5	54.0	43.1	46.5	54.8	53.9	49.8	65.3	41.1	121.7	59.0	0.000	rl
26	45.5	51.3	46.1	47.6			47.0	55.0	32.5	117.1	59.9	0.000	rl n→B 5̄ y<
27	44.3	60.9	50.8	52.0	61.0	60.1	58.8	59.2	43.5	66.5	63.0	0.250	yawn nt 6̄. Rain at times till about 7 P.M.
28	40.8	(49.2)	42.1	44.0	49.8	48.9	47.8	62.0	46.6	89.7	48.7	0.590	y Rc y> U
29	40.0	43.4	38.6	40.7	44.0	43.2	41.4	50.3	35.7	110.5	47.5	0.000	rl Sy Rl Qc
30	33.0	42.2	41.1	38.8	42.9	42.0	(39.4)	(43.6)	(28.7)	111.9	46.8	(0.000)	rl Ground stiffened with frost this morning.
31	42.7	45.0			45.3	44.5	41.0	45.0	38.0	47.0	47.0	0.030	yc Some rain early; very slight rain after 10 A.M.
Sums	1361.4	1798.5	1346.6	1326.3				1852.5	1322.8			4.283	Rainfall for month 4.28 inches.
Means	45.4	58.0	49.9	51.0				59.76	42.67				Mean temperature " " 51.0 Fahrenheit

Maximum " " " 71.1 " ; Oct. 7
Minimum " " " 28.7 " ; Oct. 30
" (reduced to standard of No. 4) 29.2 "
Highest reading of solar thermometer 131.5 " ; Oct. 5

Velocity of wind merely estimated in miles per hour; see notes in record for 1872.

Observations in parentheses ( ) were not made at the regular times. The actual times are given below.

Date	Regular times	Actual times
3	2 P.M.	2⅓ P.M.
22	4 P.M.	4¼ P.M.
24	9 P.M.	10 P.M.
26	2 P.M.	2⅓ P.M.
30	10 A.M.	10¼ A.M.

The observations below were made at times when the cloth about the wet bulb of the psychrometer was apparently dry. See similar notes in the record for 1872 and later.

Date	Time	Dry bulb	Wet bulb	No. 4
1	9 A.M.	48.3	46.8	46.7
1	9⅔ A.M.	52.0	50.6	50.2
9	9⅓ A.M.	50.4	49.0	49.2
9	9¾ A.M.	51.0	49.5	49.8
10	9½ A.M.	51.4	49.8	50.0
10	9⅔ A.M.	52.8	51.2	51.0
13	9⅙ A.M.	49.3	47.8	48.0
13	9⅚ A.M.	50.1	48.7	48.9
15	9½ A.M.	53.2	52.0	52.0
15	9¾ A.M.	53.8	52.4	52.5
17	9⅚ A.M.	52.6	51.0	51.3
30	9 1/12 A.M.	37.8	36.3	36.4
Sums		602.7	585.1	586.0
Means		50.22	48.76	48.83

These observations indicate a correction of −1.4 to be applied to the reading of the dry bulb before the deduction of the relative humidity by means of Guyot's Tables. But taking also into account the results obtained in March and April, 1873, there seems to be no reason for altering the corrections adopted in September 1873.

Accordingly, the relative humidity for this month has been determined in the same manner, as for last month. See note of September, 1873.

* Reading of dry bulb October 5 at 10 A.M. in original record is 57.2, undoubtedly by mistake for 67.2.

† Reading of psychrometer at 10 A.M. October 26 gives a larger relative humidity than seems likely from the general character of the weather. Perhaps the wet bulb reading should be 36.6; or the instrument may have been read too soon after wetting.

‡ Reading of Casella 3235 at 4 P.M. October 26 very high compared with the other thermometers. Probably it should be 50.5 instead of 51.5.

Note on gauge A continued.

The funnel was also found on Oct. 8 to be somewhat battered, probably by boys climbing on the roof of the shed. The rim of the funnel was therefore corrected with pincers, and made everywhere 16 inches across as nearly as practicable. This will make the area exposed to rainfall 201.06 square inches, and the divisor of the number of ounces of water caught 116.022.

Log. 116.022 = 2.064454 ; ar. co. 7.93546.

Auroras noticed.

Oct. 22, about 10 P.M. Some auroral streamers.

Dr. Trowbridge records auroras Oct. 1 (doubtful), 9, 11, 23, 29.

Meteors

Two meteors seen at 7h 27m P.M. from corner of Garden Street and North Avenue, Cambridge. Second meteor about as bright as a 2.5 magnitude star; (little or no train). First seen about the head of Ursa Major; crossed the line joining ε and ζ Ulrs. Maj. about 3 times as far from ε as from ζ; thence moved nearly parallel with the line joining ζ and η Ulrs. Maj.; but did not pass as near to η as to ζ; disappeared soon after passing the point of its course nearest η Ulrs. Maj. (Oct. 25 according to record book P10)

Observers as in June, 1873.

1872phae.proj..3825

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November 1873. Meteorological Record of

10 A.M.

Date	Barometer	Attached Thermometer	Casella 3235	Casella 12530	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's Tables	Wind	Clouds
1	30.105	54.5	41.4	40.7	40.6	40.4	42.0	35.0	51	7 W	0
2	30.422	61.1	41.7	40.2	40.3	40.4	42.4	37.3	67	0 SE	1 Rs
3	29.869	67.6	55.6	54.7	54.9	54.7	56.3	47.0	50	10 SW	1 Rr M Fm
4	30.244	63.0	37.0	36.0	36.0	36.1	38.0	31.8	55	6 S	0
5	30.074	62.0	46.0	44.6	44.7	45.0	46.9	41.0	64	8 SW	3 Rm Rr haze
6	30.338	57.0	35.9	35.0	35.2	35.0	36.6	30.3	56	6 N	9 Rm Fm
7	30.450	56.1	33.1	31.9	31.8	32.2	34.1	30.2	76	0 N	2 Rr Rs Fm
8	29.512	63.9	*46.4	45.6	46.0	45.3	47.0	45.6	99	13 NE	10 Rm; raining
9	29.708	66.9	47.1	46.3	46.8	46.1	47.9	40.9	57	5 W	9 M
10	29.906	62.8	31.3	30.7	31.0	30.4	32.0	25.9	51	14 NW	10 Rm
11	30.069	63.1	30.8	30.0	30.0	29.8	31.2	25.8	58	10 NW	0
12	29.567	64.8	46.1	45.2	45.8	45.2	47.0	45.3	97	3 SE	10 Rm
13	29.501	67.0	33.7	33.0	33.0	32.8	34.5	30.0	70	10 NW	5 M Fm
14	29.968	63.2	25.6	24.7	24.9	24.5	26.2	21.8	63	7 NW	9 Rm
15	30.015	56.5	28.0	27.3	27.4	27.1	28.7	23.6	58	6 SW	5 Rm Rr Fm
16	29.602	61.9	31.1	30.1	30.6	30.4	32.0	30.0	95	0 N	10 Rr; a little snow
17	29.592	58.0	27.9	27.2	27.7	27.0	28.8	27.0	96	13 N	10 Rr; a little sleet
18	§28.717	67.1	32.1	31.4	31.7	31.2	33.4	31.9	100	12 NE	10 Rm; raining
19	29.514	58.0	29.9	28.6	29.0	29.0	30.6	26.5	71	6 W	0 Rm Fm Rs
20	29.876	60.8	24.0	23.0	23.5	23.0	24.8	21.6	77	8 NW	10 Rm Rr
21	30.276	62.0	25.5	24.3	24.5	24.4	26.4	22.4	68	4 SW	3 Rr Rs
22	30.291	53.4	30.8	29.8	30.0	30.0	31.6	29.0	**71	2 SW	1 haze
23	30.437	55.2	27.6	27.8	28.0	27.7	††29.7	††31.3		0 W	9 Rs
24	29.794	58.8	37.2	36.7	37.0	36.2	37.9	36.5	100	10 E	10 Rm; raining
25	29.280	63.4	29.9	29.4	29.7	29.1	30.9	28.4	89	0 NW	10 Rr
26	29.691	57.9	19.7	19.0	19.2	18.6	20.6	17.0	68	13 NW	0 Rr Rs
27	29.977	45.5	16.9	16.2	16.4	16.0	17.7	15.0	80	2 SW	10 Rr
28	30.050	49.8	23.8	22.9	23.0	22.7	24.6	21.0	72	8 NW	1 Rr Rm
29	30.374	45.0	26.0	25.0	25.1	25.2	26.9	22.8	68	6 W	8 Rm Fm
30	30.523	50.5	23.6	22.8	22.9	22.9	24.4	20.3	65	1 NW	2 Rs

4 P.M.

Date	Barometer	Attached Thermometer	Casella 3235	Casella 12530	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's Tables	Wind	Clouds
1	30.216	65.4	42.9	42.0	42.3		43.3	34.9	80	11 NW	1 M Fm
2	30.251	69.3	50.7	50.0	50.3		51.3	42.2	46	5 SE	2 Rr Rs
3	29.991	69.2	48.5	47.8	48.0		49.0	38.0	31	25 W	0 Rm M Fm
4	30.082	67.8	47.6	46.9	46.9		48.0	38.7	40	7 SW	0
5	30.200	69.5	42.3	41.6	41.8		42.8	33.9	37	8 N	0
6	30.336	64.3	39.7	38.9	39.0		39.9	33.9	59	5 NE	5 M Fm
7	30.340	61.7	43.0	42.2	42.4		43.5	38.5	68	4 SE	10 Rm Fm
8	29.519	66.3	*45.8	45.7	46.0		47.2	43.2	79	7 W	10 Rm
9	29.728	66.7	46.0	46.9	46.4		47.7	40.7	57	0 W	8 M Rm
10	29.884	61.2	34.0	33.7	33.6		34.6	28.0	50	11 NW	3 Rm Fm
11	30.069	68.6	36.8	36.1	36.0		37.2	31.8	63	6 SW	0 Fm
12	29.536	70.2	42.1	41.6	42.0		43.0	40.0	86	3 W	10 Rm
13	29.651	67.0	34.7	34.0	34.2		35.1	31.8	82	10 W	4 M Fm
14	29.998	61.3	26.3	25.8	25.8		27.0	21.4	50	6 NW	8 Rm Fm
15	29.882	69.6	33.0	32.7	32.8		33.4	28.3	63	4 SW	10 Rm M Fm
16	29.466	68.3	30.3	30.3	30.3		30.9	32.0	100		10 Rr; snowing hard
17	29.484	64.4	33.7	33.0	33.2		34.4	32.0	90	10 NE	10 Rm Rr
18	§28.814	60.7	§31.1	§31.9	§30.6		32.0	30.7	100	13 SW	10 Rr; snowing
19	29.552	65.0	32.6	31.3	31.9		33.0	27.3	57	5 N	5 Rr Rm Fm
20	29.918	62.4	30.0	29.0	29.4		30.7	26.8	73	3 N	10 Rr
21	30.216	58.8	32.2	31.8	31.8		32.7	30.0	87	1 SW	10 Rr Rm Fm
22	30.326	68.0	37.0	35.9	36.0		37.5	31.9	60	0 NW	1 haze M
23	30.379	64.3	35.0	34.4	34.3		35.5	30.5	66	0 SW	9 Rr Rs
24	29.310	62.0	40.2	39.6	40.0		41.0	39.6	100	12 N	10 Rm
25	29.278	62.0	27.3	26.8	27.3		28.5	25.5	82	9 NW	10 Rr; a little snow
26	29.726	58.5	18.0	17.6	17.6		19.0	14.9	58	13 NW	0
27	29.824	62.5	18.0	17.7	17.8		18.9	17.3	98	4 NE	10 Rr; snowing
28	30.119	55.5	22.3	22.0	22.0		23.0	19.1	66	7 NW	9 Rr Rs
29	30.444	61.5	27.7	27.0	27.1		28.2	23.0	56	6 W	1 Rm Fm
30	30.550	65.2	23.0	22.7	22.6					1 N	2 Rs R

Sums of columns, number of observations, means, and reduction of the barometer to the freezing point:

	10 A.M.	4 P.M.
Barometer	897.832 30 29.928 −.074 29.854	897.089 30 29.903 −.096 29.807
Attached thermometer	1766.8 30 58.9	1937.2 30 64.6
Casella 3235	985.7 30 32.9	1051.8 30 35.1
Casella 12530	960.1 30 32.0	1036.9 30 34.6
No. 4	966.7 30 32.2	1039.4 30 34.6
Minimum after setting	958.4 30 31.9	
Dry bulb	1011.1 30 33.7	1048.3 29 36.1 (Rm added from 30, 35)
Relative humidity	2092 29 72	1984 29 68
Wind	190 30 6.3	196 29 6.8
Clouds	168 30 5.6	178 30 5.9

Rain gauge A on roof of shed north of Clock Room

Date	Time	Ounces	Inches
8	4 P.M.	169½	1.461
10	10 A.M.	2½	0.022
12	10 A.M.	40¾	0.351
Total		212¾	1.834

Gauge A emptied only in the afternoon of Nov. 24; contents not measured, as the gauge is not adapted to falls of snow and leaks besides.

Nov. 17, 10 A.M. Snow about 2 inches deep; lower part caked together. A piece of this snow 2 inches long and 1½ inches in diameter weighs 2 ounces (mean of 3 measures.) Hence rainfall 0.418 inches; result not accurate, but preferable to the first one (0.240 inches.) See note added to original record.

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Harvard College Observatory. November 1873.

Date	External Thermometer No. 4 7 A.M.	2 P.M.	9 P.M.	Mean	2 P.M. Casella 3235	Casella 12530	Maximum after setting	Extreme temperatures Maximum set at 10 A.M.	Minimum set at 10 A.M.	Maximum solar thermometer set at 4 P.M.	Solar thermometer after setting	Rainfall in inches. Gauge C Determined at 10 A.M.	Remarks
1	42.3	45.7	36.6	41.5	46.3	45.5	43.2	45.2	39.3	112.4	48.0	0.000	
2	29.3		44.0				42.0	45.7	28.5	117.8	56.2	0.010	
3	48.0	52.2	31.9	44.0	52.8	52.0	54.8	54.8	40.2	112.7	53.0	0.000	rlv
4	26.2	47.1	41.0	38.1	48.0	46.9	37.6	55.2	25.7	112.6	52.6	0.000	rl
5	40.2	45.0	30.8	38.7	45.2	44.7	45.8	47.7	36.0	112.7	46.0	0.000	rl
6	28.5	40.6	30.3	33.1	40.8	40.2	35.9	49.8	27.8	118.8	45.2	0.000	ryc
7	29.4	42.6			43.1	42.2	33.0	41.0	22.2	100.2	43.3	0.000	yc Rain beginning about 10 P.M.
8	44.0	44.6	42.3	43.6	*44.5	44.0	46.0	46.2	32.1	81.5	46.8	1.430	yc Rain stopped about noon
9	42.0	48.1	41.0	43.7			47.0	47.8	41.5	113.0	46.8	0.031	Ryc Light shower about 9½ P.M.
10	29.8	34.4	26.8	30.3	35.0	34.1	33.0	48.2	29.3	87.2	36.0	0.026	yd {A few snow flakes early; snow after 10 A.M.} y < X.
11	23.0	36.3	28.9	29.4	37.0	36.3	31.4	34.3	22.9	108.8	42.9	0.000	rd
12	38.5	42.2	38.4	39.7	42.4	41.7	45.0	45.2	28.1	102.3	42.1	†0.034	yc Rain and snow previous night.
13	30.3	36.1	27.4	31.3	36.8	36.0	34.4	48.0	30.3	115.0	38.0	0.080	Shower previous night. Rrl.
14	18.7	26.0			26.5	25.8	26.5	36.6	18.6	98.0	29.0	0.000	yd A few snow flakes.
15	18.8	33.4	(28.3)	26.8	33.8	33.0	28.0	27.5	17.3	113.1	33.2	0.000	Rrl y < A 10
16		(33.3)	24.9				34.0	34.7	25.3	34.0	32.0	0.000	yc {Snowing hard at 10¾ A.M.; snow changed to rain 2 P.M.; afterwards changed back to snow.}
17	25.0	31.6	37.3	31.3	32.0	31.1	28.9	34.5	23.4	35.7	32.8	‡0.418	yc
18	30.5	33.1	27.2	30.3	33.7	32.1	32.0	38.6	27.0	44.9	32.7	1.250	yc {Rain and high wind previous night; some rain this morning; a very little snow after noon; barometer low.}
19	25.0	33.0	27.5	28.5	33.7	‖31.7	29.7	32.2	23.2	98.3	30.9	0.270	Ryd
20	23.2	28.8	26.6	26.2	29.0	28.0	24.4	32.6	21.6	46.8	30.1	0.000	yd A little snow in the evening.
21	17.2	31.4			31.6	30.8	26.0	29.2	17.0	101.0	31.0	0.015	rl y < A 10
22	28.5	36.8	28.3	31.2	37.5	36.1	30.7	31.8	24.4	102.0	41.0	0.000	Rrl z
23	20.5	38.1	30.6	29.7			30.0	††32.0	19.9	94.0	31.7	0.000	Ryc
24	30.5	42.0	29.0	33.8			36.8	37.9	27.8	45.5	40.5	‡‡0.410	Snow early; then rain; little rain after 2 P.M.; yc
25	30.2	29.8	22.9	27.6	29.8	29.0	30.0	42.0	28.0	44.0	27.8	0.835	{A few snow flakes early; snowing rather thick at 10½ A.M.; snow continuing at noon with clearing; at 9 P.M.; very little snow altogether.}
26	18.8	19.5	(12.9)	17.1	20.0	19.2	20.9	31.4	17.9	90.4	26.1	0.025	rd
27	14.8	18.8	17.7	17.1	19.0	18.8	18.0	21.2	10.6	26.0	20.0	0.000	yd. Some snow after noon; a few flakes early.
28	19.5	25.8			26.0	25.4	24.0	24.6	14.2	100.5	24.5	0.060	Ryd
29	14.3	29.5	20.8	21.5	29.8	29.2	26.0	26.3	11.4	101.5	31.9	0.000	Ryd
30	20.2	25.9	13.1	19.7			24.7	29.9	15.4	94.0	28.6	0.000	Rrd
Sums	807.2	1031.7	766.5	754.2				115.61	747.2			4.894	
Means	27.8	35.6	29.5	31.4				38.54	24.91				

Rainfall for month 4.89 inches

Mean temperature " " " 31.4 Fahrenheit

Maximum " " " 55.2 " ; Nov. 4

Minimum " " " 10.6 " ; Nov. 27

— " — (reduced to standard of No. 4) 10.9 "

Highest reading of solar thermometer 118.8 " ; Nov. 6

Velocity of wind merely estimated in miles per hour; see notes in Record for 1872.

Observations in parentheses ( ) were not made at the regular times. The actual times are given below.

Date	Regular times	Actual times.
15	9 P.M.	9⅔ P.M.
16	2 P.M.	3 P.M.
26	9 P.M.	9¾ P.M.

The observations below were made at times when the cloth about the wet bulb of the psychrometer was apparently dry. See similar notes in the record for 1872 and later.

Date	Time	Dry bulb	Wet bulb	No. 4
13	9½ A.M.	34.0	32.5	32.5
14	9 5/12 A.M.	25.2	23.7	23.7
20	9 7/12 A.M.	23.6	22.2	22.4
26	9 5/12 A.M.	20.4	19.0	
27	9½ A.M.	17.3	16.0	16.5

The relative humidity for November 1873, has been computed according to the corrections given in the Record for September 1873.

Auroras noticed.

None this month.

L. Trowbot records auroras Nov. 1, 19, 22, (the last doubtful,) and 26.

§ Barometer readings Nov. 18, 1873.

Barometer Newman 57 Time	Barometer	Attached Thermometer	Barometer Newman 68 Time	Barometer	Attached Thermometer
10 A.M.	28.717	67.1	10 1/12 A.M.	28.630	35.8
10 1/12 A.M.	28.700	66.6	10 1/12 A.M.	28.612	36.1
10 5/12 A.M.	28.698	65.8	11 7/12 A.M.	28.588	36.3
11 1/60 A.M.	28.653	63.1	11 25/60 A.M.	28.574	36.8
11 35/60 A.M.	28.640	62.3	12 1/60 P.M.	28.564	37.0
12 25/60 P.M.	28.630	61.8	12 1/3 P.M.	28.585	37.0
12 41/60 P.M.	28.654	61.7			
2 1/60 P.M.	28.700	63.5			
4 1/60 P.M.	28.814	60.7			
6 13/60 P.M.	28.952	60.0			

Wind strong previous night; moderate this morning; light at noon; shifted from S.E. to N.W. between noon and 12⅓ P.M.; gradually increased after noon, shifting through W. to S.W.; diminished after 4 P.M.

Barometer Newman 57 is in the Clock Room, cistern 2½ feet from the floor; barometer Newman 68 on the same level in the Circle Room; these barometers were compared in 1873 and found not to differ materially.

Observers as in June 1873.

* Nov. 8. Bulb of Casella 3235 more or less wet all day.

† Gauge C damaged in the night preceding Nov. 12 by a wagon driven against it; repaired Nov. 12 with pincers and file so as to make the rim of the funnel very nearly 5 inches across, as before, as nearly as might be.

‡ Rainfall determined Nov. 17 by measuring and weighing snow as stated of points.

§ Nov. 18. Unusual readings of thermometers, at 4 P.M., relatively to each other noticed and verified. Temperature probably falling and Casella 12530 less sensitive than 3235, Barometer low all day; see record.

‖ Nov. 19, 2 P.M. Low reading of Casella 12530 noticed and verified.

** Nov. 22. At 10 5/12 A.M. dry bulb 32.0; wet 27.8; relative humidity with the usual correction 71; this is entered for the relative humidity at 10 A.M., at which time the wet bulb had not settled although wetted half an hour before.

†† Nov. 23, 10 A.M. Wet bulb evidently not wetted long enough before observation and maximum read wrongly; perhaps it should be 37.0

‡‡ Snow early, then rain; rainfall by gauge C probably too small, but no means of correcting it.

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December 1873. Meteorological Record of

10 A.M.

Date	Barometer	Attached Thermometer	Casella 3235	Casella 12530	No. 4	Minimum after setting	Psychrometer Dry bulb	Wet bulb	Relative humidity Guyot's Tables	Wind	Clouds
1	30.714	42.3	8.4	7.9	8.0	7.5	cannot	be read		7 N	10 R
2	30.752	55.4	14.8	14.4	14.4	14.0	15.8	14.0	95	6 N	10 R; a little snow
3	30.399	59.9	*29.7	*28.9	*29.5	*28.9	*30.3	29.1	100	0 SW	10 R
4	29.892	69.8	58.0	57.6	58.2	57.0	58.3	55.0	87	20 S	10 Rm Fm
5	30.291	65.3	38.0	37.1	37.3	37.1	38.5	30.8	45	7 W	9 R Rs
6	30.459	57.7	30.0	29.0	29.4	29.0	30.7	26.2	67	5 N	10 Rm
7	30.627	57.8	25.2	24.7	24.6	24.7	26.2	22.1	67	1 NW	0
8	30.716	60.4	24.6	23.5	23.7	23.4	25.4	22.2	77	3 N	9 R; thin
9	30.004	62.1	43.8	43.1	43.6	42.8	44.4	42.0	91	6 SW	10 Rm; raining
10	30.168	63.7	38.8	38.0	38.3	37.9	39.4	32.7	52	7 NW	9 Rm Fm
11	30.250	58.9	29.8	29.0	29.2	29.0	30.5	25.6	62	4 S	10 R Rs Rm
12	29.790	61.0	39.7	38.8	39.0	38.5	40.2	38.8	99	1 S	10 Rm; raining
13	29.676	57.3	39.0	38.0	38.6	38.1	40.1	38.7	99	4 NE	10 Rm; raining
14	29.820	58.4	26.4	25.3	26.1	26.4	27.9	23.8	69	15 W	0 haze
15	30.208	57.5	33.2	31.9	32.8	32.2	33.9	31.2	87	5 N	6 Rm Fm
16	30.335	59.4	37.3	36.1	36.4	36.2	38.3	35.5	87	5 SW	9 R Rs
17	30.220	62.8	34.6	33.9	34.1	33.4	35.3	33.4	96	4 SW	10 Rm; fog
18	30.080	62.1	33.6	32.2	32.6	32.3	34.4	32.0	90	4 SW	9 R Rm
19	30.027	64.2	34.9	33.9	34.2	34.0	35.8	33.3	90	3 N	10 Rm
20	29.819	51.4	34.7	33.9	33.8	33.6	35.4	31.6	77	5 NW	10 Rm
21	30.333	47.0	17.6	16.8	16.8	16.4	18.0	14.2	61	1 NW	1 Rs
22	30.468	51.8	22.3	21.7	21.6	21.5	23.2	20.5	83	5 SW	3 R Rs
23	30.467	53.3	19.8	18.9	19.0	18.7	20.7	18.8	94	4 N	10 R
24	30.142	56.9	26.2	25.4	25.6	25.3	27.1	23.2	70	6 N	0 R Rs
25	30.102	57.6	33.9	33.3	33.4	33.0	34.7	30.3	71	3 W	10 Rm
26	29.900	52.9	29.1	28.6	28.7	28.2	29.9	27.0	84	6 N	10 R; snowing
27	29.810	57.4	23.8	22.8	23.1	22.5	24.5	22.1	87	6 N	10 R
28	(29.200)	(52.0)	(28.7)	(27.7)	(28.4)	(27.6)	(29.5)	(28.1)	(80)	(0 W)	(10 R; snowing)
29	29.816	56.0	27.0	25.8	26.3	25.8	28.0	25.4	86	3 S	10 R Rm; thin
30	29.858	56.2	22.1	21.5	21.5	21.2	23.0	19.3	68	5 W	0 Rs
31	30.208	50.2	25.8	25.0	25.0	25.0	26.4	22.6	71	14 SW	0 Rs

4 P.M.

Date	Barometer	Attached Thermometer	Casella 3235	Casella 12530	No. 4	Minimum after setting	Psychrometer Dry bulb	Wet bulb	Relative humidity Guyot's Tables	Wind	Clouds
1	30.720	57.9	12.0	11.8	11.6		cannot	be read		7 N	1 R Rm Rs
2	30.616	51.3	18.4	17.8	18.0		19.3	18.1	100	6 N	10 R; snowing
3	30.258	65.2	43.2	42.8	43.1		43.5	44.2	93	5 S	10 Rm R Fm
4	29.749	69.3	60.7	59.8	60.4		61.8	58.1	85	20 SW	10 Rm Fm
5	30.348	70.3	35.1	34.8	34.7		35.7	28.9	50.	7 W	10 R
6	30.470	64.1	33.6	32.9	33.0		34.0	27.4	49	5 N	7 Rm Fm Rm Rs R
7	30.610	64.9	29.7	28.9	28.9		30.1	23.3	41	1 N	0
8	30.620	64.8	34.5	33.8	33.9		35.0	31.8	82	1 N	10 R Fm
9	29.856	62.7	47.2	46.4	46.7		48.2	45.0	85	6 W	10 Rm Fm
10	30.235	69.5	35.1	34.8	34.7		35.8	28.3	44	8 N	0
11	29.978	56.7	33.7	32.9	33.1		34.2	32.0	92	5 S	10 Rm Fm; a little snow
12	29.708	58.2	41.0	40.2	40.6		41.8	40.1	96	0 calm	10 Rm
13	29.413	61.3	40.8	40.0	40.5		41.7	40.4	100	5 NE	10 Rm; raining
14	29.866	39.6	31.7	30.1	31.3		33.3	31.4	96	10 W	3 Rm Fm R
15	30.278	62.6	33.2	32.8	32.8		33.9	29.0	66	6 N	0 Rm Rs
16	30.272	66.1	42.9	42.1	42.2		43.4	38.1	66	5 SW	7 R Rs
17	30.144	68.0	40.9	40.3	40.3		41.4	38.1	82	1 SW	4 R Rs haze
18	30.000	66.0	41.7	40.8	40.7		42.3	38.4	77	0 calm	9 Rm Fm
19	29.883	61.0	38.1	37.5	37.6		38.9	37.1	97	6 SE	10 Rm; raining
20	29.896	56.3	35.2	34.7	34.5		35.8	30.7	66	5 NW	0 Rm Fm
21	30.350	62.2	23.9	23.2	23.1		24.9	20.0	55	1 W	1 Rs
22	30.465	66.3	28.9	28.2	28.3		29.5	24.8	63	5 NW	0
23	30.370	65.0	30.0	29.3	29.4		30.9	26.7	70	3 N	10 R
24	30.108	64.6	35.7	35.0	35.1		36.2	29.8	54	4 NW	0 Rs
25	30.098	61.5	34.3	33.7	33.7		35.0	29.5	61	5 N	10 Rm
26	29.650	56.5	30.8	30.0	30.4		31.4	§32.0	100	1 NE	10 R; snowing
27	29.792	62.8	26.5	25.8	26.0		27.1	25.6	100	6 NE	10 R " snowing
28	29.490	56.4	30.6	29.7	29.8		31.4	27.6	75	5 W	9 Rm R
29	29.628	57.0	33.5	32.3	32.7		34.0	29.0	65	8 SW	10 R
30	29.962	53.0	15.6	15.1	15.0		16.0	13.0	73	10 NW	0 Fm
31	30.283	62.0	30.9	30.2	30.4		31.4	26.3	61	8 SW	7 R R Rs

Sums of columns, number of observations, means, and reduction of the barometer to the freezing point.

	10 A.M.	4 P.M.
Barometer	934.551 31 30.147 −.077 30.070	933.114 31 30.100 −.088 30.012
Attached Thermometer	1777.7 31 57.3	1903.1 31 61.4
Casella 3235	930.8 31 30.0	1049.4 31 33.9
Casella 12530	904.7 31 29.2	1027.7 31 33.2
No. 4	913.2 31 29.5	1032.5 31 33.3
Minimum after setting	901.2 31 29.1	
Dry bulb	945.8 30 31.5 Or adding estimate for Dec. 1, mean 30.8	1057.9 30 35.3 Or adding estimate for Dec. 1, mean 34.5
Relative humidity	2412 30 80	2244 30 75
Wind	165 31 5.3	165 31 5.3
Clouds	235 31 7.6	198 31 6.4

Rain gauge A not used this month; emptied at Dec. 20, 10 A.M.

Notes on falls of snow.

Dec. 2. A little snow previous night; not enough for measurement.

Dec. 3, 10 A.M. Snow 1½ inches deep. 10 inches in cylinder 1⅞ inches in diameter weigh 2½ ounces. Hence rainfall 0.275 inches; to be preferred to 0.157 inches given in report. Dec. 6. Snow ceased at 10 A.M. to 4 P.M.; snow melting; at 4 P.M. snowing thicker; ground beginning to be whitened. At 4 P.M. gauge C 1⅔ ounces; 0.143 inches.

Dec. 27, 10 A.M. Snow stopped during previous night; much drifted; seems to average 4 inches deep. 10 inches in cylinder 1⅞ inches in diameter weigh 2⅔ ounces; hence rainfall 0.534 inches; to which should be added 0.143 inches from gauge C at 4 P.M. Dec. 26 before the snow had begun to collect on the ground; hence in all 0.677 inches. Gauge C gives 2⅔ ounces; 0.243 inches, but the result by measurement is preferable. Snow Dec. 27 and now later.

Dec. 28 11 A.M. New snow estimated about 10 inches deep; total depth of snow not much over 12 inches, but old snow no doubt settled considerably. 10 inches of new snow in cylinder 1⅞ inches in diameter weigh 2 ounces; hence rainfall 0.255 inches.

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Harvard College Observatory. December 1873.

Date	External Thermometer No. 4 7 A.M.	2 P.M.	9 P.M.	Mean	2 P.M. Casella 3235	Casella 12530	Maximum after setting	Extreme temperatures. Maximum set at 10 A.M.	Minimum set at 4 P.M.	Maximum of solar thermometer set at 4 P.M.	Solar thermometer after setting	Rainfall in inches. Gauge C. Examined at 10 A.M.	Remarks.
1	4.8	13.3	8.9	9.0	13.2	12.9	10.7	26.5	4.2	43.8	13.0	0.000	d Rg y > A 2.
2	12.5	17.4	29.6	19.8	17.7	17.2	15.5	15.0	7.4	27.7	20.8	0.000	A little snow previous night; {snow increasing after 10 A.M.; with thick at 2 P.M.}
3	22.7	44.0	41.7	36.1	43.0	43.2	29.2	29.2	16.1	96.1	46.5	** 0.275	y w< Clearing off to 2 P.M., afternoon cloudy.
4	53.2	60.6	51.0	54.9	60.9	60.0	55.0	57.6	29.2	78.0	61.9	0.000	wyn A little rain at times.
5	36.0	37.0			37.4	36.9	38.2	61.6	34.3	93.0	34.5	0.018	yl
6	24.3	33.2	27.2	28.2	33.8	33.1	30.3	38.5	24.2	99.6	37.7	0.000	yl
7	19.7	29.9	22.3	24.0			27.0	33.6	18.4	101.0	30.3	0.000	rl
8	19.2	35.0	32.4	28.9	35.0	34.8	24.9	29.9	15.7	95.0	37.5	0.000	yl
9	25.8	48.4	41.5	38.6	48.7	47.7	42.1	43.2	23.4	64.0	45.5	0.135	yw A little rain previous night and this morning.
10	33.5	37.4	27.6	32.8	38.0	37.2	38.5	48.1	33.0	110.0	35.3	0.000	rl
11	26.7	31.9			32.5	31.6	30.3	38.6	21.1	77.5	32.6	0.000	yc {Snow beginning about noon; a little snow with a few drops of rain rest of the day.}
12	36.8	40.8	(37.2)	38.3	41.3	40.3	38.8	38.8	29.0	46.0	41.1	0.218	ya {Rain previous night and this morning; whole day comparatively raining;}
13		40.0			40.8	40.0	38.6	40.6	35.1	42.4	40.6	0.600	ya Rainy much of the time.
14	25.8	31.6	31.6	29.7			29.8	40.0	24.7	98.0	35.0	0.922	rl y < 8.
15		(34.3)	28.4		(34.9)	(34.1)	33.0	35.5	26.3	105.0	33.3	0.000	ryl y > A 10.
16	34.5	44.6	35.9	38.3	45.2	44.6	36.6	36.6	25.3	111.0	48.4	0.000	l Ry
17	35.0	39.0	31.9	35.3	40.0	39.0	34.8	44.7	33.0	104.2	41.5	0.001	yl y > A SlR
18	29.5	41.0	34.0	34.8	41.8	40.9	33.4	41.0	27.7	99.7	43.0	0.000	Much white frost this morning. Syl
19	28.8	38.7	(37.8)	35.1	39.3	38.6	35.0	41.2	28.3	49.8	36.9	0.000	yc Rain 4 P.M. and later.
20	33.0	35.7	33.2	34.0	36.2	35.7	34.0	38.9	33.0	100.0	38.2	† 0.540	yl y > y < 6.
21		‡ 23.3	18.3				18.8	31.5	13.0	93.0	25.7	0.000	rRd 8 8½.
22	15.8	28.9	22.1	22.3	29.8	28.9	23.0	23.9	15.2	99.0	31.0	0.000	rRd
23	14.5	28.4	28.6	23.8	28.9	28.0	20.4	29.1	14.0	37.7	29.8	0.000	y Rd
24	24.0	36.6	30.7	30.4	37.5	36.6	26.7	29.3	18.6	103.1	39.9	0.000	rl
25	30.8	34.2			34.8	34.0	33.8	37.2	25.2	46.2	34.2	0.000	yl
26	27.2	34.7	(29.3)	30.4	35.2	34.6	29.4	34.8	26.7	39.5	31.3	0.000	y Snow and rain; snow thicker after 4 P.M.
27	21.3	25.8	27.8	25.0	25.8	25.1	24.0	36.1	20.1	51.4	28.8	** 0.677	y Snow about noon and later.
28	24.3	29.5	27.9	27.2			(31.1)	(32.1)	(22.0)	37.0	33.0	(1.255)	ys y > A 1. Snow till about 1 P.M.
29		33.2	28.3		33.9	32.0	28.0	31.8	22.0	93.9	33.0	0.000	yl SlR Slight snow squall about 5 P.M.
30		21.7	8.7		22.0	21.1	23.3	33.3	18.4	103.0	35.0	0.000	v Rc Few snowflakes about noon.
31	16.7	32.1	(20.6)	23.1	32.8	32.0	26.0	25.3	7.6	99.1	34.5	0.000	rl y < A 2.
Sums	676.4	1062.2	794.5	700.0				1123.5	682.2			4.641	Rainfall for month 4.64 inches.
Means	26.0	34.3	29.4	30.4				36.24	22.01				Mean temperature " " 30.4 Fahrenheit.

Maximum " " " 61.6 " ; Dec. 5
Minimum " " " 4.2 " ; Dec. 1
" (reduced to standard of No. 4) 4.6 "
Highest reading of solar thermometer 111.0 " ; Dec. 16

Velocity of wind merely estimated in miles per hour; see notes in record for 1872.

Observations in parentheses ( ) were not made at the regular times. The actual times are given below.

Date	Regular times	Actual times.
12	9 P.M.	9¾ P.M.
15	2 P.M.	2¼ P.M.
19	9 P.M.	10 P.M.
26	9 P.M.	9 5/12 P.M.
28	10 A.M.	10½ A.M. (snow measured 11 A.M.)
31	9 P.M.	11½ P.M.

The observations below were made at times when the cloth about the wet bulb of the psychrometer was apparently dry. See similar notes in the record for 1872 and later.

Date	Time	Dry bulb	Wet bulb	No. 4
15	9 5/12 A.M.	33.6	32.1	32.4
17	9 3/12 A.M.	35.0	33.5	33.8
19	9 5/12 A.M.	33.1	31.7	31.6
23	9 7/12 A.M.	18.0	16.4	16.6
24	9 3/12 A.M.	24.8	23.2	23.2
25	9 7/12 A.M.	33.3	31.9	32.1

The relative humidity for December, 1873, has been computed according to the corrections given in the record for September, 1873.

Auroras noticed.

None this month.

L. Trouvelot records auroral light Dec. 6 and 7 (the last doubtful.)

* Frost on all the thermometers at 10 A.M. Dec. 3.

† After the measurement of rainfall Dec. 20, the measuring glass for gauge C fell apart where it had been formerly broken and mended, and the upper part of it was broken to pieces by the fall. Future records will therefore depend on actually weighing the water collected from gauge C, or on measuring it in glasses graduated to ounces avoirdupois.

‡ The original record of the reading of No. 4 at 2 P.M. Dec. 21 seems to be 32.3, but the maximum reading of 10 A.M. Dec. 22 shows that this must be a mistake, probably for 23.3.

§ Wet bulb wetted at 3 P.M. Dec. 26 but stood above dry bulb at 4 P.M. probably because not long before 4 P.M. the temperature had fallen a little somewhat suddenly, and the wet bulb had begun to freeze.

‖ At 10½ A.M. Dec. 28 the wind was light, but there was breeze enough to drift the snow to some extent. The observer probably got his record from the anemometer, which was no doubt much clogged up.

** Measures of rainfall Dec. 3, 27, 28, made by measuring and weighing snow, not by gauge C. See notes on falls of snow.

No snow sufficient for measurement fell after 11 A.M. Dec. 28, although a little fell that day and also Dec. 29 and 30.

At 12 7/12 P.M. Dec. 4
Barometer 29.766
Attached thermometer 68.0

At 9½ P.M. Dec. 26 it was snowing hard.

Observers as in June, 1873. (Snow on Sunday Dec. 28 measured by A. Searle.)

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13.9 in record

General Remarks on the Observations for 1873.

Range of temperature.

Minimum temperature observed in 1873 — 13.6 Fahrenheit, January 30.
Maximum " " " " 92.2 " , July 16.
Highest reading of solar thermometer " " 157.2 " , June 28.

The minimum above is reduced to the standard of External Thermometer No. 4; the two maxima are the unchanged readings of the maximum thermometers.

Observers (see remark at foot of opposite page)

The reading of External Thermometer No. 4 at 7 A.M. is by Bridget Henry throughout the year, except May 2, 3, 5, 6, when the observer was A. Searle. The reading of the same thermometer at 9 P.M. is by W. Winlock throughout the year, except August 18, 20, 21, when the observer was A. Searle; and the days before January 8, when the observer was L. Trowbot. W. Winlock observed also on Jan. 12, at 10 A.M.; Jan. 19, 10½ A.M.; Jan. 25, 2 & 4 P.M.; Jan. 26, 10 A.M. 2 & 4 P.M.; and on Sundays after January at 10 A.M., 2 & 4 P.M., as well as 9 P.M. L. Trowbot observed at 10 A.M., 2, 4, & 9 P.M. from 10 A.M. Jan. 2 to 10 A.M. Jan. 7, both inclusive; also on May 17 at 10 A.M. The remaining observations are by A. Searle, who lodged in Boston previous to June 20; afterwards in Cambridge, near the Observatory. Hence notes of evening phenomena noticed by him before June 20 were made in Boston.

Instruments

The instruments used during 1873 will be found described in this book previous to the record for 1872. The thermometers Casella 3235 and Casella 12530 were replaced in the neighborhood of No. 4 towards the end of January 1873, and were regularly read during the rest of the year.

Casella 12530

Casella 12530 is a thermometer with a round bulb, and a scale graduated to degrees of Fahrenheit. It stood at 32.0 when placed in a bucket of ice and water Dec. 29, 1872, the temperature of the air being about 32.5 Fahrenheit. It has a copper case of the ordinary kind. {This thermometer has a Kew certificate, pasted into a book containing memoranda relating to various instruments.}

Psychrometer

The psychrometer remains apparently in nearly the same condition as in 1872. Observations to determine its errors, and statements of the corrections applied in deducing the relative humidity, will be

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found in the record for 1873.

Maximum (set this year at 10 A.M. instead of 9 P.M. as heretofore)

As the maximum thermometer can be set only be being taken into the transit room, its reading after setting is of no value for purposes of comparison with No. 4 or the other thermometers, and only serves to show where the mercury stood when it was replaced in its position. The instrument probably reads a little lower than No. 4 at the same temperature, but does not differ much from it.

Solar thermometer

The solar thermometer was carried off by some children in May, but recovered after a time. When remounted, it was set 6 inches from the ground, instead of 7 inches, as before; its place was not otherwise changed.

Barometer Newman 57

The barometer was often compared early in the year with barometer Newman 68, at the same height from the floor, in the Circle Room. The instruments were found to agree probably within 0.005 inches, after correction for temperature, Newman 57 standing highest. The reduction of the comparisons was made in a thin quarto book marked "Memoranda concerning the Observatory and its instruments."

Wind

The anemometer has remained practically useless during 1873. The force of the wind has been estimated in miles per hour; W. Winlock has sometimes used the anemometer.

Rainfall

Gauge C has continued to be the standard; it was damaged by the driving against it of a cart in the night preceding Nov. 12, and repaired as well as might be with pincers and file so as to make the mouth of its funnel everywhere 5 inches across as before. Its measuring glass was broken Dec. 20 so as not to be capable of being mended again. Gauge A became useless from leakage during the latter part of 1873. Falls of snow have been measured in the manner described in the general remarks on the observations for 1872.

Phenomena

No unusual phenomena have been observed in 1873. The first part of the year was cold and snowy; the latter part of the summer was wet and chilly. Barometer remarkably low November 18, without high wind.

Thermometer readings by Bridget Kenny

It was discovered in January 1874 that Bridget had fallen into the habit of setting down the thermometer reading at 7 A.M. from memory, long after the observation. The 7 A.M. reading for previous years is therefore not very trustworthy.

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January 1874. Meteorological Record of

10 A.M.

Date	Barometer	Attached Thermometer	Casella 3235	Casella 12530	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity by Guyot's Tables (see note)	Wind; see also Journal, corrected from week's data	Clouds
1	30.370	53.0	32.8	31.8	32.4	32.0	33.6	29.9	78	5 SW	9 R Rs Rm
2	(30.271)	(68.0)	(41.0)	(40.1)	(40.7)	(40.0)	(42.0)	(40.5)	(98)	(2 S)	(10 Rm fog; raining)
3	30.400	63.2	35.0	34.1	34.7	34.0	35.6	34.0	99	1 SW	10 Rm fog
4	30.331	69.4	47.6	46.4	46.9	46.3	48.1	45.3	88	1 S	5 Fm R Rs
5	30.354	70.0	46.5	45.5	45.9	45.4	47.2	42.6	74	3 NW	10 Rm
6	30.602	62.6	28.0	27.6	27.7	27.0	28.8	27.3	100	10 N	10 R; snowing
7	30.104	61.3	32.8	32.0	32.2	32.0	33.5	32.0	100	0 N	10 Rm; mist
8	29.696	63.0	51.5	50.7	51.2	50.4	52.3	51.0	100	4 S	10 Rm; raining
9	29.810	53.5	35.8	34.8	34.4	34.9	36.5	31.7	68	1 SW	0 R Rs
10	29.602	62.0	41.8	40.8	41.1	40.5	42.5	40.5	94	5 S	10 Rm
11	29.789	64.9	35.5	34.9	34.9	34.9	36.4	32.1	72	2 SW	9 Rm Fm Rs
12	30.183	57.3	29.7	28.8	28.9	28.9	30.2	24.8	54	4 W	0 M Fm
13	30.484	53.9	21.0	20.2	20.3	20.0	21.8	17.8	63	4 NW	1 R Rs
14	29.736	58.8	30.0	29.4	29.5	29.3	30.8	29.5	100	12 NE	10 R; snowing
15	29.716	49.3	15.8	15.0	14.9	14.9	16.9	14.4	83	5 W	0 Fm
16	29.736	36.2	9.2	8.8	8.9	8.2	cannot be read; pretty freezing	7.9		11 W	7 R Rs
17	30.340	39.0	11.2	10.5	10.5	10.8	about 12.0; cannot be read accurately	9.0		7 NW	0
18	30.601	55.0	20.1	19.4	19.2	19.4	21.8	18.4	71	1 SW	0 haze
19	30.170	59.1	36.4	34.9	36.5	35.5	37.1	35.0	94	0 calm	10 Rm fog
20	30.318	63.2	28.5	27.8	27.9	27.5	29.3	25.0	68	10 N	0
21	30.583	59.9	20.6	19.8	20.1	19.6	21.4	18.8	83	1 N	10 R; a little snow
22	30.160	64.9	34.9	33.9	34.9	34.0	35.8	33.5	92	0 E	10 Rm fog
23	29.782	69.4	51.0	50.0	50.5	49.8	51.8	50.1	97	8 S	10 Rm; a little fog
24	30.372	60.4	30.7	30.0	30.1	29.9	†31.2	†25.2	51	1 NW	2 R Rs
25	30.316	57.4	16.2	15.6	15.6	15.1	17.9	12.3	45	20 NW	0
26	30.548	55.1	2.9	2.6	2.0	2.0	below graduation			13 W	0
27	30.181	57.3	19.7	19.0	19.4	18.8	20.3	18.7	98	4 W	10 R
28	29.760	59.6	21.8	21.2	21.4	20.9	†22.7	†21.8	100	1 N	10 R fog
29	30.181	63.1	24.1	23.5	23.5	23.2	25.0	21.0	67	4 NW	1 Rs
30	30.482	57.5	8.9	8.6	8.3	8.0	cannot be read; under freezing	7.4[?]		13 N	0 R
31	30.375	50.4	6.7	6.4	6.2	5.7	7.8	cannot be read; under freezing		9 N	10 R; snowing

4 P.M.

Date	Barometer	Attached Thermometer	Casella 3235	Casella 12530	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity by Guyot's Tables (see note)	Wind; see also Journal, corrected from week's data	Clouds
1	30.322	63.0	40.0	39.3	39.5		40.6	36.0	70	4 S	10 R Rs Rm
2	30.268	64.5	41.0	40.2	40.6		41.8	39.8	94	4 SW	10 Rm
3	30.350	71.5	38.0	37.3	37.6		38.8	37.0	97	0 calm	10 Rm; thick fog
4	30.240	67.3	50.9	50.9	51.0		51.7	50.2	99	1 SW	10 Rm; misty
5	30.470	63.8	37.5	36.8	37.0		38.1	32.0	56	9 N	10 Rm
6	30.454	56.2	33.9	33.0	33.2		34.6	33.0	99	9 NE	10 Rm; raining; low mist
7	29.992	64.0	34.0	33.4	33.5		34.8	33.2	99	2 N	10 Rm; mist; fine rain
8	29.630	59.4	45.0	45.0	45.4		46.6	41.8	72	16 SW	8 Rm M Fm
9	29.777	69.8	43.7	43.0	42.7		44.2	36.8	51	2 SW	0
10	29.622	63.8	43.8	42.8	43.0		44.2	36.1	44	9 SW	5 Rm Fm
11	29.802	65.0	38.0	37.1	37.4		38.5	33.4	65	10 W	2 M Fm
12	30.247	63.9	30.2	29.7	29.7		30.8	24.3	45	8 W	2 Rm Fm
13	30.449	62.5	26.0	25.4	25.6		26.8	21.8	57	2 N	10 R Rs
14	29.680	54.3	21.5	21.0	21.2		23.0	21.0	93	12 N	10 R; snowing
15	29.620	49.5	18.1	17.1	17.7		19.0	15.8	72	7 W	9 R Rm Fm
16	29.865	50.2	14.8	14.0	14.2		15.4	11.7	60	6 W	0
17	30.464	59.3	22.0	21.3	21.4		22.8	18.0	53	3 NW	0 Fm
18	30.541	67.2	33.1	32.7	32.7		33.7	27.7	55	1 SW	0 horizon hazy
19	29.948	65.8	42.4	41.8	42.2		43.0	41.6	99	3 S	10 Rm fog; raining
20	30.473	68.0	27.8	27.0	27.2		28.3	23.2	57	8 NE	0
21	30.879	65.0	32.9	31.9	32.6		33.5	31.6	96	4 SE	10 R; very fine snow
22	30.034	67.5	46.8	46.0	46.6		47.0	44.8	88	4 SW	10 Rm
23	29.685	68.0	56.7	55.8	56.2		57.6	53.9	85	11 SW	7 R Rm Rs
24	30.265	62.6	35.9	35.1	35.3		36.2	29.2	49	2 SW	10 Rm R Fm
25	30.350	60.2	17.9	17.3	17.3		18.6	13.9	48	25 NW	9 M Fm
26	30.436	62.1	11.4	11.1	11.0		12.0	8.2	53	10 NW	1 R Rs
27	30.072	55.8	24.0	23.8	23.6		24.5	21.7	83	3 NW	10 R
28	29.581	64.5	30.0	29.0	29.4		31.0	29.1	96	0 NW	10 R fog
29	30.108	66.2	33.0	32.2	32.2		33.6	27.9	58	6 SW	9 R Rs Fm
30	30.516	58.3	9.0	8.9	8.5		cannot be read			10 N	0 R Rs
31	30.229	52.0	11.5	11.0	11.0		about 12.2	11.2	100	6 N	10 R; snowing

Items	10 A.M.	4 P.M.
Barometer	935.353	933.869
	31	31
	30.173	30.125
	−.081	−.091
	30.092	30.034
Attached Thermometer	1817.7	1932.1
	31	31
	58.6	62.3
Casella 3235	867.7	990.8
	31	31
	28.0	32.0
Casella 12530	844.1	970.9
	31	31
	27.2	31.3
No. 4	850.7	976.5
	31	31
	27.4	31.5
Minimum after setting	838.9	
	31	
	27.1	
Dry bulb	857.4	990.7
	29	29
	34.8	34.2
	Or, adding estimate for Jan. 16, 17, 26, 29 mean 28.5	Or, adding estimate for Jan. 30, 31 mean 32.7
Relative humidity	2137	2193
	26	30
	82	73
Wind	162	197
	31	31
	5.2	6.4
Clouds	184	212
	31	31
	5.9	6.8

See notes on error of psychrometer

Rain gauge A not in use; emptied out Jan. 8, 20, 23.

Measures of snow as follows: the inches of snow weighed depote the length of a cylinder 1 7/8 inches in diameter.

Jan. 14, 10 A.M. Depth of snow by mean of 10 measures 10.3 inches; measures 11½, 12, 10, 8, 9, 9, 11, 11, 9½, 12. 11½ inches weigh 2¾ ounces; hence rainfall 1.546 inches.

Jan. 15, 10 A.M. Depth of snow by mean of 10 measures 10.8 inches; measures 11, 12½, 9, 10½, 10½, 11, 11½, 10, 12, 10. 12 inches weigh 2¾ ounces; hence rainfall 1.583 inches, less 1.546 measured Jan. 14; remainder 0.037

Jan. 31, 10 A.M. Snow about 2 inches deep, pretty uniform. 11 inches weigh 1 3/4 ounces; hence rainfall 0.200 inches.

Jan. 31, 5½ P.M. Snow about 3 inches deep, pretty uniform. 14 inches weigh 2½ ounces; hence rainfall 0.387 inches, less 0.200 inches measured at 10 A.M.; difference 0.187

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Harvard College Observatory. January 1874.

Date	External Thermometer No. 4				2 P.M.		Maximum after setting	Extreme temperatures			Solar thermometer after setting	Rainfall in inches. Gauge C Lyddmond at 10 A.M.	Remarks.
	7 A.M.	2 P.M.	9 P.M.	Mean	Casella 3235	Casella 12530		Maximum set at 10 A.M.	Minimum set at 10 A.M.	Maximum solar thermometer set at 4 P.M.			
1	27.3	42.0	36.8	35.4	42.3	41.3	32.0	32.0	18.0	88.3	41.0	0.000	
2	34.5	(41.6)	37.9	38.0	(41.7)	(41.0)	(40.5)	(41.9)	(32.0)	55.6	42.0	(0.199)	
3*		39.1	38.9		39.5	38.7	35.2	41.4	31.3	53.6	38.0	0.033	
4		53.9	52.8		54.3	53.4	45.5	46.9	34.0	113.7	54.8	0.000	
5		39.6	31.9		40.1	39.4	46.2	55.8	45.4	59.8	38.0	0.011	
6		32.9	28.6		33.5	32.7	29.0	46.3	27.0	39.0	34.0	0.110	
7		33.0	29.4		33.5	32.5	32.4	33.2	27.0	38.2	34.6	0.088	ya
8		48.8	37.7		49.6	49.0	48.8	53.6	31.6	99.4	50.7	0.441	ya y>A3.
9		(41.9)	(27.4)		(43.1)	(42.1)	35.4	50.3	31.0	107.9	61.5	0.077	zw
10		44.4	28.5		45.2	44.2	41.2	43.2	30.0	106.8	46.0	0.022	A little rain early. y>A10 wN. RrN.
11		37.5	32.6		38.3	37.4	37.0	44.2	29.4	110.7	48.2	0.000	vl A little snow for a few minutes only about 1 P.M.
12		31.2	24.3		31.9	31.5	30.5	39.8	25.7	96.7	35.0	0.000	rl nd<N.
13		25.4	24.4		25.8	25.1	22.2	31.2	15.3	89.7	27.2	0.000	rl y<
14		20.0	19.8		20.2	20.0	30.0	30.8	20.0	56.0	28.0	‡1.546	ys Snow previous night & today with slight intermissions
15		19.2	10.8		19.4	18.2	18.0	30.3	10.4	108.7	35.5	‡0.907	zRd fy<N zU
16	8.7	15.0	(9.9)	11.2	15.8	14.8	11.0	19.8	5.8	98.8	43.5	0.000	d Rr
17	5.5	21.0	13.0	13.2	21.6	20.6	14.0	16.3	5.0	100.8	60.0	0.000	rd
18	5.7		23.2				21.5	22.2	4.9	102.0	57.0	0.000	rl
19	29.0	42.9	40.9	37.6	43.1	42.4	36.0	36.1	19.2	60.0	44.0	0.000	yf A Rain beginning between 2 & 4 P.M.; raining hard 9 P.M.
20	29.8	28.5	20.9	26.4	29.0	28.2	29.0	42.7	26.8	98.0	50.4	0.243	rl
21	16.5	31.3	31.1	26.3	31.6	30.9	21.4	29.0	13.5	50.2	34.0	0.000	y Rd A little snow in the middle of the day. d> Sa U
22	30.7	47.0	42.3	40.0	47.0	46.4	34.5	34.4	19.6	76.0	49.1	0.132	yf f>w<
23	52.0	56.5	42.2	50.2	57.0	56.0	49.0	52.2	33.8	91.0	81.2	0.033	yw y>N Rr U.
24	28.2	36.8	27.1	30.7	37.3	36.3	31.3	56.3	27.2	106.2	40.7	0.000	Rd y<A10 Rr U.
25	16.8	18.7	11.8	15.8	19.1	18.3	19.9	36.7	14.1	90.9	34.0	0.000	nrd d<
26	*0.7	9.2	9.9	6.1	9.9	9.6	5.0	20.4	−0.9	83.5	31.0	0.000	rd y<A4.
27	15.2	24.2	21.7	20.4	24.5	23.9	20.0	19.6	2.0	56.0	28.3	0.000	y Rd {A little snow previous night; ground nearly whitened.}
28	20.5	27.0	36.2	27.9	27.2	26.8	22.4	24.5	18.7	34.0	32.6	0.011	yc {A little snow previous night; ground nearly whitened; rain at the day.} y>w< U.
29	20.5	29.7	29.0	26.4	30.6	29.7	24.9	31.7	20.0	98.0	40.5	0.132	rl y<N
30	12.7	9.5	3.0	8.4	10.0	9.8	10.8	33.0	7.8	91.0	31.7	0.000	rd
31	4.0	9.8	9.9	7.9	10.0	9.8	9.0	11.0	2.5	31.4	18.4	‡0.200	yds Moderate snow through the day till 4½ P.M.
Sums	356.9	957.6	833.9	421.9				1108.8	628.1			3.285	Rainfall for month 3.28 inches.
Means	19.8	31.9	26.9	24.8				35.77	20.26				Mean temperature for " 28.2 Fahrenheit.

This mean temperature is the mean of the three means for 7 A.M., 2 P.M., 9 P.M. It would probably be higher if the 7 A.M. record had been properly kept.

Maximum temperature for month 56.3 Fahrenheit; Jan. 24.
Minimum " 0.9 " ; Jan. 26
" (reduced to standard, of No. 4) −0.5 "
Highest reading of solar thermometer 113.7 " ; Jan. 4

The force of the wind is merely estimated in miles per hour. See general remarks on observations of 1873.

Observations in parentheses ( ) were not made at the regular times. The actual times are given below.

Date	Regular times	Actual times
2	10 A.M., 2 P.M.	12½ P.M., 2⅙ P.M.
9	2 P.M., 9 P.M.	2⅙ P.M., 9 5/12 P.M.
16	9 P.M.	9⅔ P.M.

* Note on 7 A.M. reading of No. 4.

It was discovered this month that Bridget had fallen into the habit of setting down her readings from memory long after the proper time. The new memorandum book in preparation by W. Winlock and N. Lamb not being ready at the beginning of the year, Bridget did not set down her observations for several days and so forgot many of them altogether. The 7 A.M. readings of previous years are discredited by this discovery, but most of them are probably right.

When the thermometer stands below zero, Bridget's readings are rather wild. On Jan. 26, her reading was °1.3; as No. 4 stood at 8¼ A.M. at −0.3 and as the minimum was −0.9, the 7 A.M. reading of No. 4 was probably −0.7, or three tenths above −1.0.

The observations below were made at times when the cloth about the wet bulb of the psychrometer was apparently dry, see similar notes in record for 1873.

Date	Time A.M.	Dry bulb	Wet bulb	No. 4
12	9⅙	29.0	27.5	27.5
13	9	19.8	18.3	18.1
24	9 5/12	31.1	29.7	29.8
30	8	11.9	10.6	10.4

The relative humidity for January 1874 has been computed with the corrections given in the record for September 1873.

† Notes on psychrometrical observations.

Jan. 24. Wet bulb wetted at 9 5/12 A.M.; at 9⅔ A.M. dry bulb 31.0, wet bulb 24.6; the psychrometer watched for a considerable time. The wet bulb either did not freeze or froze without a rise of temperature. At 10 A.M. dry bulb 34.2, wet bulb 25.2.

Jan. 28. Wet bulb wetted at 8 A.M.; did not appear dry at 10 A.M.; reading at 10 A.M. carefully made.

‡ Rainfall determined by measurement of snow. Jan. 14, 15, 31. See snow measures opposite.

Auroras noticed.

Jan. 15, 6¼ P.M.; arch somewhat vague; a few streamers; faint reddish light on upper edge of arch.

Jan. 16, 6½ P.M.; faint arch; disappeared before 7 P.M.

Jan. 17, 8 & 9½ P.M.; at 9½ P.M. 3 arches, the upper incomplete, the sky dark between them; some streamers above; color white.

L. Trowbridge records auroras on the above dates only.

Zodiacal light.

Jan. 11 & 12. Zodiacal light conspicuous 6 to 7 P.M.; vertex at 6 P.M. about 10° beyond Mars.

Jan. 16. Zodiacal light about 6½ P.M.

Jan. 18. Zodiacal light seen distinctly about 6½ P.M.

(The zodiacal light seems to be rather unusually distinct of late. Between 6 & 7 P.M. its northern edge lies along the line roughly indicated by the stars ω, o, γ, β, Piscium, and γ, δ, α Aquarii. Mars is nearer its southern than its northern edge and several degrees within its apex.)

Observers as in June 1873; 7 A.M. observation by Bridget Henry; 9 P.M. observation every day, & also 10 A.M., 2 P.M., 4 P.M., observations on Sundays, (Jan. 4, 11, 18, 25,) by W. Winlock; other observations by A. Searle.

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February 1874. Meteorological Record of

10 A.M.

Date	Barometer	Attached Thermometer	Casella 32.35	Casella 125.30	No. 4	Minimum after setting	Bychrometer Dry bulb	Bychrometer Wet bulb	Relative humidity Guyot's Tables	Wind	Clouds
1	30.580	48.3	6.0	5.6	5.3	5.1	5.5	cannot be read		3 N	9 Rs
2	30.780	44.9	2.3	2.1	1.9	1.7	below graduation	2.7		8 N	10 R
3	30.052	47.3	17.1	16.9	16.9	16.3	18.1	16.9	100	14 N	10 R; snowing
4	29.932	58.6	28.9	27.9	28.5	27.9	29.7	25.5	69	9 NW	10 R
5	30.327	55.0	12.9	12.0	12.4	12.0	13.8	11.0	75	9 NW	0
6	30.398	54.8	8.6	7.8	7.9	7.7	under freezing; cannot read.			6 NW	1 Rs
7	29.968	50.6	14.6	14.0	14.3	13.7	15.4	14.1	100	6 N	10 R; snowing
8	30.191	50.2	20.0	17.8	19.1	19.0	20.4	15.4	46	25 NW	0
9	30.199	55.2	18.5	17.1	17.9	17.4	19.4	15.8	67	0 NW	5 RRs; thin
10	29.707	56.5	26.0	24.8	25.8	25.2	27.0	22.4	61	7 N	10 R
11	29.701	48.9	21.2	20.2	20.7	20.2	22.0	17.8	61	9 NW	0
12	30.199	56.5	16.8	15.8	15.6	15.8	17.7	14.8	76	3 W	2 Rs Rm
13	30.170	63.7	29.8	28.6	29.4	28.9	30.9	27.9	83	0 calm	10 R; some fog
14	29.871	62.8	45.0	44.0	44.4	44.1	45.8	39.3	58	14 NW	2 R Fm.
15	30.330	54.0	34.8	34.1	34.1	34.0	35.9	30.9	67	7 NW	8 RRs
16	29.749	65.1	31.3	30.9	31.4	30.4	32.2	29.5	87	1 SW	10 R; a few snowflakes
17	29.729	57.6	28.9	28.1	28.3	28.0	29.6	23.1	43	10 NW	2 RRs Fm
18	30.249	55.1	20.0	19.0	19.0	19.0	20.7	16.2	53	8 NW	0
19	30.432	63.6	25.6	24.7	25.2	24.8	26.5	22.6	70	0 calm	10 R; thin
20	29.892	66.1	46.2	45.4	46.0	45.2	48.0	44.6	85	6 S	10 Rm
21	30.220	63.0	38.0	37.2	37.6	37.0	39.0	37.0	95	0 calm	10 Rm mist; raining
22	30.270	65.0	37.9	37.4	37.4	36.9	38.4	36.6	97	0 calm	10 Rm; a little rain
23	29.915	60.8	38.0	37.1	37.5	37.0	38.6	37.3	100	0 SE	10 Rm fog
24	30.371	68.7	31.9	31.6	31.7	31.0	32.5	26.0	48	10 NW	10 R M Fm
25	30.558	62.2	24.0	23.5	23.5	23.0	24.6	20.3	62	8 NE	10 R Rm
26	30.250	56.0	22.8	21.8	22.0	21.7	23.8	20.8	79	5 NW	0 Fm M Rs
27	29.970	63.0	29.7	28.8	29.4	28.8	30.3	25.7	66	8 W	5 R Rs
28	30.250	60.8	17.0	16.8	17.1	16.0	18.1	15.0	73	1 SW	6 R Rs

4 P.M.

Date	Barometer	Attached Thermometer	Casella 32.35	Casella 125.30	No. 4	Minimum after setting	Bychrometer Dry bulb	Bychrometer Wet bulb	Relative humidity Guyot's Tables	Wind	Clouds
1	30.630	59.8	11.0	11.0	10.7		10.6?	9.0?		0 N	9 R Rs
2	30.685	50.8	8.9	8.6	8.4		under freezing; cannot read			8 N	10 R; snowing
3	29.649	46.4	24.3	23.9	24.0		25.6	23.7	95	17 N	10 R; snowing
4	30.006	67.7	28.0	26.8	27.7		28.8	24.0	61	8 NW	1 R Rs
5	30.349	62.4	15.0	13.8	14.5		15.8	12.0	59	6 NW	0
6	30.270	56.2	17.6	16.7	17.3		18.2	14.0	55	6 W	10 R
7	29.941	59.2	20.5	19.5	20.0		21.4	18.0	71	4 NW	9 R Rs Rm
8			28.0	25.5	27.1		28.3	not wet down cannot		5 NW	0
9	30.060	63.5	31.1	30.3	30.5		31.3	26.9	68	1 SE	10 R; thin
10	29.617	59.1	31.0	29.7	30.8		31.8	26.8	63	10 NW	10 R; thin
11	29.737	62.2	26.9	25.9	26.4		27.4	22.0	53	6 NW	6 Rm Fm
12	30.208	65.1	29.3	28.6	28.6		29.9	23.9	49	2 W	0
13	29.968	60.8	45.7	45.0	45.2		46.0	44.6	99	11 S	10 Rm
14	30.081	67.7	41.3	40.2	40.7		41.8	33.0	36	9 W	1 Rs
15	30.251	63.3	35.2	34.6	34.7		36.0	31.3	69	1 N	9 M Rm
16	29.548	62.9	37.3	36.5	36.8		38.0	35.3	88	4 SW	6 Rm Fm
17	29.840	65.8	28.9	28.3	28.4		29.4	25.4	71	16 NW	0
18	30.333	67.2	30.6	30.3	30.7		32.0	24.8	40	3 W	0
19	30.259	64.4	37.3	36.7	36.9		37.8	32.7	65	6 SW	10 R Fm
20	29.932	69.0	52.4	51.9	52.0		53.2	46.6	64	6 W	6 R Rs M Fm
21	30.060	62.6	38.1	37.3	37.5		38.9	36.5	91	0 calm	10 Rm
22	(30.270)	(65.0)	(36.6)	(36.0)	(36.2)		(37.2)	(35.7)	(100)	(0 N)	(10 Rm; raining)
23	29.749	67.6	46.0	45.3	46.0		47.3	45.4	95	0 calm	9 R Rs Fm
24	30.498	68.1	30.9	30.0	30.3		31.4	24.8	45	5 NW	10 R Rs; thin
25	30.272	60.0	25.9	25.2	25.5		26.8	25.3	100	10 E	10 R; snowing
26	(30.213)	(64.3)	(30.0)	(29.2)	(29.4)		(30.8)	(25.6)	(59)	(3 W)	(1 Fm M Rs)
27	29.976	69.5	33.7	32.8	33.0		34.1	29.3	67	11 W	1 M Fm
28	30.425	62.2	32.3	31.6	31.8		33.0	27.8	62	5 SW	1 M Fm

Sums of columns number of observations, means, and reduction of barometer to the freezing point.

	10 A.M.	4 P.M.
Barometer	844.260	812.527
	28	27
	30.152	30.094
	−.079	−.092
	30.073	30.002
Attached Thermometer	1614.3	1692.8
	28	27
	57.7	62.7
Casella 32.35	693.8	853.8
	28	28
	24.8	30.5
Casella 125.30	670.6	831.7
	28	28
	23.9	29.7
No. 4	680.3	841.1
	28	28
	24.3	30.0
Minimum after setting	667.8	
	28	
	23.9	
Dry bulb	703.9	852.2
	26	26
	27.1	32.8
	Or, adding estimate for Feb. 28, 26	Or, adding estimate for Feb. 14, 2
	mean 25.6	mean 31.2
Relative humidity	1821	1725
	25	25
	73	69
Wind	177	163
	28	28
	6.3	5.8
Clouds	180	169
	28	28
	6.4	6.0

Rain gauge A not in use; shutted out about 10 A.M. Feb. 14 and 23.

Measures of falls of snow as follows:
Feb. 3, 10 A.M.; depth in 10 places 11½, 10, 12, 10½, 9½, 10, 10, 10½, 11, 11; mean depth 10.6 inches; probably not over 2 inches old snow. Assumed depth of new snow 8.6 inches; 12½ inches in cylinder 4 inches in diameter weigh 2⅔ ounces. Hence rainfall 1.187 inches.
A second trial of the density of the snow about 11 A.M. made as carefully as possible to avoid an over estimate by packing the snow gave 2⅞ ounces for the weight of 12½ inches. The snow was evidently becoming denser.

1872phae.proj..382S

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Harvard College Observatory. February 1874

Date	External Thermometer No. 4 7 A.M.	2 P.M.	9 P.M.	Mean	2 P.M. Casella 3235	2 P.M. Casella 12530	Maximum after setting	Extreme temperatures: Maximum set at 10 A.M.	Minimum set at 10 A.M.	Maximum of solar thermometer set at 4 P.M.	Solar thermometer after setting	Rainfall in inches. Gauge C examined at 10 A.M.	Remarks
1	2.7	11.2	1.5	5.1	11.8	11.3	11.1	10.2	2.9	94.0	20.9	††0.187	d Rr
2	*-2.8	9.2	5.9	4.1	9.6	9.2	4.5	12.2	-4.7	45.8	18.0	0.000	yd A little snow
3	12.3	19.0	26.1	20.1	19.2	18.9	18.0	†17.7	1.5	27.0	27.0	††1.187	ys d— Snow previous night and this day till 5 P.M.
4	27.3	29.2	20.1	25.5	29.8	28.5	28.4	30.8	15.8	119.1	69.3	††0.669	yl y—A 10.
5	11.2	15.7	7.0	11.3	16.0	15.0	14.6	29.2	9.2	97.0	63.0	0.000	rd
6	0.8	16.2	10.3	9.1	16.7	15.4	10.0	16.0	0.0	92.9	25.2	0.000	
7	10.7	19.6	12.9	14.4	19.9	18.9	15.6	17.4	7.8	88.4	32.0	††0.098	Light snow; very little fall after 10 A.M.
8	8.7	22.9	18.8	16.8	26.3?	23.8	20.0	20.2	7.0	115.0	69.1	0.000	cn
9	5.8	31.7			32.0	30.9	19.4	27.3	6.0	105.7	40.0	0.000	l y—
10	19.8	31.3	22.5	24.5	31.6	30.0	26.4	32.6	17.4	82.3	56.0	0.000	y y—dc U.
11	14.5	24.8	20.1	19.8	25.1	24.4	21.7	31.3	14.8	110.7	41.3	0.000	Rrd
12	5.3	27.5	21.9	18.2	28.0	27.0	18.0	27.3	3.9	104.3	73.0	0.000	rl
13	19.7	47.3	(45.0)	37.3	47.6	46.9	29.4	29.4	15.9	104.0	48.4	0.000	y w— A Rain towards night.
14	49.0	41.5	31.9	40.8	42.0	41.0	43.8	49.6	28.8	‡114.3	62.7	0.519	yw y— rA 10.
15	25.0	35.7	31.4	30.7	36.2	35.5	35.0	44.0	24.9		43.0	0.000	y Rc
16	27.5	34.8	33.0	31.8	35.3	34.4	32.0	36.2	27.2	65.7	65.2	0.000	y A few snowflakes at times. rJ.
17	26.5	29.6	21.2	25.8	30.1	29.4	29.6	37.0	26.3	99.0	71.1	0.011	cRfn
18	12.5	29.6	23.9	22.0	30.0	29.7	20.6	30.0	12.5	106.0	75.7	0.000	rl
19	12.3	37.5	(35.0)	28.3	37.8	37.2	26.6	30.8	13.1	77.0	43.0	0.000	yl A little rain in the evening.
20	42.2	53.0	(41.3)	45.5	53.1	52.6	45.1	45.6	24.9	117.0	85.0	0.088	yw y—10 to N. SyW.
21	36.0	38.6	37.3	37.3	39.0	38.4	37.9	53.0	35.0	85.0	40.0	0.022	ym A little rain about 10 A.M.
22	36.2	38.2	35.9	36.8	39.0	38.0	38.0	38.4	35.9	(46.0)	(37.1)		Cloudy, with rain at times.
23	35.5	41.9	48.0	41.8	42.2	41.4	37.6	39.2	34.1	61.9	61.8	0.397	y Af Rn U.
24	32.0	30.4			30.7	30.0	32.2	50.9	31.0	77.4	45.9	0.000	Ryl RrU
25	19.8	25.4	24.0	23.1	25.7	25.2	24.4	32.3	19.9	46.0	28.5	0.000	yRd Light snow after 10 A.M.
26	16.5	28.0	23.3	22.6	28.7	27.8	22.9	26.8	16.1	(107.7)	(69.2)	††1.246	Rrl
27	25.0	33.5	23.9	27.5	34.0	33.0	30.0	30.8	22.9	108.3	76.0	0.000	Rrl
28	7.5	30.3	26.0	21.3	30.8	30.0	18.5	34.2	7.4	106.4	75.0	0.000	Rrl
Sums	539.5	833.3	651.2	641.5				880.4	457.5			4.424	
Means	19.3	29.8	25.0	24.7				31.44	16.34				

Rainfall for month 4.42 inches.
Mean temperature " " 24.7 Fahrenheit.
Maximum " " " 53.0 — " ; Feb. 21
Minimum " " " — 4.7 — " ; Feb. 2
" (reduced to standard of No. 4) — 4.3 — "
Highest reading of solar thermometer 119.1 — " ; Feb. 4

Auroras noticed.

Feb. 5, about 6½ P.M. Apparently narrow auroral arch.
L. Trowbridge records an aurora on Feb. 14 also.

Zodiacal light.

Feb. 5, about 6½ P.M. Zodiacal light faint or none, while Feb. 19, about 6½ P.M. it was unusually bright. Sky clear both evenings.
Feb. 7, 6¾ P.M. Zodiacal light distinct, of the same shape as last month.
Feb. 10, about 7¼ P.M. Zodiacal light distinct, reaching beyond Aries.
Feb. 11, 7 to 7¼ P.M. Zodiacal light distinct; northern edge along southern side of square of Pegasus; Mars ⅓ of the way from the equator to the north edge; vertex ⅓ of the way from β Arietis to the Pleiades.
Feb. 12, 7 P.M. Zodiacal light not so distinct as yesterday, somewhat farther south, not reaching to Aries; sometimes seeming forked in the line from β Arietis to Mars.
Feb. 14, 7 P.M. Northern edge of Zodiacal light within square of Pegasus; Mars about half way to southern edge; vertex near γ Arietis, in following field.
Feb. 16, 7 to 7¼ P.M. Zodiacal light moderately bright, somewhat variable, but on the whole long and narrow, bounded about as on Feb. 11.
Feb. 17, 7 P.M. Zodiacal light much as yesterday but indistinct; moon recently set; some moonlight and twilight near the horizon.
Feb. 18, 7 P.M. Apparently some Zodiacal light above the moon.

The velocity of the wind is merely estimated in miles per hour. See general remarks on observations of 1873.

Observations in parentheses ( ) were not made at the regular times. The actual times are given below.

Date	Regular times	Actual times
13	9 P.M.	10½ P.M.
19	9 P.M.	11 P.M.
20	9 P.M.	10 P.M.
22	4 P.M.	5 P.M.
26	4 P.M.	4⅚ P.M.

The observations below were made at times when the cloth about the wet bulb of the psychrometer was apparently dry. See similar notes in record for 1873.

Date	Time A.M.	Dry bulb	Wet bulb	No. 4
11	8½	17.4	16.0	16.0
18	8½	16.0	14.9	14.8
19	8½	19.8	18.3	18.1

The relative humidity for February 1874 has been computed with the corrections for errors of psychrometer given in the record for September 1873.

Measures of falls of snow (continued); the inches of snow weighed denote the length of a cylinder 1½ inches in diameter.

Feb. 4, 10 A.M.; depth in 10 places 11, 11½, 11½, 9¼, 9¾, 10½, 12, 13, 12½, 11; mean depth 11.2 inches; upper part much settled and packed by wind. Allowing 2 inches, as yesterday, for old snow, depth 9.2 inches, 11 inches weigh 4½ ounces. This snow taken from 3 places, and hence perhaps contained too large a proportion of the denser upper part of the snow. Computed rainfall 1.856 inches, less 1.187 inches yesterday; difference 0.669 inches.

Feb. 7, 10 A.M. New snow 2½ inches deep, pretty uniform. 14 inches weigh 0⅞ ounces; rainfall computed 0.098 inches.

Measures of falls of snow (continued).

Feb. 25, 4 P.M.; depth in 10 places 8, 6½, 8½, 8, 9, 8, 7½, 7½, 7¾, 7¾; mean depth 7.85 inches. 9 inches weigh 1½ ounces; hence rainfall for 1 inch of snow 0.087 inches; computed rainfall 0.684 inches.

Feb. 26, 10 A.M.; depth in 10 places 13, 10½, 14, 11, 15½, 11½, 11½, 13, 13½, 13; mean depth 12.125 inches. 14½ inches weigh 2⅜ ounces; hence rainfall for 1 inch of snow 0.103 inches; snow packed, settled, and drifted since yesterday afternoon; computed rainfall 1.246 inches for 24 hours in all.

Observers as in January, 1874.

†† Rainfall determined for Feb. 1 by measurement of snow Jan. 31; also determined by measurements of snow Feb. 3, 4, 7, 26.

* Original entry + 2.8; but on inquiry at the time, Bridgett said the mount — 2.8.
† Maximum Jan. 3 below 17.7; mercury rose above the shoot could fill, and ran away in the instrument enough to read off.
‡ Solar thermometer found out of place Feb. 14; reading probably not too high.
§ Anemometer and vane removed for repairs, and not used last half of February.
|| Wet bulb Feb. 17, 4 P.M. probably got somewhat too dry before the reading.
** Feb. 28, 10 A.M. Casella 3235 read carefully, and noticed to differ less than usual from the other thermometers.

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March 1874. Meteorological Record of

10 A.M.

Date	Barometer	Attached Thermometer	Baselli 3235	Baselli 12530	No. 4	Minimum after setting	Rychnometer Dry bulb	Rychnometer Wet bulb	Relative humidity Guyot's Tables	Wind	Clouds
1	30.154	61.9	29.0	28.4	28.5	*28.4	30.0	27.0	83	0 calm	1 Rs
2	30.144	67.0	41.3	40.0	40.2	40.2	42.4	36.6	61	0 SW	0 haze
3	30.160	63.6	46.0	45.0	45.3	45.0	47.1	39.4	51	2 SW	9 R Rs; thin
4	29.570	62.3	53.7	52.8	53.2	52.5	54.6	53.0	98	10 S	10 Rm; raining
5	30.170	59.1	31.0	30.1	30.3	30.0	31.6	25.4	49	10 NW	0
6	30.430	53.0	27.2	26.6	26.8	26.4	27.9	21.9	46	(4 NE)	(9 R; thin)
7	30.094	62.6	32.0	31.2	31.5	31.3	32.5	29.7	86	5 E	10 R Rm Fm
8	29.576	63.0	32.0	31.5	32.3	30.9	33.0	30.4	88	0 calm	10 R Rm
9	29.402	59.2	34.0	33.3	33.5	33.1	34.8	29.2	60	10 W	7 R Rm Rs
10	29.298	49.8	23.2	22.7	22.9	22.2	24.0	19.7	62	12 W	10 R Fm
11	29.426	59.4	22.8	22.2	22.6	22.0	23.8	19.4	60	11 NW	10 R
12	29.381	45.7	17.0	16.3	16.4	16.1	17.8	13.4	51	20 W	1 R Rs
13	29.530	53.7	16.9	16.5	16.3	16.0	17.5	13.2	52	18 W	2 R R
14	29.904	57.0	29.3	28.2	28.6	28.3	30.0	24.6	56	16 NW	1 R Fm
15	30.310	55.9	28.5	27.7	27.9	27.9	29.3			2 N	1 Rs
16	30.528	63.3	34.2	33.4	33.5	33.4	35.4	32.0	80	0 S	8 R; thin
17	30.431	68.7	37.0	36.0	36.5	36.0	37.7	35.3	91	5 SE	10 Rm; a little rain
18	30.186	66.4	53.7	52.7	53.4	52.0	54.6	53.0	98	4 S	10 Rm; a little fine rain
19	29.750	67.0	53.0	52.5	53.0	52.0	54.0	51.4	91	3 S	10 Rm
20	29.826	62.3	42.8	41.9	42.2	41.8	43.2	35.0	44	14 W	8 M R R
21	29.990	46.8	39.4	38.1	38.4	38.3	40.0	32.5	44	9 SW	2 R Rs
22	29.650	47.1	36.8	35.9	36.2	36.0	37.4	34.6	87	1 S	10 Rm; raining
23	29.729	56.0	29.8	28.9	29.1	28.9	30.4	23.5	40	19 W	4 M Fm
24	30.210	47.2	11.8	11.2	11.2	10.6	13.0	9.0	50	20 NW	0 Fm
25	30.223	58.9	33.8	32.8	33.1	32.8	34.6	27.0	41	14 SW	0 R Rs
26	29.922	66.3	49.9	48.9	49.6	48.1	50.6	40.8	41	4 SW	10 R Rs; thin
27	30.041	57.7	37.7	36.5	36.8	36.5	38.2	30.2	43	7 NW	7 R Rs Fm
28	29.964	62.8	32.9	32.1	33.0	32.0	33.9	32.0	96	5 NW	8 R Rm Fm
29	30.165	56.6	29.9	29.0	29.5	28.9	30.4	28.0	89	5 NW	10 Rm R
30	29.998	59.7	41.0	40.0	40.5	40.0	41.7	36.2	63	12 SW	7 Rm Fm
31	30.017	58.9	33.4	32.8	33.1	32.5	33.8	26.4	41	6 NW	10 Rm

4 P.M.

Date	Barometer	Attached Thermometer	Baselli 3235	Baselli 12530	No. 4	Minimum after setting	Rychnometer Dry bulb	Rychnometer Wet bulb	Relative humidity Guyot's Tables	Wind	Clouds
1	(29.994)	(64.9)	(43.3)	(42.3)	(42.6)		(43.8)	*35.4)	(42)	(0)	(1 Rs)
2	30.168	74.0	51.0	50.0	50.4		51.7	42.6	47	1 SW	0
3	30.058	69.0	54.7	53.9	54.4		55.3	49.2	68	2 SW	3 Rm R Rs
4	29.492	64.1	54.6	53.7	54.3		55.4	51.8	85	9 S	10 Rm Fm
5	30.232	62.4	39.1	38.6	38.6		39.8	30.0	31	9 W	0
6	30.330	63.6	35.7	35.0	35.4		36.0	29.3	51	6 E	10 R Fm
7	29.851	59.8	32.1	31.5	31.5		32.8	30.9	95	10 NE	10 R Rm; sleet
8	29.500	66.9	38.4	37.8	37.9		39.0	†37.6	100	10 NW	4 M Rs
9	29.384	62.3	32.2	31.9	32.0		32.8	27.2	58	13 SW	10 Rm
10	29.279	63.3	25.0	24.2	24.5		25.8	22.1	72	15 NW	10 R Rm Fm
11	29.403	53.2	16.0	15.8	15.8		17.0	15.0	91	9 NW	10 R; snowing
12	29.330	49.0	23.1	22.5	22.6		23.8	19.0	55	13 W	2 R Fm
13	29.530	55.2	22.9	22.0	22.1		23.5	18.8	56	12 NW	7 R Rs
14	29.933	59.4	36.0	35.2	35.4		36.6	31.6	67	12 NW	0 R
15	30.311	67.1	36.0	35.6	35.1		36.1	31.8	73	1 N	0
16	30.455	68.8	39.6	38.8	38.9		40.0	34.7	65	5 NE	10 R
17	30.351	66.7	39.4	38.6	38.8		40.8	37.9	93	3 E	10 Rm; a little rain
18	30.051	64.8	57.2	56.4	57.1		58.0	56.2	97	7 S	10 Rm; fine rain
19	29.558	71.3	57.0	56.5	56.9		57.9	54.2	85	6 S	10 Rm
20	29.858	63.0	43.3	42.7	42.9		43.8	32.3	19	15 W	1 R M Fm
21	29.798	53.0	51.0	50.0	50.6		51.7	41.0	37	15 SW	8 Rm Fm
22	29.651	51.3	42.1	41.4	41.6		42.9	32.2	24	5 NW	1 Rs
23	29.811	60.2	32.5	31.8	31.9		33.0	25.0	34	22 W	4 M Fm
24	30.170	57.5	23.6	22.9	22.9		24.0	18.2	41	17 W	3 M Fm
25	30.021	61.8	45.3	44.8	45.0		45.8	34.9	26	13 SW	5 R Rs Rm
26	29.732	66.7	55.0	54.2	55.0		55.9	45.7	45	13 SW	10 R Fm
27	30.015	65.4	43.0	42.0	42.3		43.6	32.2	19	6 SW	0 R Rs
28	29.911	64.2	38.9	38.2	38.5		39.6	32.3	47	5 N	10 Rm M Fm
29	30.117	62.9	34.0	33.3	33.4		34.9	27.3	41	9 W	1 Rs
30	29.831	66.8	48.1	47.3	47.7		48.8	37.8	31	14 SW	5 Rm M Fm
31	30.034	64.1	32.0	31.5	34.7		32.5	25.6	44	5 NE	10 Rm

	10 A.M.	4 P.M.
Barometer	928.179 31 29.941 −.080 29.861	926.099 31 29.874 −.091 29.783
Attached Thermometer	1818.9 31 58.7	1942.7 31 62.7
Baselli 3235	1061.0 31 34.2	1222.1 31 39.4
Baselli 12530	1085.2 31 33.4	1200.4 31 38.7
No. 4	1045.4 31 33.7	1207.8 31 39.0
Minimum after setting	1030.1 31 33.2	
Dry bulb	1085.2 31 35.0	1241.8 31 40.1
Relative humidity	1942 30 65	1739 31 56
Wind	248 31 8.0	282 31 9.1
Clouds	195 31 6.3	175 31 5.6

Rain gauge A not in use; emptied out March 2 about 10 A.M.

Measures of falls of snow as follows:

March 8, 10 A.M.: snow about $0\frac{3}{4}$ inches deep, melting fast; assuming this snow to be $\frac{1}{10}$ as dense as water, rainfall 0.075 inches. Probably as much as $\frac{3}{4}$ of an inch of snow fell after 4 P.M. March 7, when the rainfall by gauge C was 0.165 inches. The total rainfall therefore estimated at 0.240 inches. There is no means here of directly determining the rainfall due to melting snow. Gauge C cleaned out.

March 28, 8 A.M.; 10 measures of depth of snow as follows; 9, 8, 9, 9, 9, 9, 9, 9, 9, 9; mean 8.9 inches; 10 inches of

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Harvard College Observatory. March 1874.

Date	External Thermometer No. 4 7 A.M.	2 P.M.	9 P.M.	Mean	2 P.M. Casella 3235	2 P.M. Casella 12530	Maximum after setting	Extreme temperatures Maximum set at 10 A.M.	Minimum set at 10 A.M.	Maximum solar thermometer set at 4 P.M.	Solar thermometer after setting	Rainfall in inches. Gauge C examined at 10 A.M.	Remarks.
1	23.0		31.5				30.0	31.7	*16.0		(53.0)	0.000	rw
2	29.0	51.1	(44.8)	41.6	51.7	50.8	40.0	43.1	28.1	124.4	96.3	0.000	rw
3	30.5	55.0	46.8	44.1	54.9	54.1	44.8	51.0	30.8	112.0	97.0	0.000	yw Rr N
4	51.0	54.9	40.3	48.7	55.1	54.2	50.9	55.5	45.0	96.8	64.0	0.177	ynw Rr U. Rain early in the day.
5	25.2	39.1	25.7	31.0	39.9	38.9	31.3	54.2	25.1	111.0	85.0	0.033	rl
6	17.3	34.4	31.1	27.6	34.6	34.0	28.0	39.1	17.4	102.3	49.5	(0.000)	yl Rc
7	31.2	31.0	32.9	31.4	31.5	30.8	32.4	35.2	26.2	49.0	34.0	0.000	{ A little snow from 7 to 8 A.M. None snow, rain, and sleet, after 10 A.M. }
8	26.0	39.0	32.4	32.5	39.6	38.9	33.0	33.3	24.7	114.8	63.1	‖0.240	rl
9	28.3	33.6	24.6	28.8	34.0	33.2	34.0	39.9	27.7	97.8	40.2	0.000	Ry l Rr U
10	18.5	23.0	22.9	21.5	23.6	22.7	24.0	35.4	18.3	96.0	33.8	0.000	ynd A few snowflakes at times.
11	20.0	19.9	‡13.5	17.6	19.9	19.7	23.4	24.8	19.9	56.6	24.0	0.000	ynd A little snow.
12	11.8	22.7	12.0	15.5	23.2	22.6	18.3	24.0	11.3	95.0	59.0	0.000	Rend
13	10.2	21.2	18.8	16.7	21.9	21.0	18.0	23.0	9.4	98.3	69.3	0.000	Rend
14	19.5	36.2	22.6	26.1	36.8	36.0	29.0	28.8	15.9	108.0	77.6	0.000	rln
15	21.2		27.8				28.9	31.1	18.7	110.4	77.0	0.000	r Rw
16	21.3	41.0	32.6	31.6	41.7	40.7	33.2	37.2	21.1	121.1	59.7	0.000	y Rc
17	33.0	38.3	36.9	36.1	38.9	37.9	36.8	47.9	31.0	59.7	44.2	0.044	y Rc A little rain at times.
18	41.7	57.7	51.3	50.2	57.7	56.9	48.9	52.7	35.8	85.4	63.7	0.265	ynw A little rain.
19	46.2	60.6	54.0	53.6	60.6	59.9	51.4	57.4	44.8	97.7	60.2	0.022	ynw A few drops of rain.
20	40.0	44.4	(33.6)	39.3	44.9	43.9	42.7	60.4	39.8	103.0	81.3	0.000	Rrln
21	26.8	50.2	41.3	39.4	50.9	50.0	39.0	44.4	24.3	119.0	88.0	0.000	Rrln
22	37.2	43.0	34.2	38.1	43.8	42.8	37.1	51.3	35.1	111.0	86.0	(§0.000)	Mlttle sleet and rain early. rln N.
23	27.5	32.7	22.0	27.4	33.0	32.6	31.0	44.2	27.1	108.5	82.2	0.000	Rrln vll. A little snow following night.
24	6.2	20.2	21.0	15.8	21.0	20.0	13.0	33.0	6.0	93.8	70.0	0.011	rdn d
25	19.3	43.5	36.9	33.2	43.8	43.1	33.0	33.0	10.6	111.9	72.9	0.000	Rrwn
26	40.4	57.4			57.1	56.8	48.9	49.2	32.8	95.2	72.0	0.000	yw
27	32.3	40.8	34.1	35.7	41.4	40.7	37.4	57.2	31.8	114.8	88.7	0.000	Rrw
28	31.0	41.0	31.3	34.4	41.0	40.4	33.4	42.6	29.8	135.7	53.3	(‖0.698)	Snow previous night, ending about 8 A.M. { Sn N Ry N }
29	27.5	32.6	27.1	29.1	33.1	32.6	32.4	41.0	26.0	111.1	81.0	0.000	Rrl
30	27.2	46.9	37.9	37.3	47.2	46.5	40.3	40.6	20.2	117.2	92.2	0.000	Rynwn
31	34.3	33.6	25.1	30.1	34.0	33.5	33.5	47.8	28.8	92.0	36.0	0.000	ync
Sums	851.6	1145.3	949.0	914.6				1290.0	779.5			1.490	
Means	27.5	39.5	31.6	32.9				41.61	25.15				

Rainfall for month 1.49 inches.
Mean temperature " " 32.9 Fahrenheit
This is the mean of the three means for 7 A.M., 2 P.M., 9 P.M.
Maximum temperature for month 60.4 Fahrenheit; March 20.
Minimum " " 6.0 " ; " 24.
" (reduced to standard of No. 4) 6.5 " ; " 28.
Highest reading of solar thermometer 135.7 " ; " 28.

The velocity of the wind is merely estimated in miles per hour. See general remarks on observations of 1873.

Observations in parentheses ( ) were not made at the regular times. The actual times are given below.

Date	Regular times.	Actual times.
1	4 P.M.	5 P.M.
2	9 P.M.	10 P.M.
6	10 A.M.	10½ A.M.
20	9 P.M.	10 P.M.

Measures of falls of snow, continued.

this snow in cylinder 1⅞ inches in diameter weigh 1¼ ounces. Hence 0.078 inches water to 1 inch snow; rainfall 0.698 inches. The snow fell without wind and lay loosely, although it was damp.

* March 1. Original readings as follows; the readings above are conjectural emendations. Minimum 16.0; after setting 18.4; dry bulb at 4 P.M. 45.4.

† March 8. Wet bulb reading at 4 P.M. should perhaps be 27.6 instead of 37.6

‡ March 11. No. 4 not read at 9 P.M.; but Casella 3235 read 13.9 and Casella 12530 13.1; hence No. 4 must have been near 13.5

§ March 22. Gauge C examined at 4 P.M.; bottle weighed with water 15¾ ounces, which is the weight of the empty bottle; hence rainfall too small to measure.

‖ See snow measures for rainfall March 8 and 28.

Observers as in January 1874.

The observations below were made at times when the cloth about the wet bulb of the psychrometer was apparently dry. See similar notes in record for 1873.

Date	Time A.M.	Dry bulb	Wet bulb	No. 4
2	7 5/6	32.2	30.7	30.4
3	8 1/12	34.8	33.2	33.0
6	8 1/6	21.8	21.2	21.2
10	8	22.7	21.4	21.3
11	8 1/4	22.8	21.6	21.7
12	8 5/12	15.5	14.3	14.3
13	8 1/12	14.8	13.8	13.4
14	8	24.3	23.0	22.8
16	9 1/2	32.3	30.4	30.6
20	8 1/3	42.0	40.5	40.7
21	8 5/12	33.7	32.1	31.8
23	9	30.1	28.8	29.2
26	8 21/24	45.0	43.6	43.8

Mean excess of dry bulb over wet bulb and No. 4.
Dry bulb above 30; 7 observations.
Wet bulb 1.54; No. 4, 1.51.
Dry bulb below 30; 6 observations.
Wet bulb 1.10; No. 4 1.20

The relative humidity for March 1874 has been computed with the corrections for error of psychrometer given in the record for September 1873; but these corrections seem to be too large below 30.

Auroras noticed.

None this month.

L. Trouvelot records aurora on March 24.

Zodiacal light.

March 5, 7 P.M. No noticeable zodiacal light.

March 9, about 7 P.M. A little zodiacal light over clouds.

March 13, about 7½ P.M.; no zodiacal light seen; sky clear.

March 15, 7¾ P.M. Zodiacal light distinct; vertex near the Pleiades; northern edge passing between δ & β Arietis; Mars about the middle.

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April 1874. Meteorological Record of

10 A.M.

Date	Barometer	Attached Thermometer	Casella 3235	Casella 12580	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's Tables	Wind	Clouds
1	30.350	63.7	25.0	23.9	24.3	24.0	25.7	20.8	57	6 E	7 Pm Fm
2	30.090	62.0	*32.1	32.0	32.0	31.7	32.6	27.7	65	3 E	5 R M Fm
3	29.714	55.2	43.7	42.4	43.0	42.3	44.4	38.4	61	3 SW	10 Pm
4	29.820	64.2	29.0	28.5	29.0	28.2	29.8	27.3	88	2 N	10 R; a little snow
5	30.360	52.8	29.0	27.8	28.0	28.0	30.0	24.7	57	1 NW	0
6	29.807	64.9	43.7	42.8	43.0	43.0	44.6	40.9	80	8 W	2 R M Fm
7	30.050	65.0	36.2	35.2	35.7	35.2	36.7	34.8	96	1 SE	10 Pm; raining
8	30.156	65.3	44.3	43.6	44.1	43.4	45.3	41.0	76	2 NE	9 R haze
9	30.020	58.8	35.9	35.1	35.5	35.0	36.9	34.9	95	7 N	10 Pm
10	29.490	56.9	34.0	33.1	33.4	33.1	35.0	33.6	95	14 NE	10 Pm; fine rain
11	29.912	53.0	43.0	‡39.9	42.4	42.2	43.9	36.8	52	9 SW	5 Pm R Rs
12	30.244	51.4	24.8	23.8	24.0	23.9	24.6	19.4	51	10 NW	0
13	30.510	46.4	34.0	32.7	33.4	33.1	34.8	30.0	68	6 N	1 R Rs
14	30.248	61.4	50.8	49.4	50.1	50.0	51.8	41.7	41	13 SW	6 R Rs
15	29.892	70.7	62.0	61.2	62.2	61.2	63.2	53.5	64	10 SW	10 Pm M
16	29.978	61.9	44.0	43.4	43.8	43.0	44.8	36.8	47	13 W	10 R
17	30.316	53.6	38.5	37.6	37.9	37.5	38.9	31.6	49	7 NE	10 Pm
18	30.365	43.2	37.7	36.9	37.0	36.8	38.3	32.0	54	5 N	0
19	30.290	42.5	46.9	45.1	45.7	45.3	44.9	39.5	67	3 SW	6 M Fm
20	30.200	62.3	37.6	36.6	36.8	36.3	38.0	35.7	92	10 NE	10 Pm; raining
21	29.580	54.9	41.8	40.8	42.0	40.9	43.2	40.4	87	3 SW	10 Pm
22	30.012	56.2	46.2	45.0	45.4	45.1	46.8	37.1	36	7 SW	9 Pm Fm
23	30.030	60.4	38.8	37.8	38.0	37.8	39.1	36.0	85	5 NE	10 Pm
24	30.110	61.2	41.2	40.4	40.9	40.3	42.0	38.2	78	2 NW	5 M Fm Rs
25	30.280	60.2	38.0	37.1	37.4	37.1	38.5	32.1	54	8 E	10 Pm
26	29.180	59.7	35.1	34.2	34.8	34.1	35.9	33.7	93	20 N	10 Pm; raining
27	29.909	61.0	40.9	39.9	40.6	39.9	41.6	34.5	49	16 N	9 Pm M Fm Rs
28	30.058	56.4	44.6	43.8	44.6	43.6	45.0	36.3	41	6 NW	10 R; thin
29	29.671	48.0	36.0	35.4	35.6	35.2	37.0	35.3	98	12 NE	10 Pm; raining
30	29.492	41.0	38.1	37.5	37.8	37.2	39.0	32.0	49	30 W	10 R Pm M Fm

4 P.M.

Date	Barometer	Attached Thermometer	Casella 3235	Casella 12580	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's Tables	Wind	Clouds
1	30.262	66.8	27.2	26.1	26.3		27.5	23.0	63	7 E	1 Pm Rs
2	29.965	65.0	36.2	35.8	35.7		36.7	31.0	61	8 E	0 haze
3	29.728	62.0	42.0	41.2	41.5		42.6	31.5	24	17 W	1 R Rs
4	29.874	58.0	28.0	27.5	27.5		28.5 †			16 NW	4 Pm R M Fm
5											
6	29.958	66.9	46.4	45.5	45.9		46.9	38.1	43	13 W	0 R Rs
7	29.981	65.8	38.3	37.6	37.8		39.0	36.7	93	2 E	10 Pm
8	30.036	71.7	41.8	40.9	40.8		42.0	39.8	92	9 E	6 R Rm
9	30.086	66.0	41.4	40.4	40.7		42.0	37.8	74	8 NE	10 Pm Fm
10	29.664	57.9	35.7	34.3	35.9		37.0	32.7	72	12 N	9 Pm M Fm
11	29.754	62.5	45.7	44.7	45.2		46.1	40.8	68	15 SW	10 Pm; raining
12	30.251	52.6	35.0	34.0	34.2		35.2	§23.7	§ 7	11 NW	0 haze
13	30.448	62.0	43.7	42.6	43.0		44.0	32.5	19	6 SW	0 Rs
14	30.116	70.3	63.0	62.4	63.0		63.8	50.6	37	14 SW	6 R Rs
15	29.726	72.6	61.1	60.4	61.2		62.0	55.6	70	7 SW	10 Pm Fm
16	30.068	66.7	50.0	49.3	49.7		50.7	38.2	23	10 NW	3 Rs
17	30.200	50.3	32.0	31.1	31.5		32.6	30.4	93	5 NE	10 R; snowing
18	30.424	53.5	43.8	42.8	43.3		44.2	36.3	46	2 E	10 R Rm
19	(30.211)	(58.9)	(59.5)	(58.8)	(59.1)		(60.2)	(47.2)	(34)	(0 SW)	(2 Fm Rm Rs)
20	29.942	60.0	36.8	36.0	36.2		37.4	35.6	97	11 NE	10 Pm; raining
21	29.666	57.0	49.6	48.9	49.3		50.1	42.3	54	14 SW	9 Pm Fm
22	29.990	67.2	51.0	50.3	50.8		51.8	39.4	27	7 W	5 M Fm
23	29.914	67.2	37.1	36.7	36.7		37.6	35.4	93	10 E	10 Pm; rain & snow
24	30.108	69.2	51.0	50.5	51.0		51.8	41.1	37	6 SW	8 M Fm
25	30.120	60.7	33.0	32.2	32.4		33.5	32.0	100	12 NE	10 R; snowing
26	29.391	56.8	38.8	37.8	38.2		39.4	34.7	70	20 NW	10 R Pm Fm
27	29.952	66.4	48.8	47.5	48.1		49.3	38.7	34	15 NW	0
28	30.040	64.1	45.8	45.0	45.5		46.2	37.8	45	6 SE	10 Pm
29	29.521	47.7	36.4	35.8	36.2		37.2	35.6	99	6 NW	10 Pm; fine rain
30	29.508	44.6	41.8	40.8	41.3		42.3	34.0	41	25 SW	8 R Rs M Fm

Sums of columns, number of observations, means, and reduction of the barometer to the freezing point.

	10 A.M.	4 P.M.
Barometer	900.134	868.904
	30	29
	30.004	29.962
	−.076	−.089
	29.928	29.873
Attached Thermometer	1714.2	1790.4
	30	29
	57.1	61.7
Casella 3235	1172.9	1240.9
	30	29
	39.1	42.8
Casella 12580	1142.9	1216.9
	30	29
	38.1	42.0
No. 4	1158.4	1228.0
	30	29
	38.6	42.3
Minimum after setting	1144.4	
	30	
	38.1	
Dry bulb	1192.3	1257.6
	30	29
	39.7	43.4
Relative humidity	2025	1616
	30	28
	67	58
Wind	242	290
	30	29
	8.1	10.1
Clouds	224	182
	30	29
	7.5	6.3

Rain gauge A, on roof of Observatory north of clock room emptied without measurement April 7 about 10 A.M. as the water in it was due to snow; afterwards examined as stated below, although it leaks and is therefore of little use.

Date	Time	Ounces	Inches
8	10 A.M.	21½	0.185
9	10 A.M.	43¾	0.377
11	10 A.M.	137¼	1.183
13	10 A.M.	5	0.043
16	10 A.M.	1¾	0.015
18	4 P.M.	46	0.396
21	10 A.M.	116¾	1.006
24	10 A.M.	45⅜	0.391
27	10 A.M.	193⅜	1.665
29	10 A.M.	82⅛	0.707
30	10 A.M.	29½	0.254
Total		722	6.222

Dripping rains run down the outside of the pipe into the bottle; in heavy rains too little is caught.

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Harvard College Observatory. April 1874.

Date	External Thermometer No. 4 7 A.M.	2 P.M.	9 P.M.	Mean	2 P.M. Casella 3235	Casella 12530	Maximum after setting	Extreme temperatures. Maximum set at 10 A.M.	Minimum set at 10 A.M.	Maximum solar thermometer set at 4 P.M.	Solar thermometer after setting.	Rainfall in inches Gauge C examined at 10 A.M.	Remarks.
1	16.5	27.3	23.0	22.3	28.3	26.9	25.8	34.0	13.5	109.0	75.8	0.000	Rcd
2	25.0	35.2	31.9	31.7	38.8	38.4	32.5	33.0	27.9	111.0	86.9	0.000	Rcl
3	34.0	45.0	30.5	36.5	45.4	44.6	42.8	42.8	28.4	112.6	91.0	0.000	vn A few drops of rain & snowflakes about noon.
4	26.8	30.4	19.3	25.5	34.1	30.0	30.0	45.8	25.3	107.3	47.2	** 0.098	vn A little snow early.
5	19.5	37.3	29.2	28.7	38.2	37.3	30.0	30.7	14.1			0.000	zl y< Some snow & rain following night.
6	34.5	48.0	36.1	39.5	48.6	47.6	42.4	42.9	27.4	124.5	92.2	0.408	zdy N. N.
7	33.2	37.0	36.9	35.7	37.6	36.6	36.0	48.8	30.0	92.0	45.0	0.044	y Some sleet early; some rain later.
8	32.0	46.1			46.8	45.8	43.8	44.0	31.3	116.4	71.0	0.177	Rzz
9	33.0	40.0	36.1	36.4	39.9	39.5	35.7	48.3	32.9	81.0	51.6	0.386	yc A little rain early.
10	32.7	34.7	34.4	33.9	34.6	33.7	33.7	40.5	32.3	87.6	63.1	1.059	yc Snow, sleet, & rain previous night; forenoon somewhat rainy with a little snow.
11	31.5	47.5	34.3	37.8	47.9	‡ 45.0	42.3	42.4	27.8	114.5	47.2	0.044	Rcl y< Some showers.
12	20.3	29.1	(23.1)	24.2	30.0	28.9	28.6	44.0	19.9	100.0	75.0	0.033	rln
13	23.8	41.2	(33.5)	32.8	42.0	40.8	33.6	33.6	18.3	112.5	92.0	0.000	rRl
14	35.5	63.3	44.1	47.6	63.3	62.2	50.0	50.0	30.0	130.0	107.9	0.000	Ryw
15	51.3	65.0	55.6	57.3	64.4	64.0	60.0	64.3	48.2	120.0	63.0	0.000	ylr A little rain after 4 P.M.
16	42.0	47.8	40.0	43.3	48.2	47.2	44.2	67.6	41.7	116.0	96.5	0.022	l RyN RrN.
17	35.2	32.2	30.0	32.5	32.7	31.9	38.3	49.8	32.0	95.8	38.0	0.000	yc Snow at times after 10 A.M.
18	27.7	41.3	28.9	32.6	41.9	40.9	37.6	38.5	25.7	114.2	77.8	** 0.382	2Rw y< N E.
19	35.0	56.3	47.0	46.1	56.4	55.7	44.1	46.0	30.4	(125.0)	(94.0)	0.000	Rrw
20	39.0	36.4	35.6	37.0	36.8	36.0	37.3	58.9	36.0	95.8	38.0	0.210	yca Rain most of the day
21	34.3	51.6	41.3	42.4	52.0	51.0	40.6	‖ 40.6	33.6	127.7	67.8	0.750	ysw
22	36.0	49.3	41.8	42.4	49.5	48.8	45.2	52.8	32.0	123.5	100.8	0.000	Rrw
23	39.6	39.6	33.9	37.7	40.1	39.3	38.8	51.2	33.2	100.8	39.0	0.022	yc Snow afternoon & evening, with rain at first.
24	34.5	49.8	43.4	42.6	50.0	49.6	40.6	40.6	32.8	127.0	82.4	0.353	Ryw
25	36.6	36.0	32.4	35.0	36.9	36.2	38.0	50.8	34.7	82.8	35.9	0.000	yc Snow after 2 P.M.; still snowing at 9 P.M.
26	35.3	37.6	35.6	36.2	38.0	37.1	35.0	38.5	31.1	90.6	63.3	** 1.301	yc Morning rainy; snow equalls 5 & 7 P.M.
27	37.0	46.5	39.4	41.0	47.0	45.8	40.4	40.2	32.1	116.0	97.3	0.110	yl RrN
28	34.8	47.8			47.5	46.9	44.0	48.3	31.0	††		0.000	yc Snow and rain night following.
29	34.0	36.2	35.3	35.2	36.6	35.9	36.0	48.4	32.7			0.772	yc Some rain.
30	34.2	39.9	38.4	37.5	40.1	39.6	37.9	37.1	31.5			0.221	yln y< N 2U.
Sums	984.8	1278.4	991.0	1031.4				1355.0	897.8			6.392	
Means	32.8	42.6	35.4	36.8				45.17	29.93				

Rainfall for month 6.39 inches; as there was much mixed snow and rain, the true rainfall was probably larger than that measured.

Mean temperature for month 36.9 Fahrenheit; this is the mean of the 3 values for 7, 2, 9.
Maximum " for month 67.6 Fahrenheit; April 16.
Minimum " " " 13.5 " ; " 1.
" (reduced to standard of No. 4) 140.0 " ;
Highest reading of solar thermometer 130.0 " ; April 14.

†† Solar thermometer missing April 28 and later; probably carried off by children.

The velocity of the wind is merely estimated in miles per hour. See general remarks on Observations of 1873.

Observations in parentheses ( ) were not made at the regular times. The actual times are given below.

Date	Regular times.	Actual times.
12	9 P.M.	9½ P.M.
13	9 P.M.	9¼ P.M.
19	4 P.M.	4¾ P.M.

Measures of falls of snow as follows; the number of inches weighed gives the length of a cylinder 10 inches in diameter.

April 4, 10 A.M. Snow about 1¼ inches deep, pretty uniform; 10 inches weigh 1¼ ounces; hence 0.078 inches water to 1 inch snow; rainfall 0.098 inches; this result preferable to that (0.066 inches) by Gauge C.

April 18, 10 A.M. Snow measured in 10 places; 2½, 1½, 1½, 2, 1½, 1½, 1½, 1½, 1½, 1½; mean depth 1.65 inches; 10½ inches weigh 3⅞ ounces; hence 0.232 inches water to 1 inch snow; snow wet and melting; rainfall 0.382 inches; this result preferable to that (0.298 inches) by gauge C.

April 26 10 A.M. Snow measured in 10 places; 2¼, 3¼, 3½, 2¾, 3, 3, 3, 3, 3, 4; mean 3.075 inches; 11½ inches weigh 7¾ ounces; hence 0.423 inches water to 1 inch snow; snow wet with rain; rainfall 1.301 inches; this result preferable to that (1.026 inches) by gauge C.

Observers as in January 1874; but A. Searle made all observations usually made by W. Shulock from April 20 to April 29, both inclusive.

The observations below were made at times when the cloth about the wet bulb of the psychrometer was apparently dry. See similar notes in record for 1873.

Date	Time A.M.	Dry bulb	Wet bulb	No. 4
1	8⅕	23.2	22.0	21.9
2	8 3/8	29.5	28.0	28.2
3		38.2	36.8	37.0
6	8½	37.3	36.0	36.6
7	8	35.3	33.9	34.0
11	8⅓	38.0	36.3	36.2
13	8	29.0	27.4	27.7
23	8⅓	39.8	38.5	38.8
25	8⅓	38.8	37.3	37.7
28	8	40.4	39.0	39.0
30	8 7/12	36.8	35.2	35.5

By the 11 observations above, mean excess of dry bulb over wet bulb 1.45; over No. 4, 1.25

Relative humidity computed with corrections for error of psychrometer given in the record for September, 1873.

* Reading of Casella 3235 at 10 A.M. April 2 verified at time of observation.

† At 4 P.M. April 4 wet bulb nearly dry, reading 25.0; wetted again; at 4½ P.M. dry 28.0 wet 26.4

‡ April 11. Inside of case of Casella 12530 damp; hence reading low.

§ April 12, 4 P.M. Perhaps reading of wet bulb should be 28.7

‖ April 21, 10 A.M. Bulb of maximum thermometer wet.

** Rainfall by measures of snow April 4, 18, 26

Auroras noticed.

April 6, 10 P.M. Some aurora.

Auroras recorded by Lt. Trowbridge April 3, 4, 6, and 13.

Zodiacal light.

April 12. Zodiacal light noticed 8¼ to 8½ P.M.; vertex in Milky Way. Pleiades about the middle.

April 13, 8½ P.M. Zodiacal light.

Lightning

in the evening of April 20; no thunder.

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May 1874. Meteorological Record of

10 A.M.

Date	Barometer	Attached Thermometer	Casella 3235	Casella 12530	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's tables	Wind	Clouds
1	29.416	43.0	47.6	46.1	46.8	46.7	48.3	38.9	41	10 W	1 1/2 Rs M Fm
2	29.591	46.3	40.9	40.1	40.8	40.0	41.4	35.0	54	4 N	10 Rm Fm
3	29.983	53.5	53.2	52.3	53.9	52.4	54.0	42.7	36	3 NE	1 Rm
4	30.080	66.3	61.1	60.1	61.0	60.5	62.5	49.1	35	0 SW	9 R Rs; very thin
5	29.779	63.8	51.7	51.0	51.6	50.9	52.0	41.0	35	6 N	10 R
6	29.778	55.0	54.7	53.9	54.6	53.1	55.8	42.8	29	4 SE	3 haze Rs
7	29.980	58.8	45.4	44.5	45.1	44.6	46.5	38.8	51	5 NW	5 M Fm
8	29.969	53.0	52.8	51.4	52.4	51.6	53.7	44.0	45	6 SW	10 Rm M Fm
9	30.016	56.9	52.1	51.2	52.1	51.2	53.2	46.0	61	1 S	10 Rm
10	29.949	70.1	72.0	71.2	72.6	†	†	†	†	1 NE	10 Rm; thin
11	30.400	59.0	46.7	45.5	46.2	45.8	47.5	41.7	65	14 NE	10 Rm M Fm
12	30.465	57.9	56.8	55.4	56.3	56.0	57.8	44.8	32	5 SW	0 Rs haze
13	30.066	61.9	67.4	66.8	68.0	66.9	68.5	56.6	46	9 S	2 Rs haze
14	29.989	68.4	76.0	74.6	76.0	75.0	77.0	64.0	30	4 SW	2 M Rs haze
15	30.260	61.1	57.8	57.1	57.5	57.1	58.9	46.1	34	7 E	0 Rs haze
16	29.891	56.0	46.8	46.0	46.4	46.0	47.3	45.9	99	6 NE	10 Rm; raining
17	29.816	55.3	60.1	59.6	60.4	59.4	61.3	52.6	57	1 W	8 R Rs Rm
18	29.831	60.2	‡68.8	68.6	69.3	68.0	69.6	58.8	53	0 S	6 M Fm
19	29.825	58.2	60.5	59.6	60.4	59.9	62.0	51.9	51	9 S	4 M Fm R
20	29.999	56.4	64.6	63.2	64.5	63.8	65.7	53.4	43	4 S	1 Rs haze
21	29.856	57.8	52.8	52.0	52.7	52.0	53.5	50.9	91	7 S	10 Rm; raining
22	29.730	54.0	56.0	55.5	56.4	55.2	57.1	50.2	65	8 SW	10 Rm Fm M
23	30.020	53.8	59.9	59.1	59.8	59.1	60.7	46.8	30	15 NW	1 R Rs
24	30.040	60.6	66.2	65.9	67.4	65.6	67.0	55.1	46	0	10 Rm
25	29.900	62.0	61.0	60.2	61.2	60.2	62.2	56.8	76	10 S	10 Rm Fm
26	29.654	63.2	69.0	68.2	69.2	68.3	70.0	59.1	52	8 SW	2 M Fm R
27	30.042	61.3	64.4	63.5	64.8	63.9	65.4	55.0	51	3 N	8 Rm M Fm
28	30.092	63.8	73.4	72.2	73.7	72.8	74.9	65.1	60	2 SW	1 Rs haze
29	30.167	66.3	68.3	67.4	68.6	67.8	69.2	60.5	62	3 N	0 Rs haze
30	30.151	63.6	70.3	69.8	70.3	70.1	71.5	63.4	65	5 E	2 Rs haze
31	29.850	67.9	76.1	75.2	76.8	75.4	77.3	68.2	64	3 SE	4 Fm Rs

4 P.M.

Date	Barometer	Attached Thermometer	Casella 3235	Casella 12530	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's tables	Wind	Clouds
1	29.446	50.4	49.1	48.8	49.0		49.9	39.0	33	18 SW	9 Rm M Fm
2	29.692	58.7	43.1	42.8	43.0		43.6	34.4	35	9 NW	9 Rm M Fm
3	30.077	73.4	55.9	55.0	55.7		56.4	43.4	29	2 NW	0 haze in horizon
4	29.959	72.9	64.7	64.0	64.8		65.5	49.4	26	8 W	10 R M
5	29.664	66.4	47.0	46.1	46.5		47.6	37.8	37	6 NE	10 Rm R
6	29.752	66.0	56.9	56.1	56.5		57.5	43.3	25	9 SE	10 Rm Fm
7	29.992	62.8	45.9	44.9	45.2		46.2	37.8	45	4 NE	8 Rm M Fm
8	29.921	65.2	56.2	55.2	55.9		57.1	48.0	51	3 SW	9 Rm M Fm
9	29.749	62.5	63.8	62.9	63.9		64.7	52.4	42	10 S	10 Rm
10	30.029	70.1	50.3	49.6	49.9		53.9	47.2	64	1 NE	9 Rm
11	30.477	62.1	50.2	49.7	49.7		50.7	40.8	40	7 E	0
12	30.327	63.0	63.9	63.3	64.0		64.8	48.2	23	10 SW	0 haze
13	29.988	71.9	78.1	77.1	78.5		78.9	63.0	39	5 S	7 R Fm haze
14	30.000	72.4	78.0	77.1	78.1		78.7	59.0	27	8 NW	0 M Fm haze
15	30.192	65.8	58.1	57.2	57.7		58.8	47.9	44	9 E	2 Rs haze
16	29.727	56.0	50.2	49.8	50.2		51.4	49.4	95	6 N	10 Rm
17	29.811	66.5	71.0	70.0	70.6		71.9	58.7	44	0	2 Rm M
18	29.824	64.6	62.8	61.9	63.1		63.8	59.0	80	0 calm	10 Rm; raining
19	29.862	65.4	61.6	61.0	61.8		62.2	51.0	45	6 S	7 M Fm
20	29.948	64.8	66.0	65.2	66.2		67.1	63.9	40	7 SE	10 Rm
21	29.720	57.1	50.9	50.1	50.3		51.1	49.6	98	8 E	10 Rm; raining
22	29.806	58.6	58.6	57.8	58.4		59.5	50.0	52	8 NW	10 Rm Fm
23	29.986	63.4	68.0	67.5	68.4		69.0	52.8	30	7 SW	10 R M Fm
24	30.006	66.6	70.3	70.1	71.3		71.1	58.8	47	0	9 Rm
25	29.673	62.8	58.7	58.0	58.6		59.6	58.0	98	6 SE	10 Rm; raining
26	29.727	71.0	66.1	65.9	66.7		67.0	56.0	50	15 NW	7 R M Fm
27	30.023	68.8	65.6	65.0	65.5		66.1	55.0	49	5 SE	1 Rm Fm haze
28	30.054	74.8	75.1	75.1	76.0		75.8	63.0	48	10 S	2 Rm Fm Rm Rs
29	30.186	72.1	65.9	64.7	65.7		66.9	59.4	66	8 E	0 haze
30	30.090	69.2	64.8	63.8	64.0		64.7	59.2	76	8 E	3 M Fm haze
31	29.674	76.7	81.9	80.9	82.4		82.4	70.5	55	6 W	9 Rm

Sums of columns, number of observations, means, and reduction of barometer to the freezing point.

	10 A.M.	4 P.M.
Barometer	928.585	927.382
	31	31
	29.954	29.916
	−.082	−.100
	29.872	29.816
Attached Thermometer	1835.4	2042.0
	31	31
	59.2	65.9
Casella 3235	1854.4	1898.2
	31	31
	59.8	61.2
Casella 12530	1827.2	1876.6
	31	31
	58.9	60.5
No. 4	1856.8	1897.6
	31	31
	59.9	61.2
Minimum after setting	1759.3	
	30	
	58.6	
	On adding estimate for May 19, mean 59.1	
Dry bulb	1811.8	1923.9
	30	31
	60.4	62.1
	On adding estimate for May 10, mean 60.8	
Relative humidity	1559	1533
	30	31
	52	49
Wind	163	209
	31	31
	5.3	6.7
Clouds	170	203
	31	31
	5.5	6.5

Rain gauge A, on roof of shed north of Clock Room. See record for April 1874.

Date	Time	Quart	Inches
16	10 A.M.	12 1/4	0.106
16	10 A.M.	75	0.646
18	11 1/2 A.M.	44 1/4	0.381
19	10 A.M.	23 3/4	0.205
22	10 3/4 A.M.	148 1/4	1.278
23	10 A.M.	4 1/8	0.036
25	10 A.M.	1 1/2	0.013
26	10 A.M.	92 5/8	0.798
Total		401 3/4	3.463

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Harvard College Observatory. May 1874.

Date	External Thermometer No. 4 7 A.M.	2 P.M.	9 P.M.	Mean	2 P.M. Casella 3235	Casella 2530	Maximum after setting	Extreme temperatures Minimum set at 10 A.M.	Minimum set at 10 A.M.	Maximum solar thermometer set at 4 P.M.	Solar thermometer after setting	Rainfall in inches Gauge C. measured at 10 A.M.	Remarks.
1	39.3	48.0			48.0	47.7	47.0	47.0	34.2			*0.000	yl Rw
2	38.0	43.3	37.3	39.5	43.6	42.9	40.6	49.0	37.5			0.000	yl Rw A few snowflakes.
3	43.7	56.7	46.3	48.9	57.0	56.2	52.0	52.9	35.2			0.000	rw
4	45.3	65.6	53.1	54.7	65.3	64.8	59.8	60.8	37.9			0.000	w y<
5	45.3	46.2	41.4	44.3	46.9	46.0	51.1	65.4	43.2			0.000	yl
6	42.2	57.4	(47.3)	49.0	57.7	56.5	54.3	54.8	36.0			0.000	Rw y< A little rain following night.
7	36.2	46.0	42.0	41.4	46.8	45.9	45.4	57.7	35.0			0.110	Ryl
8	42.4	53.9	46.6	47.6	54.0	52.7	52.0	52.1	34.0			0.000	Ryl A few drops of rain about 6½ P.M.
9	46.2	56.4	43.3	48.6	56.7	55.3	51.5	56.0	40.0			0.000	yw
10	68.7		44.5						50.9			0.000	w Ry n→A10 w> Ryl N.
11	44.0	48.3	41.3	44.5	49.0	48.0	46.8	76.2	42.2			0.000	yl y>A10 rl N.
12	40.3	(66.1)	46.6	51.0	(66.1)	(65.2)	55.8	56.2	33.4			0.000	2 Rw
13	51.8	78.1	67.2	65.7	77.9	76.8	66.0	67.2	42.8			0.000	Rh t
14	63.5	(80.0)	63.3	68.9	(80.0)	(78.9)	74.1	79.4	56.2			0.000	Rha
15	53.8	57.1	53.7	54.9	57.6	56.9	57.9	79.4	45.6			0.000	Rrl y<
16	44.0	50.5	49.0	47.8	50.7	50.0	46.8	59.0	43.8			0.662	yRc
17	52.0	69.5	60.1	60.5	70.0	68.9	58.1	58.9	46.0			0.408	yRl y< w< rw N.
18	56.2	64.3	54.2	58.2	64.1	63.1	67.9	70.2	47.5			0.000	tw y< Some rain after 2 P.M.
19	51.5	62.9	52.8	55.7	62.8	62.0	60.0	71.8	48.2			0.210	rw
20	49.0	62.1	58.0	56.4	62.1	61.9	63.7	64.1	42.2			0.000	rw y<
21	51.7	53.9	47.9	51.2	53.9	53.1	52.2	66.2	50.8			0.177	yRc Rain most of the day; (9½ P.M.)
22	47.0	56.4	52.0	51.8	56.7	55.7	55.0	55.8	44.5			1.125	yRl Some rain about 2 P.M.
23	51.2	67.5	59.9	58.9	67.6	66.6	59.0	59.8	43.1			0.044	rw y<
24	54.5	72.5	66.8	62.9	71.6	70.9	63.8	67.8	49.3			0.000	yw
25	56.8	60.0	60.4	59.1	60.0	59.1	60.2	71.0	55.6			0.011	ywa Afternoon rainy, with some thunder and lightning
26	60.5	69.4	54.7	61.5	69.1	68.4	66.7	67.9	55.8			0.750	w Rc
27	54.6	70.2	58.0	60.9	70.0	68.9	64.0	71.7	48.5			0.000	yw y>
28	58.5	75.0	62.3	65.3	75.0	74.0	71.6	73.0	50.6			0.000	
29	64.3	69.1	56.3	63.2	69.1	67.9	68.2	76.2	55.3			0.000	
30	58.8	68.4	62.6	63.3	68.7	67.2	70.0	70.5	53.0			0.000	
31	67.7	84.3	70.0	74.0	83.8	83.0	75.7	76.0	59.0			0.000	w Ry
Sums	1579.0	1859.1	1592.7	1609.7				1934.0	1397.3			3.497	
Means	50.9	62.0	53.1	55.5				64.47	45.07				

Rainfall for month 3.50 inches

Mean temperature for month (mean of 3 means for 7, 2, 9) 55.3 Fahrenheit.

Maximum temperature for month 79.4 " ; May 14 and 15.

Minimum " " " 33.4 " ; May 12.

— " — (reduced to standard of No. 4) 34.2

The velocity of the wind is merely estimated in miles per hour. See general remarks on observations of 1873.

Observations in parenthesis ( ) were not made at the regular times. The actual times are given below.

Date	Regular times	Actual times.
6	9 P.M.	9 2/11 P.M.
12	2 P.M.	2 3/4 P.M.
14	2 P.M.	2 5/12 P.M.

The observations below were made at times when the cloth about the wet bulb of the psychrometer was apparently dry. See similar notes in record for 1873.

Date	Time A.M.	Dry bulb	Wet bulb	No. 4
1	9½	46.8	45.6	45.6
2	8¾	39.1	37.9	38.2
4	8	53.5	51.9	51.6
4	9½	60.6	59.2	59.3
26	9½	69.9	68.8	68.8
27	7½	58.8	57.3	58.0

The relative humidity has been computed after applying the corrections for error of psychrometer given in the record for September, 1873.

Auroras noticed.

None this month.

No auroras recorded by L. Trouvelot.

*Wire fence put round gauge C May 1, to keep out dogs. The space inclosed is about square, measuring about 3½ feet on each side. The wires are fastened to iron rods set up at each corner of the square. The fence may perhaps affect the indications of the gauge, but will affect them less than the dogs did before.

† May 19, 10 A.M. About this time the wind changed from S. or W. to E., and the temperature fell quickly. Probably the minimum and the psychrometer were read some minutes after No. 2, 3, 4. The minimum after setting was recorded 66.3; the dry bulb 65.0, and the wet bulb 49.7

‡ May 18, 10 A.M. Low reading of No. 2 (Casella 3235) noticed at time of observation; cause not discovered.

Observers as in January 1874.

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June 1874. Meteorological Record of

10 A.M.

Date	Barometer	Attached Thermometer	Casella 3235	Casella 12530	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's Tables	Wind	Clouds
1	29.567	67.7	*58.8	*61.1	*59.9	*60.0	*59.7	55.4	82	14 NE	10 Pm Fm
2	30.117	58.0	55.9	55.1	56.0	55.2	56.5	47.2	50	3 NE	10 Pm M Fm
3	30.266	59.6	66.3	65.4	66.7	65.9	67.4	56.0	48	5 SW	3 Rs Fm
4	30.118	59.9	61.0	61.1	62.4	61.3	63.2	59.5	86	8 SE	10 Pm
5	30.082	61.9	67.7	66.6	68.6	67.0	69.5	64.0	78	5 SE	6 Pm Fm
6	30.033	70.0	78.0	77.3	79.1	77.6	79.4	72.4	73	0 S	8 Pm Fm Rm
7	29.957	65.4	66.2	65.0	66.7	65.9	66.6	62.3	83	0 NW	10 Pm
8	29.676	72.7	78.8	77.6	79.2	78.2	79.8	69.7	61	10 SW	6 Pr Fm
9	29.851	68.2	71.6	70.5	72.1	71.1	72.3	61.2	53	2 NW	4 Pr R Rs
10	29.956	67.6	70.1	69.5	70.7	69.5	71.1	61.6	58	11 NE	5 Pm Rs Rm Fm
11	30.185	62.8	61.0	60.0	60.8	60.6	62.1	51.8	49	9 E	3 Pm Rm Rs
12	29.834	60.6	58.0	57.8	59.0	58.0	59.8	57.0	91	0 SW	10 Pm
13	29.927	61.5	63.1	62.8	63.7	62.6	64.1	53.2	48	12 W	5 M Fm
14	30.222	60.4	70.0	68.8	70.2	69.0	71.0	58.8	47	0 SW	2 Rm Rs
15	30.268	66.4	72.1	71.5	72.7	71.8	73.2	61.8	45	3 W	1 R Rs
16	30.236	70.4	75.9	75.5	77.1	75.2	76.8	63.6	48	7 S	10 Pm
17	29.859	66.7	"	"	"	"	"	"	"	6 SW	10 Pm
18	29.660	66.6	69.3	68.4	69.5	68.8	70.3	61.6	54	13 NW	9 Pm Fm
19	29.979	63.9	58.1	57.5	58.2	57.4	59.0	54.7	81	4 N	10 Pm; fine rain
20	30.182	57.4	51.0	50.0	50.7	50.1	51.8	49.1	89	9 N	10 Pm; raining
21	30.128	59.8	58.0	57.1	57.9	57.2	58.9	55.1	84	6 NE	10 Pm; fine rain
22	30.086	65.4	73.7	72.8	73.9	73.0	74.8	67.7	71	0 W	3 R Rs
23	29.874	73.0	82.0	81.2	82.7	81.5	83.1	73.1	63	4 SW	4 Pr Rm Rs
24	29.856	69.2	68.5	67.8	68.6	68.0	69.3	53.8	41	11 W	0 Rs
25	29.908	64.8	69.1	68.7	69.9	68.8	70.3	56.5	39	6 SW	10 Pm Fm
26	29.752	68.7	70.0	69.7	71.1	69.4	71.1	59.8	51	2 SW	10 Pm Fm
27	29.906	67.9	73.4	73.2	75.0	73.0	74.6	63.9	55	4 S	5 Pm Fm
28	(29.756)	(74.6)	(82.7)	(81.7)	(83.0)	(82.2)	(84.0)	(71.8)	(55)	(10 W)	(6 Rs)
29	29.726	79.0	87.5	86.9	88.4	87.2	88.8	79.0	66	1 S	1 Pr Rs
30	29.846	74.4	79.8	79.0	80.6	79.2	80.6	65.4	42	11 W	7 Pm Rs Rm

4 P.M.

Date	Barometer	Attached Thermometer	Casella 3235	Casella 12530	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's Tables	Wind	Clouds
1	29.662	66.3	59.0	58.1	58.7		59.9	54.0	72	0 E	9 Pm Fm
2	30.138	64.0	64.0	63.0	64.2		64.9	53.3	45	3 E	2 M Fm
3	30.264	65.6	64.0	63.7	64.6		64.5	51.0	36	10 S	10 Pm
4	30.076	63.0	60.9	60.2	60.5		61.2	57.6	86	4 NE	10 Pm
5	30.000	72.8	77.7	76.9	78.5		78.3	70.0	68	6 S	4 Pm Fm
6	30.035	71.0	60.1	59.3	60.0		61.1	59.6	98	6 N	10 Pm; raining
7	29.880	70.9	68.8	66.8	69.1		69.3	63.6	77	1 SW	10 Pm
8	29.684	78.0	78.9	77.3	79.2		79.4	63.7	40	12 NW	4 Pr Rm R
9	29.781	76.1	74.0	72.7	74.0		74.6	63.5	54	6 E	4 Pm Fm haze
10	30.027	73.3	74.0	73.3	74.2		74.8	58.2	33	11 E	1 Pr M Fm
11	30.115	63.4	57.8	57.1	57.7		58.1	52.2	71	8 E	10 Pm; raining
12	29.776	63.9	61.1	60.5	61.0		62.0	58.2	85	0 E	10 Pm
13	29.974	65.8	65.0	64.9	65.9		66.0	55.1	49	12 W	9 Pm M Fm
14	30.161	69.1	75.0	74.0	75.6		75.8	59.2	34	5 W	7 Fm
15	30.232	75.0	77.8	77.0	78.2		78.5	61.2	34	0 calm	5 Rs M Fm
16	30.150	74.3	74.0	73.0	74.6		75.0	63.5	53	8 SE	10 Pm
17	29.703	71.2	"	"	"		"	"	"	10 SW	10 Pm
18	29.744	70.0	71.4	70.3	71.4		72.0	62.0	57	20 NW	9 Pm M Fm
19	30.064	61.5	53.0	52.4	52.7		53.7	50.8	818	8 NE	10 Pm; raining
20	30.176	58.9	56.9	55.9	56.7		58.0	52.5	73	11 NE	10 Pm
21	30.089	63.8	67.3	66.8	68.0		68.3	61.4	70	5 NE	8 Pm Fm
22	30.026	75.5	82.2	81.4	82.9		83.2	69.0	48	2 SW	9 Pm M Fm R Rs
23	29.780	83.0	84.7	84.0	85.6		85.3	74.1	59	5 SW	10 Pm
24	(29.904)	(71.6)	(68.9)	(68.0)	(68.8)		(69.7)	(54.5)	(34)	(0 calm)	(10 Pm Pr Rs R)
25	29.790	71.1	75.8	75.0	76.0		76.6	58.8	31	13 W	5 Pm Pr Rs
26	29.730	75.6	73.8	72.8	73.8		74.0	62.6	53	0 calm	10 Pm; raining
27	29.870	76.0	75.3	74.8	75.6		76.0	64.7	54	6 E	3 M Fm haze
28	(29.749)	(78.6)	(85.0)	(83.8)	(85.0)		(85.6)	(73.8)	(58)	(11 W)	(2 Rs Fm)
29	29.673	85.5	82.4	81.7	82.5		82.4	72.9	64	4 S	1 Pr Rs
30	29.864	82.0	81.2	80.8	82.0		81.9	66.7	44	11 W	5 Pm Rs Rm

Sums of columns, number of observations, means, and reduction of barometer to the freezing point

	10 A.M.	4 P.M.
Barometer	898.813	898.117
	30	30
	29.960	29.937
	−.101	−.115
	29.859	29.822
Attached Thermometer	1984.5	2136.8
	30	30
	66.2	71.2
Casella 32.35	1997.6	2050.0
	29	29
	68.9	70.7
Casella 12.530	1979.6	2025.5
	29	29
	68.3	69.8
No. 4	2014.4	2057.0
	29	29
	69.5	70.9
Minimum after setting	1974.7	
	29	
	68.1	
Dry bulb	2029.1	2070.1
	29	29
	70.0	71.4
Relative humidity	1791	1668
	29	29
	62	58
Wind	176	198
	30	30
	5.9	6.6
Clouds	192	217
	30	30
	6.4	7.2

Rain gauge A on roof of chest fronts of Clock Room; see record for April, 1874.

Date	Time	Ounces	Inches
2	10½ A.M.	86 3/4	0.748
5	11½ A.M.	21	0.181
6	7¼ P.M.	146 3/8	1.262
8	4 P.M.	41 1/4	0.358
15	11½ A.M.	59 3/4	0.515
18	10 A.M.	51 1/4	0.442
20	4 P.M.	18 3/4	0.162
22	4¾ P.M.	2 3/8	0.020
25	9½ A.M.	2 1/8	0.018
26	10 A.M.	1	0.009
27	10 A.M.	5 1/2	0.047
Total		436 3/8	3.762

1872phae.proj..3825

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Harvard College Observatory. June 1874.

Date	External Thermometer No. 4 7 A.M.	2 P.M.	9 P.M.	Mean	2 P.M. Casella 3235	Casella 12530	Maximum after setting	Extreme temperatures. Maximum set at 10 A.M.	Minimum set at 10 A.M.			Rainfall and snowfall Gauge C examined at 10 A.M.	Remarks.
1	60.8	61.8	55.4	59.3	†60.2	60.8	*58.8	84.2	60.0			0.397	y S. {Some rain previous night; heavy shower after 10 A.M.}
2	50.2	62.8	53.0	55.3	62.5	61.8	54.7	60.0	46.7			0.375	Ryl
3	55.8	69.6	54.0	59.5	68.9	68.2	65.8	66.1	48.1			0.000	Ryl
4	56.0	60.9	58.1	58.3	61.0	60.1	60.4	70.6	51.6			0.177	y Rl A little rain.
5	59.0	75.9	68.2	67.7	75.0	74.2	67.0	67.2	56.0			0.011	y w
6	67.7	73.0	54.5	65.1	72.6	71.8	77.0	77.8	64.0			0.000	Heavy thunder-shower beginning about 3¼ P.M.
7	66.2	73.6	62.0	67.3	73.4	71.3	64.0	73.3	‡			1.346	
8	70.0	83.0	69.6	74.2	81.8	80.0	76.1	77.6	60.6			0.353	
9	65.2	80.8	69.3	71.8	80.8	79.0	71.4	82.1	58.2			0.000	r Rh
10	58.7	75.1	60.0	64.6	75.0	74.2	69.8	80.4	55.0			0.000	r Rl
11	58.5	58.0	52.3	56.3	58.6	58.1	61.4	74.9	51.1			0.000	yc Afternoon rainy after about 3½.
12	54.0	64.7			§62.8	63.1	58.0	63.4	51.6			0.430	y Rc Slight thunder-shower 7½ P.M.
13	57.7	66.2	(53.9)	59.3	66.0	65.0	63.0	64.7	52.2			0.088	
14	58.5	75.4	62.9	65.6	74.8	74.0	66.9	69.4	47.7			0.000	rw
15	63.2	78.0			78.0	77.0	71.8	75.2	54.9			0.000	
16	69.7	79.9			79.0	78.6	74.5	78.0	62.0			0.000	
17		‖			‖	‖						0.397	yw Showers.
18		70.4			70.3	69.4	68.8	79.0	61.0			0.055	yw
19	60.0	53.7	51.5	55.1	54.1	53.1	57.9	71.0	57.1			0.022	yo Some rain
20	49.0	55.3	53.0	52.4	55.5	54.7	51.0	58.8	48.8			**0.110	y
21	54.8	60.5	60.9	58.7	60.8	59.9	57.4	57.4	50.1			0.022	yw
22	63.6	(81.8)	73.9	73.1	(81.1)	(80.6)	72.3	73.3	53.9			0.000	Rh & A few drops of rain about 9½ P.M.
23	72.8	87.7	71.9	77.5	86.8	86.2	80.5	82.1	66.8			0.000	A little rain
24	67.3	(71.0)	61.0	66.4	(71.0)	(70.1)	68.2	87.5	65.4			0.022	rw Ry Rl.
25	62.3	74.4	68.5	68.4	74.2	73.7	69.0	72.3	53.0			0.000	wh A few drops of rain in the evening.
26	65.5	77.0	62.8	68.4	76.2	75.5	70.0	76.3	62.1			0.011	yw A little rain towards night.
27	64.2	75.5	63.0	67.6	75.5	74.2	72.9	77.0	57.2			0.055	
28	65.5	85.0	77.0	75.8	85.0	83.8	(82.4)	(82.8)	(56.8)			(0.000)	
29	76.3	84.0	69.5	76.6	83.9	83.0	86.6	87.3	69.0			0.000	
30	73.4	83.0	69.8	75.4	82.8	81.7	79.0	93.0	63.2			0.000	
Sums	1745.9	2098.0	1556.0	1639.7				2162.7	1584.1			3.871	Rainfall for month 3.87 inches.
Means	62.4	72.3	62.2	65.6				74.58	56.58				Mean temperature " " 65.6 Fahrenheit. Maximum " " " 93.0 " ; June 30. Minimum " " " 46.7 " ; June 2. " (reduced to standard of No. 4) 48.8

The velocity of the wind is merely estimated in miles per hour. See general remarks on Observations of 1873.

Observations in parentheses ( ) were not made at the regular times. The actual times are given below.

Date	Regular times	Actual times.
13	9 P.M.	10 P.M.
22	2 P.M.	2½ P.M.
24	2 P.M., 4 P.M.	12 M., 6¼ P.M.
28	10 A.M., 4 P.M.	12 M., 2 P.M.

At 8¼ A.M. June 11, the cloth about the wet bulb being apparently dry, the readings were as follows:
Dry bulb 61.6; Wet bulb 60.1;
No. 4 61.0

The relative humidity for June has been computed after applying the corrections for error of psychrometer given in the record for September, 1873.

Auroras noticed.

None this month.

No auroras recorded by L. Trowbot.

* Northeast wind suddenly came up June 1 at 10 A.M., and temperature fell off; hence the unprotected bulbs read lower than those in cases.

† The cause of the low reading of Casella 3235 at 2 P.M. June 1 was perhaps dampness on the scale of the instrument.

‡ The minimum reading on June 7 according to the original record is 67.4, which is probably an error for 47.4

§ June 12, 2 P.M. Bulb of Casella 3235 wet.

‖ June 17. Thermometers inaccessible by reason of paint.

** June 20. Funnel of gauge C not in place; the amount measured is that caught by the copper cylinder of the gauge, which is 5 inches in diameter, so that the measure was reduced to inches in the usual way, but it is probably not accurate.

During the month, a hygrometer owned by a resident of Albany was occasionally compared with the psychrometer. The comparisons will be found in the original record; but as the hygrometer was a poor instrument of its kind, they are not copied here.

Observers as in January 1874 until June 15, after which W. Winlock was replaced by H. Searle on Sundays at 10, 2, and 4, and by N. Lane at other times.

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10 A.M.

Date	Barometer	Attached Thermometer	Casella 3235	Casella 12530	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's Tables	Wind	Clouds
1	30.086	70.4	75.6	74.8	75.9	75.0	76.4	62.9	46	5 NW	1 R Rs
2	30.060	69.8	77.0	76.0	77.3	76.5	78.0	67.0	56	5 S	4 R Rs Fm
3	29.982	70.1	74.0	73.0	75.0	73.3	75.7	67.7	68	5 W	5 Pm M Fm
4	30.049	69.1	71.6	71.8	72.8	71.7	72.4	64.0	64	4 S	9 Pm Fm haze
5	29.876	66.7	55.2	54.9	55.5	54.6	56.2	54.4	96	16 N	10 Pm; raining
6	30.162	65.4	67.9	67.2	68.2	67.4	68.7	60.8	65	3 E	8 Pm M Fm
7	30.069	65.8	73.0	72.0	73.5	72.2	74.2	66.0	66	7 S	1 Fm
8	29.831	71.3	75.1	74.8	76.1	74.8	76.2	70.2	77	6 SW	9 Pm
9	29.902	75.2	81.7	80.5	81.9	81.0	82.8	71.0	56	3 W	4 Pm Fm
10	29.977	74.5	76.0	75.2	76.2	75.5	76.7	69.4	71	8 NE	6 Pm Fm haze
11	29.999	76.5	81.9	81.0	82.9	81.4	83.0	75.6	68	4 SW	9 Pm M Fm
12	30.156	71.4	65.2	64.8	65.8	64.9	66.4	64.3	95	8 NE	10 Pm
13	30.160	65.5	64.1	63.8	64.8	64.2	65.9	62.9	90	4 NE	10 Pm
14	30.184	69.3	75.2	74.7	75.6	74.8	76.2	64.6	54	5 W	0 haze
15	30.054	74.3	84.6	83.4	85.0	84.0	85.7	75.4	63	4 S	5 R Rs haze
16	29.818	78.4	84.6	83.9	85.3	84.0	85.3	74.7	61	7 SW	1 Pm Fm
17	30.006	71.1	73.5	72.6	73.7	72.9	74.5	64.4	58	9 N	3 M Fm
18											
19	30.284	71.8	80.3	79.2	81.0	79.8	81.8	71.4	60	0 SW	1 haze
20	30.120	72.7	76.0	75.0	76.4	75.1	76.9	70.0	73	10 S	10 Pm
21	30.038	72.2	68.5	67.9	68.9	67.8	69.4	64.6	81	9 NW	10 Pm
22	30.078	68.4	73.8	72.9	73.9	73.2	74.7	61.4	45	5 N	0
23	30.124	69.1	74.5	73.7	74.6	74.0	75.6	63.8	52	4 NE	0
24	30.138	70.8	75.1	74.9	76.2	74.7	76.1	65.9	58	8 SW	8 Pm Fm Rs
25	30.206	70.8	75.8	75.1	76.2	75.3	76.8	66.4	58	4 S	2 M Fm
26	30.196	70.5	77.6	76.6	77.8	77.0	78.7	68.1	58	8 S	5 M Fm
27	29.997	71.2	78.0	77.2	78.6	77.7	79.2	70.0	64	11 S	0 Fm Rs haze
28	30.031	71.7	77.6	76.8	77.8	77.0	78.6	68.7	61	5 SW	0 Rs
29	29.949	73.6	77.7	77.5	78.7	77.2	78.4	70.8	70	8 S	10 Pm Fm; some rain
30	29.870	70.0	71.9	71.2	72.1	71.3	72.7	62.4	56	10 NW	5 M Fm
31	29.999	68.8	76.2	75.8	76.5	75.8	77.5	65.2	51	7 S	5 Pm Fm R R Rs

4 P.M.

Date	Barometer	Attached Thermometer	Casella 3235	Casella 12530	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's Tables	Wind	Clouds
1	30.063	77.8	81.6	80.8	82.3		82.3	66.3	41	6 W	4 R Rs
2	30.023	75.6	75.8	75.4	76.6		76.5	62.0	42	9 S	9 Pm M Fm
3	29.940	76.0	77.2	77.1	78.2		77.9	62.7	41	8 W	3 M Fm
4	29.973	73.2	67.9	67.0	67.4		68.3	62.6	75	9 NE	9 Pm M Fm
5	29.959	65.0	54.0	53.6	54.0		55.0	53.2	96	12 NE	10 Pm; raining
6	30.174	69.5	65.5	65.0	65.3		65.9	58.8	68	9 E	8 Pm Rm Fm
7	29.952	76.8	80.6	79.8	80.9		81.1	71.1	61	13 S	2 R Rs
8	29.786	79.8	85.2	84.5	85.8		86.0	74.8	60	12 S	5 M Fm Rs
9	29.936	80.4	83.0	82.0	83.7		84.0	73.2	60	1 SW	10 Pm Fm
10	29.916	78.6	77.7	76.2	77.5		78.0	71.2	73	10 E	2 Fm Rs haze
11	30.028	75.8	72.3	71.5	72.4		73.6	71.0	91	0 calm	10 Pm M Fm; raining
12	30.180	69.0	56.8	55.8	57.1		58.0	55.7	93	7 NE	10 Pm
13	30.068	74.5	80.1	79.8	80.8		81.1	73.8	72	14 SW	5 Pm M Fm
14	(30.151)	(77.3)	(82.8)	(81.9)	(83.1)		(83.4)	(70.2)	(51)	(3 SW)	(1 Rs haze)
15	29.980	83.1	88.3	87.6	88.9		89.1	75.0	52	6 SW	2 R Rs haze
16	29.845	79.8	73.9	73.1	74.6		75.4	71.3	85	2 S	10 Pm Fm; a few drops of rain
17	30.022	77.0	78.0	77.2	78.2		78.6	64.5	45	6 NW	7 Pm M Fm
18											
19	30.255	82.5	83.8	83.0	84.4		84.4	72.2	54	10 SW	5 R Rs M Fm
20	30.038	79.6	80.6	79.9	81.1		81.3	72.3	65	6 SW	10 Pm
21	29.988	75.5	75.6	74.6	75.8		76.4	65.3	55	5 NW	6 Rm R M Rs Fm
22	30.067	75.8	77.1	76.3	77.4		77.8	61.0	35	4 NE	4 M Fm
23	30.109	76.4	75.0	74.2	75.0		75.4	59.2	35	7 E	2 M Fm haze
24	30.120	77.8	80.0	79.3	80.7		80.8	66.9	47	0 S	9 M Pm Fm
25	30.184	77.5	79.0	78.3	79.4		79.7	64.1	41	7 S	1 Fm
26	30.114	78.5	78.8	78.0	79.0		79.3	68.3	57	12 S	1 M Fm
27	29.986	80.0	82.6	82.2	83.4		82.8	71.7	58	12 S	5 M Fm R Rs
28	29.984	79.7	83.2	82.8	84.0		84.0	71.0	52	12 S	5 M Fm
29	29.905	74.5	74.8	74.0	75.1		75.6	70.6	81	13 S	10 Pm Fm
30	29.922	75.3	77.9	77.0	78.0		78.7	62.6	38	11 NW	4 M Fm
31	29.904	78.2	78.8	78.6	79.6		79.5	66.0	48	15 SW	9 Pm M Fm R R

Sums of columns number of observations, means, and reduction of barometer to the freezing point.

	10 A.M.	4 P.M.
Barometer	901.401	900.572
	30	30
	30.047	30.019
	−.114	−.129
	29.933	29.890
Attached Thermometer	2126.4	2300.5
	30	30
	70.9	76.7
Casella 3235	2239.2	2307.9
	30	30
	74.6	76.9
Casella 12530	2218.2	2286.5
	30	30
	73.9	76.2
No. 4	2254.2	2319.7
	30	30
	75.1	77.3
Minimum after setting	2224.1	
	30	
	74.1	
Dry bulb	2270.7	2329.9
	30	30
	75.7	77.7
Relative humidity	1941	1772
	30	30
	65	59
Wind	192	241
	30	30
	6.4	8.0
Clouds	151	178
	30	30
	5.0	5.9

Rain gauge A, on roof of shed north of Clock Room.

Date	Time	Ounces	Inches
3	10½ A.M.	6½	0.056
5	10 A.M.	42¼	0.364
6	10 A.M.	43	0.371
9	11½ A.M.	2½	0.022
10	9½ A.M.	1	0.009
11	11½ A.M.	9½	0.082
13	1 P.M.	83¼	0.718
17	10 A.M.	37¼	0.321
24	9½ A.M.	11½	0.097
30	10 A.M.	50¼	0.433
Total		287	2.473

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Harvard College Observatory. July 1874.

Date	External Thermometer No. 4 7 A.M.	2 P.M.	9 P.M.	Mean	2 P.M. Castella 32.35	Castella 12.530	Maximum after setting	Extreme temperatures Maximum set at 10 A.M.	Minimum set at 10 A.M.			Rainfall in inches Range C. Examined at 10 A.M.	Remarks.
1	66.5	81.3	70.0	72.6	81.0	80.0	75.0	82.4	58.0			0.000	rRh RyU
2	65.7	79.7	65.5	70.3	78.5	78.5	76.4	81.8	58.3			0.000	Rh y— Rain after 7 P.M.
3	65.3	79.4	64.0	69.3	78.8	78.1	73.6	80.6	61.3			0.055	Rhr
4	60.5	77.2	64.5	67.4	76.1	76.0	71.5	79.6	58.2			0.000	yw A little rain at times. Rainy after 7 P.M.
5	57.0	55.4	58.5	57.0	55.0	54.6	55.5	78.0	54.3			0.364	Rain most of the day, not heavy.
6	60.5	65.0	62.5	62.7	66.6	64.9	67.3	67.4	52.9			0.375	yw
7	61.2	80.6	70.0	70.6	80.4	79.5	71.8	72.6	55.8			0.000	Rrh RyU
8	67.8	85.0	77.2	76.7	85.0	83.8	74.6	80.4	66.0			0.022	Rrh A little rain early. RyU.
9	74.7	85.8	79.2	79.9	84.2	84.0	81.0	85.1	69.1			0.000	
10	71.3	80.3	74.5	75.4	80.1	79.1	75.9	85.2	68.3			0.011	
11	74.7	70.8	71.8	72.4	70.1	69.7	80.6	81.4	69.2			0.088	
12	67.5	59.5	56.0	61.0	59.3	58.8	65.0	84.4	64.3			0.618	Rain before 10 A.M.; a little rain later.
13	59.0	78.5	71.5	69.7	78.0	77.0	64.0	65.0	54.7			0.121	yw RyU.
14	67.0	(82.6)	74.8	74.8	(82.7)	(81.7)	74.6	80.0	62.2			0.000	rw
15		89.2	77.8		88.8	88.0	83.0	84.0	65.6			0.000	
16	76.5	70.6	71.0	72.7	70.8	69.5	83.8	88.6	71.3			0.000	Thunder shower about 1½ P.M.
17	67.3	78.9	72.0	72.7	78.9	77.7	73.2	89.1	61.8			0.331	rw
18	65.8		70.0										
19	67.5	85.4	69.7	74.2	84.6	84.2	79.0	80.1	58.9			0.000	
20	70.2	(82.5)	72.0	74.9	(81.7)	(81.2)	75.2	85.0	64.3			0.000	
21	70.0	75.9	67.0	71.0	75.0	74.6	68.0	83.2	67.2			0.110	
22	63.2	78.0	67.3	69.5	78.0	76.8	73.2	76.0	56.3			0.000	rw
23	62.5	77.1	68.2	69.3	77.2	76.3	73.9	77.7	56.4			0.000	rw
24	67.2	83.5	69.5	73.4	82.8	82.1	74.5	77.9	61.6			0.000	rw
25	66.5	80.4	68.9	71.9	80.0	79.1	75.2	83.0	59.1			0.000	rw
26	70.0	81.6	68.8	73.5	81.3	80.0	76.5	80.3	61.7			0.000	rw
27	69.0	83.7	69.9	74.2	83.0	82.3	77.7	81.2	63.5			0.000	rw
28	67.7	85.7	70.0	74.5	85.0	84.3	77.0	83.6	60.2			0.000	rRh
29	73.0	72.4			72.0	71.3	77.2	84.7	65.4			0.000	yw Rainy 10 A.M. to 1 P.M.
30	63.8	77.6	68.2	69.9	78.0	76.8	71.0	78.1	61.4			0.441	Krw
31	65.2	81.1	70.5	72.3	80.5	80.1	75.4	78.4	57.0			0.000	Ryw A few drops of rain after noon.
Sums	2004.1	2344.7	2080.8	1993.8				2414.8	1843.3			2.536	Rainfall for month 2.54 inches
Means	66.8	78.2	69.4	71.2				80.49	61.44				Mean temperature " " 71.5 Fahrenheit by the mean of the 3 means for 7, 2, & 9.

Maximum " " " 89.1 Fahrenheit; July 17, 16.
Minimum " " " 52.9 "
" (reduced to standard of No. 4) 53.9

The velocity of the wind is merely estimated in miles per hour. See general remarks on observations of 1873.

Observations in parentheses ( ) were not made at the regular times. The actual times are given below.

Date	Regular times	Actual times.
14	2 P.M., 4 P.M.	2 1/6 P.M., 4 1/4 P.M.
20	2 P.M.	2 1/6 P.M.

The observations below were made at times when the cloth about the wet bulb of the psychrometer was apparently dry. See similar notes in the record for 1873.

Date	Time A.M.	Dry bulb	Wet bulb	No. 4
10	9½	77.0	76.1	76.3
14	8½	71.7	70.6	71.8
15	9½	83.0	82.2	82.7
23	9¼	72.9	72.0	72.2
25	9½	76.0	75.0	75.3
27	9½	78.2	77.2	77.7

On July 10, at 8¼ P.M., the readings were as follows; dry bulb 80.2; wet bulb 79.4; No. 4 79.8

The relative humidity for July has been computed after applying the corrections for error of psychrometer given in the record for September, 1873.

Auroras noticed.

None this month.

No auroras recorded by L. Trouvelot.

Observers as in the last half of June, 1874;
7 A.M. observation by Bridget Henry;
9 P.M. " " N. Lane;
other observations " A. Searle.

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August 1874. Meteorological Record of

10 A.M.

Date	Barometer	Attached Thermometer	Casella 3235	Casella 12530	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Gaugé's tables	Wind	Clouds
1	29.667	72.1	81.1	79.7	81.4	80.1	82.3	70.8	54	3 W	9 Pm Fm
2	29.689	70.0	73.6	72.8	73.8	73.0	74.7	64.8	59	3 NW	1 Pm M Fm
3	29.905	65.0	63.3	62.4	63.3	62.6	64.3	53.0	46	18 NW	0 M Fm
4	30.102	62.5	66.6	65.4	66.3	65.9	67.6	55.3	45	7 NW	0 Fm
5	30.149	65.9	70.5	69.8	70.8	70.1	71.6	59.5	48	8 E	6 Pr Rs
6	30.098	66.0	70.0	69.1	70.2	69.7	71.1	61.2	57	5 SE	0 Rs Fm haze
7	30.086	66.4	74.2	72.1	74.8	74.0	76.0	66.9	63	7 S	7 Pr Rs
8	29.857	69.8	68.1	67.9	68.9	68.0	69.9	67.0	91	20 SE	10 Pm; fine rain
9	29.808	69.0	65.4	64.7	65.4	64.7	66.9	64.7	94	6 NE	10 Pm
10	29.860	70.0	74.9	*71.9	74.6	74.3	76.0	67.0	63	2 NW	0 Rs haze
11	30.081	72.5	79.9	78.8	79.8	79.1	81.0	71.0	61	2 NW	0 haze
12	30.106	72.0	73.0	72.0	73.7	72.3	74.3	68.8	78	1 S	10 Pm
13	29.951	73.8	73.0	72.3	73.3	72.2	74.0	70.9	89	4 S	10 Pm
14	30.067	67.3	59.5	58.7	59.8	59.1	60.8	58.2	91	16 N	10 Pm; fine rain
15	30.016	64.7	63.2	62.1	63.3	62.7	64.5	60.0	82	8 N	10 Pm
16	30.196	65.5	71.2	70.0	71.2	70.7	72.4	61.4	50	6 NE	0 Rs
17	30.294	65.9	68.5	67.5	68.4	68.0	69.7	61.2	63	6 E	0 haze
18	30.032	65.9	72.1	70.8	72.0	71.9	73.4	63.9	60	4 S	0 haze
19	30.260	68.1	69.5	68.5	69.7	68.8	70.5	60.6	57	4 E	5 haze
20	30.010	70.0	75.9	75.0	76.3	75.1	77.0	68.6	66	7 SW	9 Pm Fm haze
21	30.018	73.3	75.9	75.0	76.3	75.0	77.0	68.3	65	6 N	10 Pm haze
22	29.931	67.6	57.8	56.9	57.2	57.0	59.0	56.2	91	11 N	10 Pm
23	30.094	62.2	62.4	61.3	62.5	62.1	63.2	53.0	51	2 SE	9 Pr Rs
24	30.002	62.2	64.8	63.2	64.3	64.0	65.0	56.3	60	6 NW	1 Pr R Rs M Fm
25	30.227	60.9	65.9	64.8	66.0	65.3	67.2	58.1	59	12 E	9 Pr Rs
26	30.318	61.0	64.6	63.6	64.1	63.8	65.8	55.3	51	13 NE	0 Rs Fm
27	30.250	59.4	63.9	62.9	63.8	63.2	65.2	57.5	65	7 N	9 Pr Rs haze
28	30.180	60.0	66.7	65.7	66.2	66.0	68.0	57.1	51	3 N	4 Pr Rs
29	30.051	63.6	70.0	69.0	69.6	69.4	71.3	59.6	49	1 SE	0 R haze
30	29.948	64.5	69.5	68.2	69.4	68.6	70.8	62.8	65	3 SW	7 Rs M Fm
31	30.000	65.2	70.8	69.8	70.8	70.1	72.0	64.0	66	0 NE	2 Pr R Rs

4 P.M.

Date	Barometer	Attached Thermometer	Casella 3235	Casella 12530	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Gaugé's tables	Wind	Clouds
1	29.625	76.0	76.0	75.2	76.3		76.8	66.0	56	8 S	10 Pm
2	29.733	76.3	64.7	63.4	65.9		64.9	62.7	94	8 NE	10 Pm; a little rain
3	29.950	69.7	68.4	67.8	68.9		69.2	56.0	42	10 NW	8 Pm M Fm
4	30.110	69.8	72.4	71.8	72.9		73.3	59.0	41	9 NW	10 Pm M Fm
5	30.131	73.0	70.7	69.9	70.8		71.4	59.2	47	11 E	4 Pm Rs
6	30.069	72.8	72.4	71.3	72.6		73.1	62.3	54	3 SE	3 Pm M Fm R
7	30.062	76.7	77.9	76.7	78.5		78.7	65.1	47	18 SW	8 Pr R Rs M Fm
8	29.842	71.5	70.9	70.1	71.3		71.8	67.9	85	8 S	10 Pm; raining
9	29.768	70.4	66.9	65.7	68.0		68.9	65.0	85	14 NE	10 Pm
10	29.880	79.0	80.0	79.0	80.0		80.7	69.4	57	0 W	4 M Fm haze
11	30.091	79.7	83.3	82.6	83.6		84.2	70.2	50	4 SE	0 M haze
12	30.008	80.6	81.5	81.0	82.0		82.2	73.1	65	9 SW	2 Pm Fm
13	29.950	74.9	75.8	75.1	76.3		76.5	73.1	88	2 S	10 Pm Fm
14	30.070	66.6	59.5	58.1	59.4		60.5	57.8	91	7 N	10 Pm
15	30.015	68.7	69.5	68.4	69.6		69.8	62.7	70	9 E	4 Pm M Fm
16	30.217	70.7	70.1	68.8	70.2		71.0	57.2	40	6 E	3 Pr R Rs
17	30.225	72.2	71.1	70.0	71.3		72.0	60.0	49	6 E	0 Rs Fm haze
18	29.977	75.3	82.0	80.2	82.0		82.5	71.6	59	6 SW	5 haze Rs
19	30.220	74.1	75.8	75.0	76.3		76.6	65.7	56	5 SE	6 haze Rs Fm
20	29.941	75.7	80.7	80.0	81.2		81.5	73.5	69	2 SW	8 Pm Fm haze
21	29.959	76.7	73.2	72.8	73.6		73.5	65.4	65	7 E	10 Pm haze
22	29.956	70.7	68.4	67.0	68.4		69.3	62.0	69	7 SE	6 Pm M Fm Rs
23	30.034	67.0	65.9	65.0	66.0		66.2	57.2	59	6 E	10 Pm
24	(30.050)	(68.0)	(66.0)	(64.7)	(65.9)		(66.9)	(55.1)	(46)	(10 E)	(1 Pr R Rs M Fm)
25	30.247	67.9	65.9	64.9	65.8		66.4	57.6	60	13 E	7 Pr Rs R M
26	(30.300)	(68.0)	(65.2)	(64.5)	(65.1)		(66.0)	(56.2)	(55)	(8 NE)	(1 Rs M Fm)
27	30.214	67.0	66.9	66.1	66.8		67.7	55.4	45	10 E	5 Pr Rs R
28	30.149	69.5	70.9	70.1	71.1		72.0	57.9	40	3 NE	3 Pr Rs Pm Fm
29	30.007	73.3	73.4	72.9	73.5		74.0	59.1	39	12 E	9 Pr Pm Fm haze
30	29.924	72.4	75.8	75.0	76.0		76.7	64.9	53	2 SW	1 Pr M Fm Rs
31	29.976	75.3	79.7	78.8	80.0		80.5	67.2	49	0 calm	8 Pr Rs Pm Fm

Sums of columns, number of observations, means and reduction of barometer to the freezing point.

	10 A.M.	4 P.M.
Barometer	931.253	930.697
	31	31
	30.040	30.022
	−.102	−.118
	29.938	29.904
Attached Thermometer	2062.3	2249.5
	31	31
	66.5	72.6
Casella 3235	2145.8	2240.9
	31	31
	69.2	72.3
Casella 12530	2111.9	2211.9
	31	31
	68.1	71.4
No. 4	2147.2	2249.3
	31	31
	69.3	72.6
Minimum after setting	2126.8	
	31	
	68.6	
Dry bulb	2182.5	2264.8
	31	31
	70.4	73.1
Relative humidity	1993	1825
	31	31
	64	59
Wind	201	223
	31	31
	6.5	7.2
Clouds	158	186
	31	31
	5.1	6.0

Rain gauge A, on roof of shed north of Clock Room.

Date	Time	Ounces	Inches
3	10 A.M.	8¼	0.071
7	10 A.M.	104	0.896
8	9½ A.M.	136¾	1.179
9	8 A.M.	189¼	1.631
10	10 A.M.	14½	0.125
14	10 A.M.	158½	1.366
15	10 A.M.	19	0.164
22	8 A.M.	147½	1.364
22	4 P.M.	10½	
Total		788¼	6.796

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Harvard College Observatory. August 1874.

Date	External Thermometer No. 4 7 A.M.	2 P.M.	9 P.M.	Mean	2 P.M. Casella 3235	Casella 12530	Maximum after setting	Extreme temperatures Maximum set at 10 A.M.	Minimum set at 10 A.M.			†Rainfall in inches. Gauge C examined at 10 A.M.	Remarks.
1	69.5	75.6	70.0	71.7	75.6	74.4	79.9	81.6	63.3			0.000	yw
2	65.2	79.9	62.3	69.1	80.0	78.4	73.5	82.3	60.3			0.033	vw Shower about 3½ P.M.; a little rain later.
3		68.3	58.9		68.0	67.5	63.0	79.3	53.5			0.066	vl
4	56.0	72.5	65.5	64.7	72.0	71.4	66.2	69.1	49.8			0.000	v Rl
5	59.5	73.5	60.5	64.5	73.6	72.4	70.1	72.6	53.2			0.000	Rl
6	60.3	(68.8)	58.0	62.4	(69.0)	(68.2)	69.8	74.2	54.5			0.000	A few drops of rain about noon. {Thunder-shower with some hail, 6½ to 7 P.M.
7	61.2	(80.4)	69.9	70.5	(80.0)	(78.1)	71.3	74.0	55.6			0.938	Rwn
8	66.2	75.4	68.0	69.9	73.5	73.8	67.2	80.0	65.0			1.081	ywa Rain previous night; at times in the day.
9	62.5	67.6	63.8	64.6	66.7	65.7	65.0	73.7	60.7			1.721	yRl Some rain at times.
10	65.0	82.4	70.5	72.6	82.4	80.9	74.0	74.0	62.3			0.077	Rrh.
11	67.5	84.9	71.2	74.5	84.9	84.0	78.7	82.5	63.8			0.000	Rrh
12	67.2	83.5	72.4	74.4	83.1	82.3	72.6	84.4	65.0			0.000	yw Rr N
13	70.7	75.0	65.2	70.3	74.5	73.9	72.7	82.9	68.1			0.055	yw Some rain; thunder-shower 6½ P.M.
14	59.8	60.2	57.8	59.3	60.2	58.8	59.6	76.0	58.8			1.368	yh Some rain, most in the evening.
15	60.5	71.0	(60.3)	63.9	71.0	*69.1	62.1	62.0	57.2			0.088	yRw y— N
16	60.3	69.9	61.2	63.8	70.0	68.7	70.7	71.0	55.8			0.000	Rrw
17	57.8	71.8	63.0	64.2	71.7	70.3	68.1	72.8	51.4			0.000	rw
18	57.5	81.8	71.5	70.3	81.7	80.0	71.5	71.9	52.8			0.000	z Rh
19	62.0	75.1	67.8	68.3	74.7	74.0	69.0	81.8	60.0			0.000	z Rh
20	67.8	80.5	76.5	74.9	79.6	79.0	75.0	75.5	64.2			0.000	zu
21	70.5	75.6	(65.8)	70.6	75.5	75.0	75.0	80.8	67.0			0.000	y Ru Thunder-showers in the evening.
22	58.0	(68.7)	59.0	61.9	(68.4)	(*65.2)	57.6	77.4	67.0			1.390	yl y— A10 Rr N.
23	52.2	67.2	57.9	59.1	67.1	65.9	62.2	68.7	46.7			0.000	yl zU.
24	52.5	66.6	56.6	58.6	66.9	65.4	64.2	68.6	48.8			0.000	rl
25	51.8	68.0	55.9	58.6	68.0	66.8	65.6	67.7	49.0			0.000	Ryl zU.
26	50.5	65.0	56.0	57.2	65.4	64.8	64.0	68.0	46.3			0.000	rl
27	49.5	69.4	57.2	58.7	69.4	68.5	63.3	66.2	47.1			0.000	Ryl zU.
28	50.0	(71.5)	61.2	60.9	(71.4)	(70.7)	66.0	69.0	48.0			0.000	Rrw yU.
29	56.7	76.0	62.4	65.0	75.9	75.0	69.2	71.2	52.9			0.000	Ryw
30	57.3	76.8	63.2	65.8	76.4	76.0	68.7	75.3	51.7			0.000	Rrw
31	57.8	78.7	68.3	68.3	78.8	77.8	70.0	76.3	52.5			0.000	Ryw zU
Sums	1803.3	2284.6	1977.8	1978.6				2310.8	1744.5			6.817	Rainfall for month 6.82 inches
Means	60.1	73.6	63.8	66.0				74.54	56.27				Mean temperature " " (mean of the 3 means for 7, 2, and 9) 65.8 Fahrenheit

Maximum temperature for month 84.4 " ; Aug. 12.
Minimum " " " 46.3 " ; Aug. 26.
" (reduced to standard of No. 4) 47.0

The velocity of the wind is merely estimated in miles per hour. See general remarks on observations of 1873.

Observations in parentheses ( ) were not made at the regular times. The actual times are given below.

Date	Regular times	Actual times
6	2 P.M.	2½ P.M.
7	2 P.M.	2¾ P.M.
15	9 P.M.	9⅓ P.M.
21	9 P.M.	9½ P.M.
22	2 P.M.	2½ P.M.
24	4 P.M.	4½ P.M.
26	4 P.M.	4⅔ P.M.
28	2 P.M.	2¼ P.M.

At 9¾ A.M. August 3, the cloth about the wet bulb of the hygrometer being apparently dry, the following readings were made.
Dry bulb, 64.4; Wet bulb, 63.1; No. 4, 63.3

The relative humidity for August has been computed after applying the corrections for error of psychrometer given in the record for September, 1873.

Auroras noticed.

None this month.

No auroras recorded by L. Trouvelot.

*Inside of case of Casella 12530 was somewhat wet August 10, 10 A.M.; August 15 and 22, 2 P.M.

Observers as in July, 1874, to August 21 inclusive; 9 P.M. observation afterwards by A. Searle.

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September 1874. Meteorological Record of

10 A.M.

Date	Barometer	Attached Thermometer	Casella 3235	Casella 12530	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Glaisher's tables	Wind	Clouds
1	30.088	66.8	68.6	67.6	68.4	67.9	69.6	57.8	49	9 NW	0 Rs
2	30.047	64.8	68.9	67.9	68.6	68.0	69.8	54.8	47	17 NW	0
3	29.957	67.9	75.8	74.8	75.9	75.0	77.0	66.0	56	2 SW	9 Pm Sm Rs haze
4	30.322	62.6	59.5	58.7	59.3	59.0	60.7	52.0	57	10 NE	4 Sm
5	30.370	60.2	62.7	61.7	62.2	62.1	64.0	57.0	67	1 W	1 Rs Sm
6	30.194	66.2	69.8	69.0	70.4	69.1	70.9	64.8	74	5 SW	10 Pm
7	29.968	66.9	70.3	69.3	70.2	69.5	71.2	60.2	52	7 W	0 Sm Rs
8	29.989	64.6	68.8	67.8	68.6	68.1	69.8	60.9	62	4 SW	2 M Sm
9	30.178	66.2	68.6	67.2	68.5	67.8	69.8	62.5	68	5 SW	5 Pm M Sm
10	29.981	65.3	70.8	69.8	70.6	70.1	71.8	62.8	61	6 SW	0 haze
11	29.965	72.0	77.6	76.6	77.4	76.8	78.4	61.9	37	4 W	4 haze Sm
12	30.182	67.5	65.2	64.2	65.2	64.6	66.1	55.9	53	13 E	9 Pm M Sm
13	30.359	59.2	63.0	61.8	62.3	62.2	64.4	56.8	65	4 W	1 Sm haze
14	30.356	63.2	66.2	65.2	66.7	65.5	67.6	61.0	72	4 SW	10 Pm Sm
15	30.248	65.7	69.0	67.6	68.6	68.0	70.2	62.3	65	6 S	5 Pm Sm haze
16	30.195	69.0	68.9	67.9	69.0	67.9	69.9	66.5	88	0 calm	10 Pm
17	30.326	67.4	61.5	60.6	61.6	60.8	62.6	60.1	92	7 NE	10 Pm; a little fine rain
18	30.349	64.4	61.1	60.2	61.0	60.4	62.2	58.6	86	11 E	10 Pm; a little rain
19	30.343	63.4	59.4	59.0	59.9	59.1	61.1	58.2	90	12 NE	10 Pm
20	30.090	62.2	60.5	59.7	60.5	59.7	61.7	59.5	94	5 N	10 Pm mist
21	30.100	63.5	60.4	59.7	60.2	59.7	61.6	52.2	54	6 N	8 Pm Sm R Rs
22	30.251	57.6	56.6	55.5	55.9	55.6	57.6	49.2	56	0 E	0 M Sm Rs
23	30.258	57.6	60.0	58.8	59.0	59.2	61.1	53.5	62	3 NW	0 Rs
24	30.302	61.0	62.6	61.1	61.7	62.0	63.9	56.7	67	0 calm	1 Rs haze
25	30.247	62.3	64.4	63.0	63.9	63.8	65.7	61.0	81	0 SW	1 Rs haze
26	30.174	64.9	67.1	65.9	66.5	66.4	68.4	61.6	71	0 W	0 haze
27											
28	(29.873)	(66.1)	(59.2)	(58.6)	(59.4)	(58.2)	(60.4)	(56.8)	(86)	(7 N)	(10 Pm)
29	29.777	63.9	63.0	62.4	63.2	62.2	64.0	60.9	90	0 calm	10 Pm; raining
30	29.375	64.1	60.1	59.1	59.8	59.1	61.1	52.9	65	15 W	8 Pm M Sm

4 P.M.

Date	Barometer	Attached Thermometer	Casella 3235	Casella 12530	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Glaisher's tables	Wind	Clouds
1	30.009	72.3	74.8	73.9	74.7		75.6	57.0	27	15 NW	0
2	30.013	71.4	76.5	75.7	76.4		77.2	60.0	33	7 NE	1 Rs Sm
3	29.880	78.5	81.6	81.0	82.1		82.6	68.0	46	0 S	9 Rs haze
4	30.330	67.3	62.4	61.7	62.3		63.4	53.7	54	6 SE	0 Rs
5	30.329	67.0	65.3	64.0	65.0		66.0	58.2	65	6 E	10 Pm
6	30.180	71.7	76.0	75.2	76.5		76.8	69.6	71	6 SE	10 Pm haze; thin
7	29.973	70.9	70.9	70.3	71.2		71.7	59.6	48	6 NW	5 Pm M Sm
8	29.984	71.5	70.8	69.8	70.7		71.2	60.5	54	10 E	9 Rs M Sm
9	30.154	71.2	68.3	67.3	67.9		68.9	61.1	66	12 E	0
10	29.903	76.0	85.2	84.2	85.1		85.9	71.4	48	9 W	0 haze
11	29.956	77.8	79.0	78.3	79.2		79.8	63.2	37	6 NW	6 Pm Sm haze
12	30.222	69.8	64.7	63.0	63.9		65.1	56.3	59	12 E	8 Rs Rs Sm
13	30.332	67.4	65.9	65.0	65.7		66.7	58.1	61	14 E	1 Sm haze
14	30.298	70.3	71.0	70.2	71.3		71.8	63.7	65	6 SW	2 haze Sm
15	30.170	71.3	71.9	71.2	72.5		72.7	64.1	63	5 S	10 Pm
16	30.190	70.5	71.2	70.6	71.7		72.3	66.8	78	0 S	10 Pm
17	30.310	66.8	60.8	60.0	60.7		61.8	59.8	95	8 NE	10 Pm; a little fine rain
18	30.339	64.8	58.4	58.2	58.7		59.8	57.0	90	11 E	10 Pm; a few drops of rain
19	30.268	64.0	57.9	57.0	57.8		58.8	56.3	92	6 NE	10 Pm; a little fine rain
20	30.017	64.8	65.2	64.6	65.4		66.4	63.7	92	0 E	10 Pm; a little mist
21	30.086	67.3	64.5	63.8	64.4		65.4	52.4	39	6 NW	2 R Rs
22	30.248	65.1	60.0	59.0	59.4		60.8	51.9	58	3 SE	0 Rs haze
23	30.216	67.2	66.9	66.0	66.7		67.7	57.8	56	3 SE	0 Sm haze
24	30.267	69.5	66.8	65.9	66.5		67.6	60.3	68	1 SE	5 Pm Sm Rs
25	30.174	71.8	75.0	74.1	74.5		75.7	62.2	45	0 NW	1 Rs haze
26	(30.134)	(72.1)	(67.7)	(66.8)	(67.3)		(68.2)	(61.8)	(73)	(4 E)	(2 haze)
27											
28	29.806	67.0	62.5	61.8	62.5		63.7	59.0	82	4 N	10 Pm
29	29.588	69.8	61.0	60.2	61.0		62.0	60.3	97	6 NE	10 Pm; raining
30	29.484	67.3	60.4	59.6	60.0		61.2	52.7	63	15 W	3 Pm M Sm

Sums of columns, number of observations, means, and reduction of barometer to the freezing point.

	10 A.M.	4 P.M.
Barometer	873.864	872.860
	29	29
	30.133	30.099
	−.097	−.111
	30.036	29.988
Attached Thermometer	1866.5	2022.4
	29	29
	64.4	69.7
Casella 3235	1889.6	1982.6
	29	29
	65.2	68.4
Casella 12530	1860.7	1958.4
	29	29
	64.2	67.5
No. 4	1884.5	1981.1
	29	29
	65.0	68.3
Minimum after setting	1867.8	
	29	
	64.4	
Dry bulb	1922.6	2006.8
	29	29
	66.3	69.2
Relative humidity	1967	1825
	29	29
	68	63
Wind	163	187
	29	29
	5.6	6.4
Clouds	148	154
	29	29
	5.1	5.3

Rain gauge A, on roof of Observatory, north of Clock Room.

Date	Time	Ounces	Inches
18	10 A.M.	49½	0.427
19	8½ A.M.	26	0.224
21	10 A.M.	11¾	0.101
29	4 P.M.	62	0.534
30	4 P.M.	34¼	0.295
Total		183½	1.581

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Harvard College Observatory. September 1874.

Date	External Thermometer No. 4 7 A.M.	2 P.M.	9 P.M.	Mean	2 P.M. Castella 3235	Castella 12530	Maximum after setting	Extreme temperatures Maximum set at 10 A.M.	Minimum set at 10 A.M.			Rainfall in inches Gauge C Examined at 10 A.M.	Remarks.
1	60.2	75.0	64.9	66.7	75.1	74.1	68.3	79.4	58.0			0.000	rw
2	58.8	70.5	65.3	64.9	70.7	69.8	68.4	74.6	55.1			0.000	rw
3	61.5	82.8	65.4	69.9	82.8	81.8	74.7	76.0	57.8			0.000	Ryu Cloudy and squally about sunset.
4	48.6	63.4	53.8	55.3	64.0	62.8	59.8	82.5	46.0			0.000	
5	48.5	66.8	61.3	58.9	67.0	66.0	62.3	64.1	45.0			0.000	
6	63.0	76.6	68.8	69.5	75.8	75.2	69.0	69.3	58.0			0.000	
7	59.2	71.8	61.0	64.0	71.6	70.8	69.8	76.0	57.2			0.000	
8	58.3	73.9	63.4	65.2	73.6	72.9	68.2	72.3	56.2			0.000	
9	56.4	69.7	60.3	62.1	69.6	69.1	68.2	73.6	53.6			0.000	
10	58.7	84.0	75.2	72.6	84.3	83.0	69.6	70.1	56.0			0.000	Rch
11	67.5	80.1	71.6	73.1	80.0	79.0	76.5	84.9	64.7			0.000	Ryy
12	59.5	63.3	55.0	59.3	63.8	62.9	65.0	81.0	58.3			0.000	Cy
13	46.5	65.7	56.3	56.2	66.0	65.2	62.4	66.2	43.1			0.000	Rzw
14	54.6	71.8	59.9	62.1	71.4	70.6	65.8	66.7	50.1			0.000	Cy Rw
15	59.0	74.3	65.0	66.1	73.8	73.3	68.3	71.2	54.6			0.000	Ryw
16	66.5	73.2	(67.0)	68.9	72.7	72.0	68.5	74.8	64.2			0.000	yw {A few drops of rain about 9½ A.M. and at times later.}
17	60.8	60.6	58.8	60.1	60.7	59.9	61.8	72.1	59.7			0.000	yl A little rain about 12½ P.M. Rain following night.
18	60.0	60.0	58.8	59.9	59.4	59.1	61.0	62.0	57.1			0.408	yl A little rain at times.
19	58.2	59.6	57.2	58.3	59.8	58.8	59.0	61.0	57.3			0.232	yl A little rain at times.
20	57.3	65.1	62.9	61.8	64.9	64.1	60.0	59.9	55.7			0.022	yl A little rain at times.
21	55.0	65.5	52.8	57.8	65.9	65.0	60.0	65.0	54.4			0.088	y Ryw y — A 10 r.N.
22	44.0	60.8	49.8	51.5	61.2	60.2	56.2	65.1	42.4			0.000	rl
23	44.8	67.7	57.3	56.6	68.0	67.0	59.3	60.8	42.9			0.000	rf
24	47.2	65.8	59.2	57.4	66.0	65.5	61.6	67.7	45.0			0.000	Cy w
25	53.6	74.0	(60.8)	62.8	74.1	73.2	63.8	68.2	50.1			0.000	Rhr
26	55.5	70.4	60.2	62.0	70.4	69.8	66.7	79.5	53.0			0.000	
27	57.8		52.7										
28	52.5	60.0	62.3	58.3	60.1	59.2	(59.1)	(74.2)	(50.5)			(0.011)	
29	59.6	60.9	61.3	60.6	61.0	60.2	62.4	62.6	55.4			0.011	Raining in the evening and most of the day.
30	56.2	62.6	52.3	57.0	62.7	62.0	59.3	63.5	55.7			0.750	
Sums	1689.3	1995.9	1820.6	1798.9				2044.3	1557.1			1.522	
Means	56.3	68.8	60.7	62.0				70.49	53.69				

Rainfall for month 1.52 inches
Mean temperature for " (mean of the three means for 7, 2, and 9) 61.9 Fahrenheit
Maximum temperature for month 84.9 " ; Sept. 11.
Minimum " 42.4 " ; Sept. 22.
" (reduced to standard of No. 4) 43.0

The velocity of the wind is merely estimated in miles per hour. See general remarks on observations of 1873.

Observations in parentheses ( ) were not made at the regular times. The actual times are given below.

Date	Regular times	Actual times.
16	9 P.M.	9¼ P.M.
25	9 P.M.	6½ P.M.
26	4 P.M.	3¾ P.M.
28	10 A.M.	1 P.M.

Relative humidity for September computed after applying corrections for error of Psychrometer given in record for September, 1873.

Auroras noticed.

Sept. 12, 9 P.M. Auroral arch; upper edge through Capella, not reaching to the Dipper.

L. Trouvelot records aurora with streamers Sept. 7, between 10½ and 11 P.M.; also aurora Sept. 12, mentioned above.

Observers as in latter part of August, 1874, till September 13 inclusive; afterwards as in July, 1874; 9 P.M. observation September 30 by W. C. Winlock.

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October 1874. Meteorological Record of

10 A.M.

Date	Barometer	Attached Barometer	Casella 3235	Casella 12530	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's Tables	Wind	Clouds
1	29.786	57.6	52.2	51.6	51.9	51.1	52.8	44.2	58	8 W	5 Pm M Fm
2	29.764	59.0	61.9	61.0	61.9	61.1	62.9	56.3	72	18 S	10 Pm
3	30.010	57.4	54.8	53.7	54.0	53.8	55.5	48.0	65	5 W	5 M Fm
4	30.288	60.7	50.1	49.2	49.8	49.1	51.1	49.1	95	2 NW	1 Fm
5	30.300	56.9	50.7	49.7	50.0	49.7	51.6	44.8	54	3 NW	4 M Fm
6	30.260	59.3	53.9	52.9	53.2	52.9	55.1	48.1	63	3 SE	3 R Rs Fm
7	30.402	65.5	57.3	56.1	57.1	56.2	58.6	52.7	72	7 SE	10 Pm Fm
8	30.281	63.7	58.3	57.7	58.1	57.5	59.3	54.2	72	11 E	7 Pm Fm Rs
9	29.880	65.0	*55.0	54.8	55.8	54.4	56.7	53.7	89	4 W	6 Pm Fm
10	29.876	62.2	57.0	56.0	56.7	56.0	58.2	55.6	91	1 S	10 Pm mist
11	29.762	61.4	61.0	60.2	60.8	60.7	62.2	53.1	47	3 SE	5 Fm Rs
12	29.968	62.0	54.2	53.1	53.4	53.3	55.2	47.5	58	3 W	0
13	30.182	58.6	44.3	43.3	44.0	43.2	45.0	38.4	57	6 N	10 Pm
14	30.206	61.8	43.8	42.8	43.4	42.8	44.5	38.9	68	8 N	9 Pm Fm
15	(30.349)	(66.5)	(50.2)	(49.2)	(49.6)	(49.1)	(51.0)	(42.9)	(52)	(4 SW)	(5 R Rs)
16	30.191	61.7	53.6	52.3	52.5	52.8	53.8	46.1	57	2 SW	0 Rs
17	29.920	56.7	56.0	54.7	55.1	55.0	57.1	49.4	60	8 SW	5 Rs R
18	29.586	61.6	59.0	58.1	58.7	57.8	55.0	51.3	84	4 NW	10 Pm
19	29.787	65.9	44.3	43.4	43.9	43.2	45.0	38.0	54	13 NW	9 R Rs Fm M
20	†30.002	†46.0	49.8	48.5	48.8	48.8	50.6	41.7	47	5 W	8 Fm haze
21	†30.318	†54.0	52.2	51.6	52.0	51.0	53.1	47.0	66	4 W	10 Pm
22	†30.324	†48.7	51.0	49.4	49.2	49.9	52.1	43.0	47	0 W	0
23	†30.458	†49.8	51.6	50.2	50.9	50.2	52.6	46.1	65	3 NE	0 haze Fm
24	†30.527	†50.4	52.1	51.0	52.0	51.1	53.6	49.3	80	0 SE	10 Pm Fm
25			52.0	50.9	51.4	51.3	52.0	50.0	95	1 SE	7 R Rm
26	†30.244	†54.0	55.4	54.0	54.4	54.4	56.8	52.9	83	2 SW	1 R haze
27	†(29.974)	†(54.8)	(58.0)	(56.6)	(57.2)	(56.9)	(59.3)	(54.7)	(80)	(2 SE)	(5 R R Rs)
28	†29.873	†57.4	60.3	59.2	59.8	59.3	61.5	53.4	60	7 NW	0
29	†(29.976)	†(55.9)	(58.2)	(57.0)	(57.5)	(57.0)	(59.3)	(53.0)	(70)	(3 SE)	(5 haze Fm)
30	†29.804	†59.2	56.8	56.0	56.4	56.0	57.7	47.4	46	8 W	1 Pm Fm
31	†(29.876)	†(52.0)	(49.3)	(48.1)	(48.7)	(48.1)	(50.2)	(41.8)	(50)	(6 W)	(6 Pm Fm)

4 P.M.

Date	Barometer	Attached Barometer	Casella 3235	Casella 12530	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's Tables	Wind	Clouds
1	29.833	62.5	57.3	56.7	57.0		58.0	47.0	52	13 W	3 R Rs Pm Fm
2	29.651	63.9	58.1	57.4	57.9		59.0	56.0	90	4 SW	8 Pm Fm
3	30.049	62.0	58.9	58.0	58.4		59.6	49.2	56	8 N	0 Fm
4	30.266	66.1	54.0	53.7	54.1		54.8	52.2	91	1 NW	9 Pm
5	30.235	62.3	55.9	55.0	55.5		56.5	49.0	54	2 E	2 Pm Fm
6	30.254	70.1	59.4	58.8	59.4		60.1	51.7	58	2 SE	10 Pm Fm
7	30.392	69.0	57.1	56.6	56.9		58.0	53.8	82	8 E	10 Pm
8	(30.100)	(65.9)	(56.6)	(55.9)	(56.4)		(57.2)	(51.2)	(70)	(7 NE)	(10 Pm Fm Rs)
9	29.852	69.8	64.0	63.7	64.0		65.0	56.8	62	2 SW	4 Pm M Fm
10	29.680	68.4	61.9	61.0	61.6		62.6	60.1	93	6 SW	10 Pm Fm
11	29.778	58.7	61.5	60.7	61.4		62.2	51.6	48	4 SW	
12	29.970	66.4	57.7	56.9	57.2		58.3	47.3	42	8 W	2 M Fm
13	30.202	71.2	46.9	46.1	46.8		47.4	39.6	51	5 N	10 Pm
14	30.190	61.4	50.0	49.1	49.7		50.8	41.7	54	7 N	5 Pm Fm
15	30.251	71.2	57.3	56.8	56.9		58.1	47.2	43	5 SW	1 Rs
16	30.070	67.1	63.0	62.4	62.6		63.8	49.8	33	4 SW	1 R Rs
17	29.790	66.5	62.1	61.7	62.2		63.2	52.0	46	6 SW	10 Pm
18	29.580	65.7	53.4	52.8	53.2		53.9	45.2	51	15 N	8 M Pm Fm
19	†29.775	†51.6	45.8	45.0	45.4		46.2	38.5	50	15 NW	9 Pm Fm
20	†29.961	†54.0	59.9	59.0	59.6		60.7	49.5	44	7 SW	7 Pm Fm Rm
21	†30.338	†57.8	56.0	55.5	55.6		56.7	47.7	43	0 W	0
22	†30.250	†57.7	61.5	60.8	60.8		62.4	47.8	29	1 W	0
23											
24	†30.469	†57.7	53.0	54.1	54.6		53.8	51.1	77	5 NE	2 haze
25			(62.7)	(61.9)	(62.6)		(63.7)	(54.9)	(59)	(1 SE)	(3 R Rs Rm)
26	†(30.162)	†(62.0)	(65.4)	(65.0)	(65.5)		(66.2)	(57.0)	(58)	(2 E)	(1 haze)
27	†29.868	†60.3	64.0	63.1	63.9		65.0	58.0	68	0 calm	10 Pm
28	†29.878	†63.3	61.8	61.0	61.4		62.7	52.4	50	6 NW	0 Rs
29	†29.858	†62.9	62.2	61.7	62.1		63.0	56.6	70	8 S	2 haze Fm
30	†29.833	†62.9	58.3	57.8	58.0		59.0	48.4	45	6 SW	3 Pm Rm Fm
31	†29.836	†57.7	50.9	50.2	50.5		51.5	40.7	35	5 SW	4 Pm Fm haze

Sums of columns, number of observations, means, and reduction of barometer to the freezing point.

	10 A.M.	4 P.M.
Barometer	902.174	870.371
	30	29
	30.072	30.013
	—.079	—.094
	29.993	29.919
Attached Barometer	1745.7	1836.1
	30	29
	58.2	63.3
Casella 3235	1664.3	1738.6
	31	30
	53.7	58.0
Casella 12530	1632.3	1718.4
	31	30
	52.7	57.3
No. 4	1648.2	1731.2
	31	30
	53.2	57.7
Minimum after setting	1633.7	
	31	
	52.7	
Dry bulb	1689.4	1761.4
	31	30
	54.5	58.7
Relative humidity	2057	1704
	31	30
	66	57
Wind	154	163
	31	30
	5.0	5.4
Clouds	167	144
	31	29
	5.4	5.0

Rain gauge A, on roof of shed north of Clock Room.

Date	Time	Ounces	Inches
3	4 P.M.	33	0.285
9	10 A.M.	$39\frac{3}{8}$	0.339
10	4 P.M.	$35\frac{7}{8}$	0.305
19	4 P.M.	$4\frac{3}{4}$	0.041
21	4 P.M.	$3\frac{1}{2}$	0.030
28	4 P.M.	$5\frac{1}{4}$	0.045
29	4 P.M.	2	0.017
30	10 A.M.	$1\frac{1}{2}$	0.010
Total		$124\frac{3}{8}$	1.072

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Harvard College Observatory. October 1874.

Date	External Thermometer No. 4 7 A.M.	2 P.M.	9 P.M.	Mean	2 P.M. Casella 3235	Casella 12530	Maximum after setting	Extreme temperatures Maximum set at 10 A.M.	Minimum set at 10 A.M.			Rainfall in inches Gauge C examined at 10 A.M.	
1	45.7	58.0	48.6	50.8	58.4	57.2	52.2	63.9	44.7			0.000	
2	53.5	62.3	49.5	55.1	62.2	61.7	61.0	61.2	44.8			0.000	A few drops of rain in the forenoon; shower at 2 P.M.; slight shower, with squall from the west about sunset.
3	46.2	(58.8)	47.7	50.9	(59.0)	(58.3)	54.7	62.3	44.2			0.276	2 Rw
4	41.7	(53.6)	43.6	47.0	(55.1)	(49.8)	51.6	58.9	41.2			0.000	Rrl
5	37.0	56.7	48.0	47.2	56.7	56.0	50.6	55.4	35.9			0.000	Rrl
6	41.3	58.9	49.7	50.0	59.0	58.6	53.5	56.8	39.7			0.000	v Rw
7	45.2	58.7	50.5	51.5	59.0	58.2	56.8	60.1	44.8			0.000	
8	42.4		53.8				58.0	60.0	49.2			0.000	Rain in the evening and following night.
9	49.5	64.0	56.9	56.8	64.0	63.2	55.1	60.0	48.9			0.353	
10	50.0	58.2	59.0	55.7	58.0	57.6	56.7	64.0	46.9			0.000	Rain in the middle of the day.
11	53.3	60.7	50.4	54.8	61.0	60.0	60.1	60.7	51.6			0.287	Rrw
12	42.2	58.4	46.0	48.9	58.6	57.9	53.8	63.6	40.9			0.000	r Rw
13	37.3	47.5	40.5	41.8	47.5	46.8	44.4	59.3	37.1			0.000	y Rd
14	33.2	49.8	40.4	41.1	50.0	49.0	43.7	47.7	32.0			0.000	Ryd
15	35.0	55.8	46.6	45.8	56.2	55.2	(49.8)	(49.8)	(34.6)			(0.000)	r Rw
16	42.2	63.8	(48.6)	51.5	64.2	63.3	53.0	57.0	41.3			0.000	rw
17	41.0	65.4	54.9	53.8	65.4	64.4	55.4	63.8	38.6			0.000	Ryw
18	52.7	58.4	43.8	51.6	58.7	57.8	54.0	64.8	52.7			(0.044)	Ryl A little rain previous night.
19	37.8	46.3	37.6	40.6	46.5	45.9	44.2	58.0	37.3			0.000	Rnl Ry rll.
20	33.7	58.8	53.4	48.6	58.8	58.3	49.0	48.9	31.5			0.000	Ryw
21	51.0	54.3	42.7	49.3	54.7	53.9	52.0	59.6	48.8			0.044	y Rw y > N. A little rain previous night.
22	35.2	60.5	46.5	47.4	61.0	60.1	50.2	55.6	35.1			0.000	rw
23	37.5	53.5	43.0	44.7	54.0	52.9	51.2	61.2	36.1			0.000	
24	38.5	58.5	47.2	48.1	59.4	58.2	52.0	54.2	33.7			0.000	
25	43.0	64.2	52.9	53.4	64.3	63.7	53.0	58.3	42.2			0.000	
26	46.0	66.1	51.5	54.4	66.6	65.8	54.8	64.7	45.1			0.000	
27	45.7	68.5	55.7	56.6	68.1	67.9	(57.2)	(66.0)	(44.4)			(0.000)	Rather cloudy, with a few drops of rain.
28	51.0	62.8	50.6	54.8	62.9	62.0	59.8	68.6	50.6			0.022	rw
29	47.2	63.3	57.8	56.1	63.7	63.0	(58.0)	(63.8)	(44.1)			(0.022)	Rain previous night. Rrw
30	58.8	60.3	47.5	55.5	60.7	59.9	56.8	63.6	54.7			0.022	Rain previous night; thunder early in the morning. Rrw
31	42.5	53.2	39.7	45.1	53.2	52.8	(49.4)	(59.9)	(40.0)			(0.000)	Ry l
Sums	1357.3	1761.3	1504.6	1508.9				1851.7	1312.7			1.070	Rainfall for month 1.07 inches.
Means	43.8	58.7	48.5	50.3				59.73	42.35				Mean temperature " " 50.3 Fahrenheit.

Maximum " " " 68.6 " ; Oct. 28.
Minimum " " " 31.5 " ; Oct. 20.
" (reduced to standard of No. 4) 32.0 "

The velocity of the wind is merely estimated in miles per hour. See general remarks on observations of 1873.

Observations in parentheses ( ) were not made at the regular times. The actual times are given below.

Date	Regular times.	Actual times.
3	2 P.M.	2 3/4 P.M.
4	2 P.M.	3 P.M.
8	4 P.M.	5 P.M.
15	10 A.M.	11 1/4 A.M.
16	9 P.M.	9 3/4 P.M.
18	10 A.M., 4 P.M.	4 1/2 P.M., 4 1/2 P.M.
25	4 P.M.	4 3/12 P.M.
26	4 P.M.	3 1/2 P.M.
27	10 A.M.	9 1/2 A.M.
29	10 A.M.	10 5/6 A.M.
31	10 A.M.	10 1/6 A.M.

Relative humidity for October computed after applying corrections for error of psychrometer given in record for September 1873.

Auroras noticed.

Oct. 3, 7 1/2 P.M.; high auroral arch, passing through δ and ε Ursæ Maj. 11 P.M.; flashing streamers reaching about to the zenith.

Oct. 4. Auroral arch noticed at 7 and at 10 P.M.

Oct. 15, 10 P.M. Low auroral arch.

* Oct. 9, 10 A.M. Bulb of Casella 3235 wet.

† Barometer Newman 57 dismounted between 10 A.M. and 4 P.M. Oct. 19; barometer Newman 68 (in West Transit Room) used for the rest of the month.

Observers as follows: 7 A.M. observation by Bridget Henry.
9 P.M. " by N. Sand or W. Winlock.
10 A.M., 2 P.M., 4 P.M. observations on Sundays by W. Winlock; on other days by A. Searle.
Sundays of Oct., 1874; Oct. 4, 11, 18, 25.

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November 1874. Meteorological Record of

10 A.M.

Date	Barometer	Attached Thermometer	Casella 3235	Casella 12530	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's Tables	Wind	Clouds
1	29.968	48.0	44.0	43.0	43.3	43.1	44.9	37.0	48	*10 SE	2 Fm Rm
2	30.173	49.5	43.8	42.8	43.0	42.5	44.4	37.3	52	5 W	1 Fm haze
3	30.398	45.0	45.1	43.7	43.9	44.0	46.4	40.7	65	6 SW	2 haze
4	30.346	46.9	46.0	44.5	44.9	44.6	46.8	43.0	80	5 SW	3 thick haze
5	30.204	48.1	48.0	46.7	47.2	46.7	49.0	45.5	83	5 SW	9 R Rs haze
6	29.888	53.3	59.8	58.8	59.3	59.0	60.9	52.4	57	10 SW	4 haze
7	30.387	51.0	49.0	48.0	48.4	48.0	49.8	41.4	49	5 N	2 haze
8	30.372	48.2	47.4	46.9	47.2	47.0	49.2	44.6	75	3 SE	3 M Fm Rm
9	29.924	53.0	56.1	55.1	56.0	55.1	57.2	51.8	64	8 SW	8 Rm Fm haze
10	29.984	51.9	51.2	50.1	50.4	50.1	52.1	44.8	59	6 SW	3 Rm Rm Fm
11	29.691	55.2	57.4	56.1	56.9	56.2	58.5	51.2	63	4 SW	9 Rm Rm Fm
12	30.035	45.2	33.9	33.0	33.2	33.0	34.6	26.8	38	13 NW	0 Fm
13	30.239	37.6	31.0	30.1	30.4	29.8	31.6	25.0	46	7 NW	0 M Fm
14	30.578	34.0	29.1	28.2	28.6	28.0	29.8	23.2	43	6 N	1 M Fm
15	30.446	35.3	28.9	28.2	28.7	†	39.6	32.1	45	*2 SE	9 R Rm
16	30.441	42.0	44.0	43.1	43.5	43.1	44.8	37.2	49	9 NW	0 Rm
17	30.480	41.6	40.7	39.4	40.3	39.6	41.7	36.4	65	1 SW	10 Rm
18	30.144	50.0	50.5	49.6	50.2	49.3	51.5	48.8	90	3 SW	10 Rm
19	30.276	41.2	28.0	27.5	27.9	27.0	28.8	22.9	49	3 W	10 R
20	29.780	34.8	30.1	29.2	29.8	29.2	31.1	27.4	75	1 NE	10 Rm R Fm
21	29.551	39.3	‡34.7	35.0	35.0	34.7	36.5	32.0	70	8 W	3 Rm Fm
22	30.110	39.0	29.1	28.7	28.8	28.1	29.9	24.6	57	7 NE	4 R R Rs
23	29.719	36.9	38.6	37.8	38.0	37.4	39.2	37.2	95	7 NE	10 Rm; raining
24	29.302	41.0	40.4	39.6	39.7	39.4	41.1	34.0	49	12 SW	7 Rm M Fm
25	29.739	35.0	31.8	30.9	30.9	30.5	32.4	26.4	53	7 SW	0 Rs
26	30.136	35.0	27.4	26.7	26.8	26.2	28.0	23.3	61	6 NW	0
27	30.523	33.7	33.5	31.8	32.0	32.0	34.6	29.3	62	2 S	2 Rm Rs
28	30.398	39.8	43.1	41.9	42.1	41.8	44.0	40.8	84	4 SW	0 Rs haze
29	29.459	49.3	57.6	57.1	57.7	56.8	59.0	57.3	97	3 S	10 Rm
30	30.178	35.3	25.0	24.5	24.5	24.0	25.8	21.2	60	7 NW	5 M Fm

4 P.M.

Date	Barometer	Attached Thermometer	Casella 3235	Casella 12530	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's Tables	Wind	Clouds
1	29.960	55.1	47.0	46.3	46.6		47.6	38.1	39	*7 SE	9 M Rm
2	30.230	54.2	48.0	47.4	47.6		48.7	39.1	40	0 calm	0 Fm
3	30.351	52.8	50.4	49.8	49.9		51.0	41.5	43	3 S	9 thick haze
4	30.289	54.0	54.0	53.6	53.5		54.2	47.0	61	0 E	9 R thick haze
5	30.054	53.2	56.0	55.4	56.0		57.0	50.0	64	6 SW	10 R Rm Rs
6	29.944	59.8	61.1	60.7	61.0		62.0	45.6	20	13 W	0 haze
7	30.396	56.2	51.6	50.1	50.4		52.0	43.9	53	6 E	1 Rs haze
8	30.243	55.2	56.1	55.2	55.9		56.8	48.2	54	7 SE	9 M Fm
9	29.802	56.5	55.5	55.0	55.4		56.3	52.4	83	1 W	10 Rm
10	29.916	59.0	58.5	57.9	58.1		59.2	47.2	38	3 SW	2 R R Fm Rm
11	(29.767)	(57.0)	(48.0)	(47.5)	(47.7)		(48.9)	(37.9)	(31)	(12 SW)	(9 Rm Rm Fm)
12	30.039	47.0	36.9	36.3	36.4		37.4	28.7	35	13 NW	0 Fm
13	30.292	41.7	32.6	31.9	32.1		33.0	25.4	38	8 NW	0 Rm Fm
14	30.556	39.8	32.5	31.9	32.0		33.0	26.1	45	6 NW	0
15	30.312	39.9	39.9	38.9	39.2		40.3	34.0	55	*15 SE	10 R Rm
16	30.434	46.0	46.8	46.0	46.3		47.3	37.0	33	7 NW	3 Rs Rm
17	30.313	45.4	47.9	47.1	47.4		48.6	42.4	63	11 S	10 Rm Fm
18	30.079	55.2	55.0	54.2	54.6		55.6	47.0	53	3 W	0 Fm
19	30.156	40.6	32.0	31.0	31.2		32.5	26.0	48	1 N	0 Rs Fm
20	29.467	39.0	36.7	35.9	36.2		37.3	35.9	100	1 NE	10 Rm; raining
21	29.669	42.0	36.7	36.1	36.2		37.4	31.7	60	4 SW	10 R Rs
22	30.128	39.3	30.7	30.2	30.3		31.2	25.6	56	3 NW	6 Rs Rm
23	29.146	40.0	44.9	43.7	44.3		46.0	44.3	97	0 NE	10 Rm fog and rain
24	29.437	43.3	37.0	36.6	36.5		37.8	29.9	43	5 SW	1 M Fm R Rs
25	29.762	39.4	33.8	33.1	33.2		34.4	27.8	49	8 W	9 Rm Fm
26											
27	30.468	41.9	43.8	43.1	43.3		44.2	37.6	56	4 S	3 Rs R
28	30.288	46.8	62.0	51.5	51.9		52.8	48.0	76	1 S	10 Rm Fm
29	29.649	46.0	36.6	35.7	35.8		37.3	34.3	85	2 S	9 Rm
30	30.301	33.5	25.0	24.2	24.2		25.7	19.7	42	12 W	0 Fm

Sums of columns, number of observations, means, and reduction of barometer to the freezing point.

	10 A.M.	4 P.M.
Barometer	902.869	871.448
	30	29
	30.096	30.050
	−.040	−.051
	30.056	29.999
Attached Thermometer	1296.1	1379.8
	30	29
	43.2	47.6
Casella 3235	1225.2	1287.0
	30	29
	40.8	44.4
Casella 12530	1198.0	1266.3
	30	29
	39.9	43.7
No. 4	1208.6	1273.2
	30	29
	40.3	43.9
Minimum after setting	1166.2	
	29	
	40.2	
	Or, adding estimate for Nov. 15, mean 39.8	
Dry bulb	1263.2	1305.5
	30	29
	42.1	45.0
Relative humidity	1883	1560
	30	29
	63	54
Wind	175	162
	30	29
	5.8	5.6
Clouds	137	159
	30	29
	4.6	5.5

Rain gauge A, on roof of Shed, north of Clock Room.

Date	Time	Ounces	Inches
10	12 M.	2 3/4	0.024
18	10 A.M.	28 7/8	0.249
21	9 A.M.	38 3/4	0.334
23	4 P.M.	67 5/8	0.581
24	9½ A.M.	37 1/4	0.321
30	10 A.M.	39 1/4	0.338
Total		214 1/4	1.847

Measure of snow

Nov. 23, 10 A.M.

Snow 2¾ inches deep, wet; a cylinder of this snow 1⅞ inches across and 11 inches long weighs 4 ounces; hence rainfall 0.628 inches. Gauge C choked with snow; cleared out at 10 A.M.

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Harvard College Observatory. November 1874.

Date	External Thermometer No. 4 7 A.M.	2 P.M.	9 P.M.	Mean	2 P.M. Casella 3235	Casella 12530	Maximum after setting	Extreme temperatures Maximum read at 10 A.M.	Minimum read at 10 A.M.			Rainfall in inches Gauge C Examined at 10 A.M.	Remarks.
1	37.2	47.2	41.2	41.9	47.7	47.0	40.1	53.9	36.7			0.000	Rcl Sy N
2	34.5	49.0	38.0	40.5	49.6	48.6	44.0	48.0	34.0			0.000	
3	28.0	52.5	42.2	40.9	52.9	52.0	45.0	49.0	27.9			0.000	
4	33.7	56.5	45.2	45.1	57.0	56.5	45.5	52.2	33.3			0.000	
5	35.0	56.3	50.7	47.3	56.4	55.8	47.8	56.5	34.2			0.000	Ryl
6	48.7	(62.4)	51.4	54.1	(62.6)	(61.8)	59.0	59.0	46.8			0.000	w Rw
7	43.0	52.8	40.8	45.5	53.2	52.4	49.0	62.7	48.0			0.000	Rcl
8	32.3	56.5	48.7	45.8	57.0	56.1	49.7	53.1	31.6			0.000	Rrw
9	46.4	60.1	49.9	52.1	60.0	59.5	55.8	56.9	45.5			0.000	zy Rw A little rain afternoon. Rc U.
10	39.2	59.1	51.6	50.0	59.5	58.7	51.1	61.0	39.1			0.016	z Rw
11	46.4		42.1				56.7	59.0	46.1			0.000	Rrw Cloudy at times.
12	29.0	37.7			38.2	37.5	34.6	59.4	29.1			0.000	zdn
13	23.8	34.0	25.9	27.9	34.5	33.9	31.5	37.9	22.9			0.000	zd Evening somewhat cloudy.
14	21.0	32.2	23.9	25.7	32.9	32.0	29.4	34.2	20.4			0.000	zd
15	21.3	38.8	37.5	32.5	39.3	38.4	†35.8	35.8	15.9			0.000	yd Evening rather clear.
16	33.5	47.3	(33.5)	38.1	47.9	46.9	43.4	43.4	31.3			0.000	zl
17	31.2	48.0	47.7	42.3	48.1	47.6	40.2	47.8	30.5			0.000	yl Rain following night.
18	47.4	(56.2)	38.9	47.5	(56.7)	(55.9)	49.7	49.7	39.5			0.254	y y> A 10 zN Sy U
19	25.0	29.8	25.6	26.8	30.1	29.6	29.0	56.0	25.0			0.000	y y> N hU Large halo round the moon.
20	22.0	33.0	31.6	28.2	33.0	32.7	30.4	31.6	20.0			0.000	y Began snowing a little before 1 P.M.; rain later.
21	32.2	39.2	31.3	34.2	39.7	38.9	34.9	37.8	29.3			0.386	Rcl y< A 11.
22	26.3	32.3	26.3	28.3	32.9	32.2	31.0	39.0	25.9			0.000	v l y U
23	33.0	44.0	36.3	37.8	44.0	43.6	37.9	37.9	25.0			§0.628	y l y {Snow previous night and early in the day; afterwards rain.}
24	36.3	39.0	30.9	35.4	39.8	39.0	39.6	44.8	35.2			0.673	Ryn l
25	23.8	35.0	30.2	29.7	35.9	34.9	31.9	40.0	23.2			0.000	zl y< A 10. Ry U.
26	20.5		25.9				28.0	35.8	20.6			0.000	zl
27	20.5	45.7	36.9	34.4	45.9	45.3	33.0	32.7	19.2			0.000	Rcl
28	35.0	50.6	47.7	44.4	50.7	50.0	42.2	45.6	32.0			0.000	Ryw
29	53.0	37.8	32.0	40.9	38.1	37.8	54.0	57.2	41.7			0.099	ywa d< A 10. Some snow and rain.
30	22.2	25.4	19.2	22.3	26.0	25.2	25.7	57.9	22.0			0.276	Rcd
Sums	981.4	1258.4	1082.8	1039.6				1438.8	931.6			2.332	Rainfall for month 2.33 inches.
Means	32.7	44.9	37.3	38.5				47.86	31.05				Mean temperature for " (mean of the three means for 7, 2, 9) 38.3 Fahrenheit.

Maximum " for month 62.7 Fahrenheit; Nov. 7
Minimum " " " 15.9 " " 15
" (reduced to standard of No. 4) 16.4 "

The velocity of the wind is merely estimated in miles per hour. (See general remarks on observations of 1873.

Observations in parentheses ( ) were not made at the regular times. The actual times are given below.

Date	Regular times.	Actual times
6	2 P.M.	3 P.M.
11	4 P.M.	4½ P.M.
16	9 P.M.	9¾ P.M.
18	2 P.M.	2⅔ P.M.

Relative humidity for November computed after applying corrections for errors of psychrometer given in record for September 1873.

Auroras noticed.
Nov. 6, about 6¼ P.M. Apparently a faint auroral arch.

Zodiacal light
perceptible in the east Nov. 15, 3½ A.M.

* On Sunday Nov. 1, and Sunday Nov. 15, the wind appeared to the observer to be southeast; while so far as was noticed by A. Searle at various places in and near Cambridge, the wind was steady from the west or southwest on both days.

† Reading of maximum and minimum thermometers after setting, Nov. 15, 10 A.M., much affected by opening of window. Minimum after setting 34.4, not entered in record above.

‡ Reading of Casella 3235, Nov. 21, 10 A.M., noticed to be low; no moisture visible on ball.

§ Rainfall for Nov. 23 obtained by measure of snow, on opposite page.

Additional barometer readings, Nov. 23.
7½ P.M., barometer 28.978
attached thermometer 41.2
9 P.M., barometer 28.971
attached thermometer 40.5

November meteors.

No watch kept Nov. 12, mean time.
Watch kept by R. Willson Nov. 13 till 16h mean time; night cloudy; no meteors seen.
Watch kept by A. Searle Nov. 14, from 12h to 16h mean time; began to cloud up at 15h and became wholly cloudy by 16h. Mr. Ferguson of the Coast Survey assisted in the observations. Occasional observations before midnight showed that meteors were not then abundant. From 12h to 16h 69 meteors were recorded; of these 35 radiated from Leo, 26 did not, and the direction of 8 is uncertain from the record. 4 were observed for parallax by A. Searle as follows:
12h 53m mean time. 1 not from Leo, bright, in line from α Aquilæ to head of Orion.
13h 15m mean time. 1 from Leo, with train, directly towards ε Ursæ Majoris.
13h 17m mean time. 1 not from Leo, bright, ending just east of α Ursæ Majoris.
13h 19m mean time. 1 directly through ε Aquilæ, very bright, with train, radiant from Leo.

Observers as in October, 1874.

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December 1874. Meteorological Record of

10 A.M.

Date	Barometer	Attached thermometer	Casella 3235	Casella 12530	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's Tables	Wind	Clouds
1	30.590	28.7	19.9	19.1	19.2	18.8	20.8	16.6	59	0 N	6 Rs Rm Pr
2	30.230	38.0	32.1	31.0	31.5	31.2	33.2	30.0	82	0 SW	5 Pr Rs
3	29.836	40.0	46.9	45.9	46.2	45.9	47.7	44.2	83	5 SW	9 Pr Rs
4	30.245	39.0	30.9	30.2	30.5	30.0	31.7	26.9	65	6 N	10 Pm Pr
5	(30.402)	(32.7)	(28.8)	(27.9)	(28.6)	(27.8)	(29.6)	(25.4)	(69)	(0 NW)	(9 Pm Fm haze)
6	30.100	37.1	37.2	36.3	36.9	36.4	38.4	34.1	73	1 SE	10 Pr Pm
7	29.764	40.0	36.0	35.2	35.5	35.0	36.6	35.0	99	0 calm	10 Pm; raining
8	29.770	37.8	37.0	36.1	36.4	36.1	37.9	33.4	71	7 NW	9 Pm Fm Pr R Rm Rs
9	29.994	31.6	27.9	27.0	26.9	26.6	28.8	24.4	66	10 W	1 Pr Rs
10	30.233	36.7	34.2	33.6	33.7	33.2	34.9	27.1	39	6 NW	5 R Pr Rs
11	30.030	37.0	37.0	35.9	36.3	35.9	37.6	33.0	70	1 S	10 Pr Fm; a little snow
12	30.191	35.8	21.7	20.9	21.2	20.5	22.6	19.0	70	2 SW	3 Pm Fm Rs
13	30.244	28.6	*25.9	*25.1	*25.4	*25.1	*26.9	*23.8	*77	1 N	9 Pr
14	29.589	38.8	42.0	41.0	41.4	41.0	42.4	40.2	94	7 SW	10 Pm; raining
15	30.248	§10.0?	1.8	1.5	1.0	1.0	Below graduation.			10 NW	0
16											
17			33.0	32.3	32.6						
18	29.705	31.3	20.6	19.7	19.9	19.6	21.3	17.0	58		
19											
20	29.959	32.0	29.0	28.1	28.5	28.1	29.9	26.7	80	0 NW	10 Pr Pm
21											
22	30.093	24.9	19.9	19.3	19.8	19.6	22.7	20.0	83		
23	29.905	34.5	34.9	33.9	34.4	34.3	38.0	34.9	84		
24											
25											
26											
27	30.080	36.0	37.7	36.7	36.7	36.8	38.3	33.3	66	3 N	8 R Pr
28	29.891	38.6	41.9	40.8	41.5	40.9	43.0	40.8	92	4 S	10 Pm; thick & foggy
29	29.744	43.1	42.3	41.5	42.0	41.5	43.4	37.9	65		
30											
31											

4 P.M.

Date	Barometer	Attached thermometer	Casella 3235	Casella 12530	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's Tables	Wind	Clouds
1	30.386	35.0	31.0	30.0	30.2		31.3	26.0	59	10 SE	10 Pr
2	30.180	44.2	40.3	39.8	39.7		41.0	35.8	65	1 SW	8 Pm Fm Rs
3	29.795	44.7	51.0	50.1	50.6		51.6	46.0	63	3 SW	9 Pr Rs Rm Fm
4	30.325	40.0	33.0	32.6	32.6		33.6	27.8	57	5 NW	0 Fm
5	30.278	38.0	32.7	31.9	32.0		33.0	28.9	73	0 calm	10 Pr Rs Fm
6											
7	29.707	40.3	36.9	36.0	36.4		37.7	35.3	91	5 NE	10 Pm
8	29.842	41.3	37.2	36.8	36.8		37.9	32.4	61	8 W	4 Pm M Fm Rs
9	29.846	39.0	41.1	39.9	40.2		42.0	36.4	62	10 SW	10 Pm Pr
10	30.238	40.0	35.7	35.0	34.9		36.1	28.2	40	2 N	2 Pm Fm
11	29.944	40.2	36.9	36.1	36.3		37.4	31.5	58	1 SW	4 Pm Fm Rs
12	30.183	37.0	28.0	27.7	27.7		28.7	23.1	52	4 W	5 Pr Pm M Fm Rs
13	30.133	31.3	29.0	28.4	28.5		29.2	31.9	100	1 NW	10 Pr; a little snow
14	29.801	35.0	22.7	22.1	22.2		23.4	20.0	73	14 NW	9 Pr
15	30.252	§15.0?	9.9	9.7	9.3		Under fastening			13 NW	0
16											
17											
18	29.773	36.0	27.2	26.5	26.4		21.8	26.9			
19	29.875	39.5	40.5	39.8	40.0		‡40.5?	‡33.2?			
20	29.851	33.3	32.9	32.3	32.3		33.4	31.6	97		
21											
22											
23	29.981	41.2	38.9	38.0	38.4		29.3	23.9	48		
24											
25											
26											
27	30.109	41.7	40.2	39.7	39.6		39.7	35.0	70	1 N	6 Pr Pm
28	29.728	40.0	44.8	44.3	44.6		45.9	44.0	95		
29											
30	30.104	31.0	23.0	22.5	22.5		23.2	19.0	62		
31	‡30.537	19.0	11.9	11.7	11.6		10.9	8.5	80		

Sums of columns, number of observations, means, and reduction of barometer to the freezing point.

	10 A.M.	4 P.M.
Barometer	660.843	660.868
	22	22
	30.038	30.039
	−.016	−.021
	30.022	30.018
Attached thermometer	752.2	802.7
	22	22
	34.2	36.5
Casella 3235	718.6	724.8
	23	22
	31.2	32.9
Casella 12530	699.0	710.9
	23	22
	30.4	32.3
No. 4	706.1	712.8
	23	22
	30.7	32.4
	Or, omitting Dec. 17, means 30.6	
Minimum after setting	665.3	
	22	
	30.2	
Dry bulb	705.7	707.6
	21	21
	33.6	33.7
	Or, omitting Dec. 15, 17, 23	Or, omitting Dec. 15, 23
Relative humidity	1545	1306
	21	19
	74	69
Wind	63	78
	18	15
	3.5	5.2
Clouds	134	97
	18	15
	7.4	6.5

Gauge A not used this month.

At 10 A.M. Dec. 2 snow $0\frac{1}{2}$ inches deep, 6 inches in cylinder $1\frac{7}{8}$ inches across weigh $1\frac{1}{4}$ ounces. Hence rainfall — 0.065 inches, agreeing with result by gauge C.

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Harvard College Observatory. December 1874.

Date	External Thermometer No. 4 7 A.M.	2 P.M.	9 P.M.	Mean	2 P.M. Casella 3235	Casella 12530	Maximum after setting	Extreme temperatures Maximum set at 10 A.M.	Minimum set at 10 A.M.			Rainfall in inches. Gauge C examined at 10 A.M.	Remarks.
1	12.8	27.8	30.3	23.6	29.0	28.6	20.6	26.3	12.3			0.000	rd y< Ag. y N.
2	23.0	40.3	32.4	31.9	41.0	40.0	31.5	31.3	18.8			0.066	Ry Sw rU.
3	40.0	54.9	42.4	45.8	55.1	54.1	45.7	46.0	31.1			0.011	Ryw A little rain about 3 P.M.
4	31.7	33.9	23.2	29.6	34.5	33.9	31.6	55.0	29.8			0.011	yl y> N rU.
5	17.0	33.7	30.5	27.1	33.9	33.2	(28.9)	(34.2)	(16.6)			0.000	y Rd
6	32.5	44.0	38.0	38.2	44.1	43.6	37.0	36.7	27.9				yl
7	35.4	37.0	32.2	34.9	37.4	36.7	35.7	43.6	34.6			0.430	y A little rain.
8	34.0	41.1	27.5	34.2	41.5	40.8	36.8	36.8	32.0			0.005	Ry y> N rU.
9	16.3	40.0	36.6	31.0	40.4	39.8	28.0	40.8	16.9			0.000	Rr y< A10 RyU
10	29.5	36.5	28.3	31.4	37.1	36.4	34.0	41.2	26.7			0.000	Rrl SyU.
11	31.5	37.6	28.8	32.6	38.0	37.3	36.9	36.7	27.6			0.000	y A little snow in the forenoon. y> N.
12	17.3	29.8	18.9	22.0	30.2	29.8	22.7	37.8	17.2			0.000	Rrd
13	19.5	32.0	31.6	27.7	31.8	31.7	26.7	29.9	14.5			0.000	y A little snow after noon.
14	40.0	28.7	(7.2)	25.3	29.0	28.6	40.0	41.0	25.0			0.364	Rain previous night and early; snow later. rdU
15	†-2.5	10.7	5.9	4.7	11.1	10.8	-4.0	41.0	-2.2			0.011	
16	6.3		22.4										
17	27.5		37.1										
18	20.7	(26.4)	25.7	24.3	(27.0)	(26.5)	25.0	30.8	0.8				
19	31.2	40.6	33.6	35.1	41.4	40.5							
20	20.8	32.7	32.6	28.7	33.0	32.3	30.8	41.3	19.2			0.000	
21	22.2	27.0											
22	11.0						31.9	32.8	7.9				
23	30.5						36.0	36.0	19.8				
24	33.2	32.7	32.0	32.6	32.9	32.4						(0.320)	
25													
26													
27	27.5	43.6	33.4	34.8	44.3	43.3	37.1	41.2	16.3			0.000	
28	38.5		45.0				40.2	43.3	31.6			0.143	
29	43.5		(27.0)				43.0	47.8	40.8			0.143	
30	14.8		17.3										
31	1.5		7.2										
Sums	707.2	731.0	727.1	595.5				854.5	465.2			1.504	
Means	24.4	34.8	28.0	29.8				38.70	21.15				

Rainfall for month 1.50 inches.
Mean temperature for month (mean of the three means for 7, 2, 9,) 29.1 Fahrenheit.
Maximum temperature for month 55.0 - " - ; Dec. 4
Minimum " " " -2.2 - " - ; Dec. 15
" (reduced to standard of No. 4) -1.8 - " -

The velocity of the wind is merely estimated in miles per hour. See general remarks on observations of 1873.

Observations in parentheses ( ) were not made at the regular times. The actual times are given below.

Date	Regular times	Actual times
5	10 A.M.	11 A.M.
14	9 P.M.	9½ P.M.
18	2 P.M.	2½ P.M.
24	10 A.M.	11⅔ A.M.
29	9 P.M.	9½ P.M.

At 8¼ A.M. Dec. 1, the cloth about the wet bulb of the psychrometer being apparently dry, the following readings were made: Dry bulb 15.8
Wet " 14.3
No. 4 14.3

The relative humidity for December has been computed after applying the corrections for error of psychrometer given in the record for September, 1873.

Auroras noticed.
None this month.

* Dec. 13. Window found a little open. (This probably applies to the 10 A.M. observations)
† Dec. 15. Reading at 7 A.M. reported by Bridget at 9½ A.M.
‡ Dec. 19, 4 P.M. Psychrometer readings marked with interrogation points in original.
§ Dec. 15, 10 A.M., 4 P.M. Mercury of attached thermometer out of sight.
‖ Dec. 31, 4 P.M. Barometer reading entered in original 34.537

Observers as in October 1874 to Dec. 15 inclusive; A. Searle ill the rest of the month, and observations at 10, 2, and 4, made after Dec. 15 are by W. C. Winlock or N. T. Lane.

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General Remarks on the Observations for 1874.

Range of temperature

Minimum temperature observed in 1874 —4.3 February 2. This reading is reduced to the standard of thermometer No. 4.

Maximum temperature observed in 1874 93.0 June 30. This is the unchanged reading of the maximum thermometer.

Observers

The observation at 7 A.M. is usually, as heretofore, by Bridget Henry; that at 9 P.M. by W. C. Winlock or N. J. Lane; the remaining observations by A. Searle on week-days, by W. C. Winlock on Sundays. W. C. Winlock was absent during part of the summer, and was replaced by A. Searle. See the notes for each month with respect to the observers.

Instruments

The instruments used in 1874 were the same as those used in 1873. See general remarks for 1873.

Barometer

Barometer Newman 57 was dismounted between 10 A.M. and 4 P.M. Oct. 19; barometer Newman 68 (in West Transit Room) was used for the remainder of the year. No correction has been applied to its readings. It was found early in 1873 to stand about 0.005 inches below Newman 57. See remarks on observations for 1873.

Psychrometer

The psychrometer remains apparently in the same condition as in 1873. The relative humidity has been deduced throughout the year after applying the corrections for error of psychrometer given in the record for September, 1873. A few observations for error of psychrometer were made during the year, and will be found in the notes to the record of each month during which they were made.

When the wet bulb stood below the freezing point without freezing, as often happened, the relative humidity was deduced as usual by Guyot's Tables, as if the bulb had been covered with ice. This has also been the practice in former years. The uncertainty of the psychrometer has been considered to be too great to make the error resulting

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from this practice of any importance.

Maximum (set at 10 A.M. as in 1873)

See remarks on the maximum thermometer Casella 13399 in the general remarks on the observations of 1872 and 1873. No change has been made in the manner of reading the instrument.

Solar thermometer

The solar thermometer was again carried off by some one between 4 P.M. April 27 and 4 P.M. April 28, and has not been recovered.

Wind

The velocity of the wind has been merely estimated in miles per hour throughout the year, the anemometer not being in use.

The vane was removed February 15, and since then the direction of the wind has been merely estimated, no vane being in sight.

Rainfall

Gauge C remains in the same condition as at the end of 1873. On May 1, a wire fence was put round it to keep out the dogs and boys. The fence will probably affect the indications of the gauge much less than its visitors did before. The space enclosed is about square, measuring about 3½ feet on each side, and the fence is about 3 feet high. The wires are fastened to iron rods set up at each corner of the square. The gauge stands near the southwestern corner of the square.

Gauge A has been used as a check on any great error in gauge C, but is not considered trustworthy.

Falls of snow have been measured in the manner described in the general remarks on the observations of 1872.

Phenomena

The rainfall for the last four months of 1874 is extraordinarily small.

Mean temperature

The mean temperature for each month has been determined by taking the mean of the three means for 7 A.M., 2 P.M., 9 P.M., instead of, as heretofore, by the mean of the mean temperatures for those days when all three observations were taken.

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January 1875. Meteorological Record of

10 A.M.

Date	Barometer	Attached Thermometer	Casella 3235	Casella 12530	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's Tables	Wind	Clouds
1			13.8	13.2	13.0	13.0	15.0	11.6	65		
2											
3			25.7	24.9	24.8	24.8	26.3	21.3	56	5 SW	0
4	30.078	30.7	(29.8)	(29.0)	(29.8)	(29.0)	(30.7)	(27.2)	(78)	1 SW	10 Pr Pm
5	30.140	33.6	27.0	26.4	27.1	26.0	28.1	24.8	78	1 W	10 Pm Fm
6	30.528	25.0	16.6	15.9	15.7	15.4	17.4	14.7	79	1 SW	0
7	30.241	29.4	25.8	24.9	25.3	24.6	26.7	25.0	97	8 N	10 Pr; snowing
8	29.970	32.0	29.7	28.8	29.0	28.8	30.4	27.7	86	9 NW	3 Pm Fm
9	29.978	29.8	24.2	23.8	24.0	23.2	25.1	23.3	96	1 N	10 Pr; snowing
10	30.236	19.0	2.9	2.6	1.9	1.8	cannot be read			2 NW	0
11	30.288	10.0(?)	7.2	7.0	7.2	6.2	under fastenings			2 SW	9 Pr Rs
12	30.456	19.2	10.3	9.8	9.7	9.4	under fastening	9.3		5 NW	1 Rs
13	30.133	25.0	25.3	†22.4	24.3	24.7	27.9	26.3	99	6 NE	10 Pr; snowing
14	29.820	28.0	27.5	26.7	26.8	26.4	28.2	23.9	67	6 SW	2 Pm M Fm
15	30.004	15.0(?)	9.4	9.0	8.9	8.3	under fastenings			13 W	0 Rs
16	30.099	15.0(?)	11.0	10.5	10.5	10.1	11.8	8.6	65	8 W	2 Pr Rs
17	30.096	15.0(?)	11.1	10.8	10.6	10.1	12.0	9.1	71	6 N	0
18	30.171	10.0(?)	8.8	8.7	8.8	7.6	under fastenings			3 NW	10 Pr
19	30.168	10.0(?)	2.8	2.4	2.0	1.8	below graduation			7 NW	1 Rs
20	30.294	15.0(?)	8.8	8.1	7.8	7.9	under fastening	7.9		2 W	0
21	30.345	10.0(?)	7.7	7.8	8.2	6.8	under fastenings			2 NW	10 Pr
22	29.796	24.0	17.2	16.9	17.2	16.2	18.2	17.2	100	3 NW	10 Pr; fine sleet
23	30.148	25.9	23.0	22.3	22.5	22.0	23.9	20.2	70	5 SW	0 Fm
24	30.310	22.0	10.8	10.6	10.7	10.0	12.3	10.0	84	4 NW	7 Pr Pr
25	29.772	28.6	§29.9	29.9	30.0	29.9	31.4	27.4	73	7 SW	0
26	30.125	25.2	15.8	15.0	15.0	14.8	16.6	13.3	68	7 W	0
27	29.987	20.9	11.5	11.0	10.8	10.4	12.2	9.2	69	6 W	0 Rs
28	30.050	20.4	12.6	12.1	12.0	11.8	13.7	11.1	78	1 W	3 Rs
29	29.626	30.0	30.7	30.0	30.3	29.7	31.5	29.0	89	7 NW	10 Pr
30	29.732	32.2	25.8	25.1	25.9	25.0	26.7	24.4	89	3 N	10 Pr
31	30.008	29.6	25.7	24.6	25.6	24.5	26.6	23.6	81	1 SE	10 Pr

4 P.M.

Date	Barometer	Attached Thermometer	Casella 3235	Casella 12530	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's Tables	Wind	Clouds
1											
2											
3	30.100	36.7	28.1	27.6	27.5		26.5	24.8	97		
4	29.998	32.3	32.6	32.0	32.4		33.0	29.3	77	0 W	10 Pr Pm
5	30.160	34.4	28.9	28.4	28.6		29.7	25.3	66	6 W	10 Pr; a few snowflakes
6	30.489	33.4	24.6	24.0	24.0		25.0	20.4	59	1 SW	1 Pr Rs
7	30.014	32.4	28.5	27.8	28.0		29.2	27.8	100	11 NE	10 Pm Pr; raining
8	30.137	40.7	26.6	25.9	26.0		27.2	23.0	67	9 NW	4 Rs
9	29.736	31.4	27.0	26.5	26.7		27.8	26.1	98	1 W	10 Pr; sleet
10	30.258	25.8	9.6	9.6	9.1		cannot be read			2 SW	4 Rs
11	30.250	27.3	19.8	19.2	19.2		20.2	15.5	51	2 W	0 Rs
12	30.448	28.8	20.1	19.8	19.8		20.9	16.6	58	2 N	0 Rs
13	29.920	28.5	33.1	32.1	32.5		34.0	32.0	95	3 NE	10 Pr Rs; fine rain
14	29.845	32.2	25.8	25.0	25.1		26.3	20.2	42	9 W	2 Pr Fm
15	30.060	19.4	11.3	11.0	10.9		under fastenings	8.8		5 NW	0
16	29.971	24.0	19.7	19.4	19.7		20.4	16.0	55	5 SW	10 Pr
17	30.142	18.0	13.4	13.0	12.9		14.0	10.0	52	10 N	0
18	30.072	19.2	8.7	8.4	8.4		under fastenings			4 NW	10 Pr; snowing
19	30.154	21.0	14.1	13.9	13.8		15.0	11.4	60	6 W	0 Fm Rs
20	30.321	22.0	15.0	14.7	14.5		15.6	11.9	61	7 NW	0 Fm
21	30.207	18.6	14.7	14.1	14.1		15.2	14.0	100	1 NE	10 Pr; snowing
22	29.727	25.3	21.0	20.7	21.0		22.1	20.2	94	6 NW	1 Pr Rs
23	30.290	29.0	23.2	22.8	22.8		24.0	19.0	52	7 NW	0
24	‡30.100	24.6	21.3	20.7	21.3		22.2	19.6	84		
25	29.836	31.7	27.6	26.9	27.0		28.0	22.8	56	12 W	1 Fm
26	30.020	28.7	21.9	21.1	21.3		22.3	17.0	45	8 W	0
27	29.892	25.2	20.2	19.7	19.7		21.0	16.1	49	9 W	0 Rs
28	29.871	26.3	29.2	28.6	28.9		30.0	26.9	81	1 SE	10 Pm
29	29.600	31.8	33.7	33.0	33.5		34.4	30.8	79	3 N	10 Pm
30	29.761	32.9	30.9	30.3	30.5		31.1	27.9	80	1 SW	0 Rs Fm
31	29.862	30.9	28.8	28.6	28.2		29.3	27.5	96	2 NE	10 Pr

Sums of columns, number of observations, means, and reduction of barometer to the freezing point.

	10 A.M.	4 P.M.
Barometer	842.599	871.181
	28	29
	30.093	30.041
	+.017	+.001
	30.110	30.042
Attached thermometer	630.5	812.5
	28	29
	22.5	28.0
Casella 3235	528.4	659.4
	30	29
	17.6	22.7
Casella 12530	510.2	644.8
	30	29
	17.0	22.2
No. 4	515.4	647.4
	30	29
	17.2	22.3
Minimum after setting	500.2	
	30	
	16.7	
Dry bulb	492.7	644.4
	22	26
	22.4	24.8
	Omitting 1/27 Omitting for missing 1/27	missing 23.3
Relative humidity	1738	1854
	22	26
	79	71
Wind	132	133
	29	27
	4.6	4.9
Clouds	138	123
	29	27
	4.8	4.6

Gauge A not used this month.

Snow measures.

Jan. 7, 4 P.M. Snow 1¾ inches deep. 10 inches in cylinder 1⅞ inches across weigh 2⅜ ounces. Hence rainfall 0.149 inches to the inch of snow; or 0.251 inches in all. Little if any rainfall between 10 A.M. and 4 P.M.; hence this result is preferable to that given by gauge C for 10 A.M., which was 0.132 inches.

Jan. 18, 10 A.M. Snow light, too little for measurement, ⅛ to ¼ inch.

Jan. 22, 10 A.M. Snow 4 inches, nearly uniform. 11 inches in cylinder 1⅞ inches across weigh 2 ounces. Hence rainfall 0.114 inches to the inch of snow; 0.456 inches in all.

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Harvard College Observatory. January 1875.

Date	External Thermometer No. 4				Casella 3235		Casella 12530		Maximum after setting	Extreme temperatures		Rainfall in inches	Remarks
	7 A.M.	2 P.M.	9 P.M.	Mean	2 P.M.	9 P.M.	2 P.M.	9 P.M.		Maximum set at 10 A.M.	Minimum set at 10 A.M.	Gauge C Examined at 10 A.M.	
1	6.3		14.6			15.7		15.1	19.9	43.9	*−2.0		
2	21.2		30.2			31.0		30.1					Snow and rain.
3	22.5	28.6	22.1	24.4	29.0	23.1	28.5	22.4	28.0	31.1	12.6	0.585	
4	24.2	32.6	30.4	29.1	32.4	30.8	31.6	30.1	(29.9)	(29.6)	(21.7)	0.000	A few snowflakes about noon.
5	23.0	30.7	20.0	24.6	30.7	20.5	30.1	20.0	27.6	32.4	22.2	0.000	A few snowflakes about 4 P.M.
6	10.0	23.0	21.6	18.2	23.6	22.0	22.9	21.7	17.4	30.6	9.0	0.000	rl
7	21.5	29.7			30.0		29.6		26.0	25.5	15.6	**(0.251)	y {Snow previous night and early in the day. A little fine rain later. Rain & sleet in the evening.}
8	26.5	(27.1)			(27.6)		(26.9)		29.6	30.7	24.8	0.441	rl
9	20.0	26.7	10.8	19.2	26.8	11.0	26.1	10.7	24.8	29.8	17.5	0.000	y {A little snow, beginning about 9¾ A.M. Sleet about 4 P.M.}
10	−2.0	8.7	3.8	3.5	9.1	4.7	9.0	4.7	3.0	28.6	−2.0	0.099	rd
11	−1.0	19.2	10.6	9.6	20.0	11.0	19.2	10.9	9.2	11.0	−1.1	0.000	rd
12	5.2	18.5	13.8	12.5	19.0	14.4	18.4	14.0	12.0	19.9	2.7	0.000	rd
13	20.0	32.3	20.4	24.2	32.8	20.8	32.0	20.2	26.4	26.3	9.6	0.055	{Snow beginning about 9 A.M. (perhaps a little in previous night). Snow & fine rain in the day; amount small.}
14	25.5	28.6			29.0		28.5		27.5	33.0	18.8	0.110	Rrl
15	9.0	11.7	7.5	9.4	12.0	8.3	11.8	8.0	11.5	29.5	7.5	0.000	rd
16	5.5	21.5			21.4		20.9		12.3	12.4	5.2	0.000	y Rd
17	5.0	13.8	8.3	9.0	14.2	9.0	13.8	8.9	11.0	21.0	4.2	0.000	rd
18	4.0	9.7			9.9		9.5		10.6	16.0	3.6	0.000	yd Snow beginning about noon. vll.
19	−4.6	11.3	6.4	4.4	11.9	7.1	11.5	7.1	5.0	11.3	−4.7	0.055	rd
20	0.8	14.7			15.1		14.9		10.2	14.0	0.6	0.000	rd
21	0.8	13.0	12.3	8.7	13.3	12.6	12.9	12.3	9.5	15.8	−6.2	0.000	y Began snowing about noon. {Snow continued through the day.}
22	14.3	21.2	21.1	18.9	21.2	22.0	20.9	21.1	18.0	17.3	6.6	**0.456	y Snow or sleet. Cleared off about 3 P.M.
23	19.2	25.3			25.9		25.0		23.4	23.5	16.2	**(0.175)	rl
24	1.5	20.6	32.6	18.2	20.2	33.0	20.0	32.2	10.0	25.3	−0.9	0.000	y Snow after 4 P.M. Some rain in the evening.
25	25.3	31.1	20.7	25.7	31.3	21.0	30.8	20.6	29.8	33.3	9.9	0.474	rl dn< N.
26	11.5	21.5			22.0		21.3		17.7	31.8	10.1	0.000	r Rd
27	5.5	18.6	16.0	13.4	19.0	16.5	18.4	16.0	13.5	22.0	4.9	0.000	r Rd
28	5.5	28.7	30.7	21.6	29.2	30.8	28.3	30.0	14.0	20.0	2.6	0.000	Rrd y< A10. Snow after about 5 P.M.
29	30.7	34.2	28.0	31.0	34.5	28.1	33.9	27.7	30.3	33.3	11.6	**0.360	yl Snow in the evening.
30	22.5	31.3	22.1	25.3	30.7	22.3	30.2	22.1	26.6	34.3	22.1	**0.163	y y—A2. A little snow earlier.
31	16.3	28.1	27.7	24.0	28.2	28.1	27.8	27.5	27.1	32.0	14.4	0.000	y {Snowing a little between 1½ and 3½ P.M. More evening in this evening.}
Sums	395.7	662.0	431.7	374.9						765.2	257.1	3.224	Rainfall for month 3.22 inches.
Means	12.8	22.8	18.8	17.9						25.51	8.57		Mean temperature for month (mean of the three means for 7, 2, 9) 18.1 Fahrenheit.

Maximum temperature for month 43.9 Fahrenheit; Jan. 1
Minimum " " " −6.2 "
" (reduced to standard of No. 4) −5.7 "

The velocity of the wind is merely estimated in miles per hour. See general remarks on observations of 1873.

The relative humidity for January has been computed after applying the corrections for error of psychrometer given in the record for September 1873.

Observations in parentheses ( ) were not made at the regular times. The actual times are given below.

Date	Regular times.	Actual times
4	10 A.M.	10½ A.M.
7	10 A.M.	4 P.M.
8	2 P.M.	2½ P.M.
23	10 A.M.	4 P.M. (Jan. 22)

The original record gives a barometer reading 10 A.M. Jan. 14 as 35.017; the reading was probably about 30.0 attached thermometer too low to read.

A vane and anemometer were set up on the barn Jan. 31.

Snow measures (continued).

Jan. 22, 4 P.M. Snow 5 inches deep (over old crust). 15 inches of this snow in cylinder 1⅞ inches across weigh 3 ounces. Hence rainfall 0.126 inches to the inch of snow; in all 0.630 inches. Deducting 0.456 fallen before 10 A.M. there remains 0.174 inches. Gauge C gives 0.177 inches.

Jan. 25, 10 A.M. No satisfactory way of measuring the rainfall by snow measures, as the new snow cannot be well distinguished from that previously fallen, which has probably settled somewhat. The measurement by gauge C is likely to be as nearly right as any which can be had.

Jan. 29, 10 A.M. New snow about 2 inches deep. 10 inches in cylinder 1⅞ inches across weigh 2⅞ ounces. Hence rainfall 0.180 inches to the inch of snow; in all 0.360 inches. Gauge C gave 0.353 inches.

Jan. 30, 10 A.M. New snow seems to be about 2 inches deep. 10½ inches in cylinder 1⅞ inches across weigh 1¼ ounces. Hence rainfall 0.075 inches to the inch of snow; in all 0.150 inches. Gauge C gives 0.176 inches; mean adopted 0.163.

* Minimum Jan. 1 7.8??? in original record; thermometer seen at −2.0 by A. Searle some time Dec. 31.
† Jan. 13, 10 A.M. Snow fallen into case of Casella 12530.
‡ Jan. 24, 4 P.M. N. T. Lane entered the barometer reading as 31.019, but has no doubt that the meant 30.100
§ Jan. 25, 10 A.M. Icicle on bulb of Casella 3235.
‖ Mercury of attached thermometer often out of sight; the readings marked (?) are estimates.
** Rainfall determined by measures of snow.

Auroras noticed

None this month.

Zodiacal light

noticed about 6½ P.M. Jan. 26; vertex near Aries; northern edge near southern edge of Square of Pegasus.

Earthquake suspected.

Jan. 9, 10½ P.M. Noise and shaking of house 12 Madison Street noticed by A. Searle. George Winlock noticed something similar at the Observatory. Something of the same sort said to have been noticed at Chelsea.

Wooden pins set up during this month on piers of Meridian Circle to indicate earthquakes.

Observers as in October, 1874; (observations 10 A.M. Jan. 1 by N. T. Lane.) Sunday observations at 10, 2, 4, by N. T. Lane or W. C. Winlock.

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February 1875. Meteorological Record of

10 A.M.

Date	Barometer	Attached Thermometer	Casella 3235	Casella 12530	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's Tables	Wind	Clouds
1	29.819	33.6	27.9	27.4	27.8	27.0	28.8	25.4	77	7 NW	4 Pr Rs Fm
2	30.345	27.6	20.2	19.6	19.7	19.2	21.3	18.0	73	1 SW	5 Rs
3	29.991	32.0	31.8	30.9	31.6	30.8	32.6	31.8	100	0 NW	10 Pm fog
4	29.669	35.9	21.7	21.3	21.2	20.8	22.5	17.8	55	12 SW	3 Pr Rs
5	30.199	22.3	13.0	12.8	12.4	11.8	14.0	11.0	71	12 W	0
6	30.069	24.8	23.0	22.2	22.3	21.8	23.7	19.1	57	6 SW	7 R Rs Fm
7	30.399	*15.0(?)	−1.0	−1.5	−1.8	−2.1	cannot be read			4 NW	10 R
8	29.809	*10.0(?)	5.0	4.7	4.7	4.1	cannot be read			5 NW	10 R; snowing
9	29.848	*15.0(?)	1.8	1.5	1.1	1.1	cannot be read			11 W	9 R Rs; thin
10	30.363	*10.0(?)	4.0	3.6	3.1	3.0	cannot be read			10 NW	0
11	30.068	22.2	26.7	26.0	26.4	25.8	27.5	25.5	94	6 SE	10 R; snowing
12	29.883	23.8	10.5	10.2	9.8	9.2	{under fastening}	8.4		10 SW	1 Fm
13	30.059	21.8	10.0	9.7	9.3	9.0	{under fastening}	8.0		5 W	0 Rs
14	29.877	21.5	13.0	12.4	12.3	12.0	14.0	10.9	69	2 SW	Rs
15	29.858	*15.0(?)	5.2	5.0	4.6	4.2	6.0	{cannot be read}		6 W	1 Rs
16	30.112	17.0	10.2	9.8	9.7	9.2	{under fastening}	8.4		7 W	8 Rs Fm R
17	29.952	19.0	16.9	16.3	16.6	16.1	18.0	15.0	75	3 SW	10 R
18	30.118	18.5	11.4	11.1	11.0	10.3	12.0	9.3	75	6 NW	0 Fm
19											
20	29.535	28.6	33.4	32.7	33.3	32.3	34.1	32.4	98	0 calm	10 Pm fog
21	29.683	29.8	27.8	27.0	27.1	23.3	28.8	24.0	61	8 SW	3 Fm
22											
23	30.059	34.0	45.5	44.3	44.7	44.5	46.0	39.5	59	SW	
24	29.831	41.0	48.1	47.5	48.4	47.5	49.5	48.0	98	SE	
25	29.711	41.5	42.3	41.8	42.4	41.5	43.0	41.3	96	SW	
26	29.711	37.0	34.5	33.7	33.6	33.5	34.9	29.0	57	SW	
27	29.817	31.1	20.8	20.5	21.0	20.0	21.2	19.3	73	2 NW	10 R; snowing
28	29.863	22.5	11.4	10.6	10.5	10.8	§13.5(?)	§11.0(?)	80	SW	

4 P.M.

Date	Barometer	Attached Thermometer	Casella 3235	Casella 12530	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's Tables	Wind	Clouds
1	29.949	36.0	27.6	26.9	27.1		28.4	23.2	56	7 W	0
2	30.308	34.6	33.0	32.5	32.8		33.4	28.0	60	3 S	10 Rs haze
3	29.696	35.7	42.2	41.2	41.9		42.9	41.1	97	6 SE	10 Pm; raining
4	29.749	38.0	20.2	20.0	19.8		21.0	17.0	62	14 W	4 R Fm M
5	30.211	30.1	17.7	17.0	17.0		18.3	14.3	59	10 W	0 Rs
6	30.160	28.5	18.7	18.4	18.1		19.2	14.5	49	13 W	1 R Rs Fm
7	30.249	18.6	4.1	3.9	3.7		cannot be read			7 N	10 R
8	29.768	22.2	14.5	14.1	14.4		15.2	12.2	72	1 NW	10 R; thin
9	29.900	*15.0(?)	−0.8	−0.8	−1.2		Cannot be read			12 NW	5 R
10	30.407	22.3	18.2	17.8	17.8		18.9	14.7	56	4 NW	2 Rs
11	29.604	28.0	37.7	36.7	37.4		38.8	36.8	95	15 S	10 Pm; raining
12	29.906	27.3	12.2	12.0	11.7		13.0	9.5	60	10 W	4 R Fm M
13	29.957	27.4	18.1	17.8	17.8		19.0	14.3	49	7 W	5 Rs
14	29.791	25.8	14.0	13.6	13.5		14.8	12.0	76	W	
15	29.837	21.1	12.3	12.1	12.0		13.0	9.4	58	14 W	9 Rs; thin
16	30.039	23.7	18.9	18.5	18.7		19.7	15.7	61	6 W	9 R Rs
17	29.728	23.2	27.7	27.1	27.4		28.3	24.2	69	6 SW	2 M Fm
18	30.148	24.9	16.0	15.7	15.6		16.8	13.0	87	5 NW	0
19	29.898	24.8	29.7	29.0	29.5		30.0	27.6	89	3 SE	10 R; snowing
20	29.288	30.8	35.5	34.9	35.1		36.2	34.8	100	1 E	10 Pm; raining
21	29.863	34.9	28.8	28.3	28.4		29.2	23.3	48	9 SW	7 M Fm
22											
23	30.044	40.0	50.2	49.8	49.9		50.7	42.3	50	SW	
24	29.767	43.9	52.2	51.5	52.0		53.0	50.0	88	SW	
25	29.459	43.0	42.3	41.5	42.0		43.0	41.0	94	E	
26	29.747	39.0	30.2	29.8	29.8		31.0	25.3	54	20 W	5 Pm Fm M
27	29.578	31.8	20.0	19.4	19.6		20.7	19.2	100	7 N	10 R; snowing
28	30.005	20.6	12.0	10.8	11.4		cannot be read			W	

Sums of columns, number of observations, means, and reduction of barometer to the freezing point.

	10 A.M.	4 P.M.
Barometer	778.648	807.056
	26	27
	29.948	29.891
	+.009	−.002
	29.957	29.889
Attached Thermometer	650.5	791.2
	26	27
	25.0	29.3
Casella 3235	515.1	653.2
	26	27
	19.8	24.2
Casella 12530	501.1	639.5
	26	27
	19.3	23.7
No. 4	502.8	643.2
	26	27
	19.3	23.8
Minimum after setting	486.7	
	26	
	18.7	
Dry bulb	491.4	654.5
	19	24
	25.9	27.3
	Or, adding estimate for Feb. 7, 8, 9, 10, 12, 13, 16, mean 20.6	Or, adding estimate for Feb. 7, 9, 28, mean 24.9
Relative humidity	1368	1689
	18	24
	76	70
Wind	123	180
	21	22
	5.9	8.2
Clouds	111	133
	20	22
	5.5	6.0

Gauge A not used this month.

Snow measures.

Feb. 1, 10 A.M.: New snow apparently about 4 inches deep. 16 inches in cylinder, 1 inches across weigh 2 ounces. Hence rainfall 0.078 inches to the inch of snow; in all 0.314 inches. Gauge C cleared out without examination.

Feb. 28, 10 A.M. New snow apparently about 3½ inches deep. March 7, 10 A.M. The above measurement confirmed, and 10 inches of snow, in cylinder 1 inches across found to weigh 2½ ounces. Hence rainfall 0.141 inches to the inch of snow; in all 0.496 inches. Gauge C gave 0.121 inches; weight [illegible] instead.

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Harvard College Observatory. February 1875.

Date	External Thermometer No. 4				Casella 3235		Casella 12530		Maximum after setting	Extreme temperatures		Rainfall in inches	Remarks
	7 A.M.	2 P.M.	9 P.M.	Mean	2 P.M.	9 P.M.	2 P.M.	9 P.M.		Maximum set at 10 A.M.	Minimum set at 10 A.M.	Gauge C examined at 10 A.M.	
1	24.5	27.7	15.8	22.7	28.0	16.7	27.3	16.5	28.0	30.8	24.2	‡0.314	ys y< Aq. rN.
2	10.0	33.0	23.8	22.3	32.6	25.0	31.9	24.6	21.0	28.0	9.3	0.000	rd y=w< A10. Sr U.
3	24.8	42.2			42.8		42.0		31.6	33.2	18.1	0.011	yf Rain after noon.
4	27.8	23.5	10.1	20.5	23.5	11.1	23.6	10.9	23.6	45.0	20.8	0.452	v Rdn {Slight snow squall about 2½ P.M.} rU.
5	8.2	17.7	13.0	13.0	18.2	14.0	17.8	14.0	15.8	25.2	7.2	0.000	rd
6	15.0	22.2	9.0	15.4	22.6	10.0	22.1	9.8	23.7	23.2	9.9	0.000	yd y> AT. {A few snowflakes about noon.}
7	−5.5	4.0	2.9	0.5	4.0	3.5	4.0	3.2	−2.0	24.0	−5.8	0.000	Ryz d A little snow following night.
8	0.5	12.7	11.9	8.4	12.7	12.8	12.4	12.5	6.0	6.0	†−3.0	0.011	yd {A little snow about 10 A.M.} RbN. y< AT. vU
9	−1.8	(1.9)	−5.6	−1.8	(2.2)	−4.1	(2.3)	−4.2	4.8	15.0	−1.9	0.000	Ry d y< A11 y> A3. rU.
10	−5.0	15.3	10.6	7.0	15.9	12.0	15.3	11.5	5.0	5.0	−5.5	0.000	rd d>
11	20.0	33.8	37.0	30.3	34.0	38.0	33.6	37.6	26.0	26.3	3.0	0.055	ya Snow early in the day, changing to rain.
12	7.0	13.4	5.2	8.5	13.9		13.6		13.0	40.6	7.1	0.673	rd y< A10. y> A3.
13	6.3	16.7	11.4	11.5	17.2	12.2	16.8	12.0	11.1	14.1	3.0	0.000	d Rz
14		14.7	4.3		15.3	5.9	14.8	5.0	16.0	18.0	7.4	0.000	rd
15	−1.0	11.8	7.3	6.0	12.2	8.2	11.8	8.0	7.0	18.4	−3.0	0.000	rd
16		(19.2)	13.4		(19.4)	14.0	(18.7)	13.9	11.2	12.6	0.4	0.000	Ryd
17		25.1	(11.7)		25.4	(13.0)	24.7	(12.6)	18.0	19.6	4.0	0.000	y Rd A few snow squalls. rT0½.
18		14.7	9.4		15.1	10.8	15.0	10.2	12.4	27.5	5.1	0.000	rd
19	(7.8)	31.1			31.0		30.6		(29.3)	(31.0)	(3.3)		yd d> Snow after 2 P.M.
20	31.2	35.3	33.4	33.3	35.8	34.0	35.0	33.5	32.4	32.9	26.0	0.044	yf Light rain most of the day.
21	23.5	29.5	21.0	24.7	29.9	22.0	29.3	21.4	28.7	35.5	9.4	0.364	
22	12.5		(31.4)			(32.2)		(31.5)					
23	36.3		39.8			40.9		39.9	41.5	44.6	12.5	0.000	
24	41.0		42.2			43.0		42.2	44.0	50.6	36.8	0.055	
25	39.5	43.0	43.4	42.0	43.4	44.3	42.9	43.4	42.0	53.2	37.8	0.011	
26	30.4	33.3	24.4	29.4	33.8	25.6	33.1	24.8	35.9	46.6	29.2	1.037	v Ry A few snowflakes.
27	20.8	21.2	17.0	19.7	20.9	18.0	20.5	17.5	22.1	36.6	19.8	0.022	ys Snow most of the day.
28	7.0	11.6	7.5	8.7	12.4	8.8	11.4	8.0	18.4	22.3	6.7	‡0.494	rdn
Sums	380.8	554.6	451.3	322.1						765.8	281.8	3.543	
Means	15.9	22.2	17.4	17.0						28.36	10.44		

Rainfall for month 3.54 inches.

Mean temperature for month (mean of the three means for 7, 2, 9) 18.5 Fahrenheit.

Maximum temperature for month 53.2 Fahrenheit; Feb. 25

Minimum temperature for month −5.8 Fahrenheit; Feb. 7

" (reduced to standard of No. 4) −5.2

The velocity of the wind is merely estimated in miles per hour. See general remarks on observations of 1873.

The relative humidity for February has been computed after applying the corrections for error of psychrometer given in the record for September, 1873.

Observations in parentheses ( ) were not made at the regular times. The actual times are given below.

Date	Regular times	Actual times
16	2 P.M.	2⅓ P.M.
16	2 P.M.	2 6/13 P.M.
17	9 P.M.	11¾ P.M.
19	7 A.M.	7⅓ A.M.
22	9 P.M.	11 7/12 P.M.

* The mercury of the attached thermometer was often out of sight; the readings marked (?) are estimates.

† The minimum recorded Feb. 8 probably belongs to the forenoon of Feb. 7; in the afternoon of Feb. 7 the index was noticed to be standing at about −3

‡ Rainfall Feb. 1 and 28 determined by measures of snow.

§ Psychrometer reading Feb. 28, 10 A.M. marked with interrogation points in the original record.

Auroras noticed.

Feb. 26, 7 P.M. Some aurora.

Feb. 28, 8½ P.M. Some aurora with streamers.

Zodiacal light.

Feb. 1, 7 P.M. Zodiacal light conspicuous; position as on Jan. 26.

Feb. 28, 8½ P.M. Some zodiacal light.

Observers ordinarily as follows:

7 A.M. Observation by Bridget Henry

9 P.M. " N. T. Lane or W. C. Winlock

10 A.M., 2 P.M., 9 P.M. Observations

On Sundays by N. T. Lane or W. C. Winlock

" other days " A. Searle

Observation at 9 P.M. Feb. 12 by J. F. McCormick

" " 7 A.M. " 15 " W. C. Winlock

" " 7 A.M. " 19 " A. Searle

Observations " 10 A.M. & 4 P.M. Feb. 23, 24, 25, } by N. T. Lane.

" 10 A.M. Feb. 26

" 2 P.M. Feb. 25

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March 1875. Meteorological Record of

10 A.M.

Date	Barometer	Attached Thermometer	Casella 3235	Casella 12530	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity by Guyot's Tables	Wind	Clouds
1	30.394	18.6	10.0	9.8	10.8	9.2	{under freezing}	8.5		0 calm	10 R
2	29.704	26.7	23.2	22.6	23.2	22.2	24.0	22.2	96	2 NW	10 R
3	30.316	31.0	21.2	20.7	21.2	20.4	22.1	18.9	75	3 SE	10 R
4	30.051	25.5	15.2	14.8	14.9	14.1	16.2	14.8	100	14 N	10 R; snowing
5	30.356	22.9	24.7	23.5	24.7	23.6	25.7	22.2	74	6 N	10 R
6	29.984	31.9	31.4	30.6	31.7	30.6	32.3	29.9	90	0 NW	10 R; snowing
7	29.955	34.9	36.9	33.5	37.0	36.0	37.6	32.7	67	1 SW	
8	29.670	34.2	30.0	28.7	29.0	28.9	31.0	27.5	78	16 NE	10 R Fm
9	30.138	33.0	36.3	32.7	36.0	35.2	37.2	31.8	63	5 SE	8 R Fm Rs
10	29.894	35.8	38.0	*33.2	38.3	37.1	38.8	34.0	69	4 SE	10 Pm
11	29.930	32.7	34.0	32.6	33.4	33.1	34.8	29.3	61	5 W	0
12	29.838	37.4	43.6	42.4	43.0	42.5	44.2	39.1	70	3 SW	0 haze
13	30.050	37.3	33.4	32.8	33.9	32.2	34.4	30.0	71	0 W	10 R
14	30.120	36.1	*35.8	32.6	34.9	34.9	36.4	32.3	74	1 NW	0
15	29.959	39.4	35.5	34.8	35.0	34.7	36.1	34.6	100	1 NE	10 Pm; raining
16	29.639	38.3	36.9	36.3	36.5	36.1	38.0	35.4	90	2 N	10 Pm
17	29.490	39.1	40.8	39.5	40.0	39.9	41.4	32.8	37	6 W	3 R Fm
18	29.817	25.4	15.3	14.8	14.8	14.1	16.0	12.0	55	25 W	2 R Fm
19	30.076	25.2	23.0	22.4	22.7	21.8	23.7	18.1	44	10 NW	9 R Rs; thinn
20	29.920	28.7	19.1	18.4	18.8	18.1	20.0	18.6	100	10 NE	10 R; snowing
21	29.861	27.2	24.6	24.5	25.4	23.8	25.0	20.5	60	2 NW	
22	29.997	24.5	17.8	17.0	17.3	16.6	18.4	14.1	54	8 NW	0
23	30.280	22.2	20.1	19.8	20.0	19.3	21.0	16.0	47	7 NW	0
24	30.204	25.6	32.4	31.6	32.4	31.6	33.2	28.0	62	6 SE	10 R Pm
25	29.748	32.7	34.9	33.9	34.3	33.9	35.7	30.1	61	16 NW	4 R Fm
26	30.163	30.7	32.5	31.8	32.1	31.7	33.2	27.1	53	1 W	0 Rs
27	29.871	37.0	44.0	42.9	43.3	43.1	44.8	38.1	56	6 SW	0
28	30.168	37.0	35.0	34.1	34.3	33.9	35.6	28.2	50	10 NW	0
29	30.394	34.5	35.0	34.1	34.6	34.2	36.0	30.2	59	0 calm	2 haze
30	30.365	41.0	42.9	41.9	42.5	41.9	43.6	35.0	40	1 SW	0 haze
31	30.541	38.8	39.0	38.0	38.5	38.0	39.6	35.6	77	8 NE	10 Pm

4 P.M.

Date	Barometer	Attached Thermometer	Casella 3235	Casella 12530	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity by Guyot's Tables	Wind	Clouds
1	30.207	23.3	12.3	11.9	12.1		13.0	12.0	100	2 NE	10 R; snowing
2	29.871	32.6	32.1	31.6	31.5		32.1	28.8	81	5 E	10 R
3	30.160	31.0	26.0	25.2	25.4		26.6	23.7	82	9 E	10 R
4	30.250	29.6	22.2	21.4	22.0		23.0	20.0	79	6 NE	10 R; snowing
5	30.317	31.2	33.0	31.9	32.4		33.4	29.0	70	5 E	10 R
6	29.880	36.0	36.8	36.2	36.7		37.0	33.7	82	0 E	10 Pm
7	(29.900)	(38.2)	(36.3)	(35.4)	(35.6)		(36.5)	(32.4)	(74)	(4 SW)	
8	29.885	37.5	36.0	35.0	35.3		36.6	29.9	52	7 N	0 Fm
9	30.090	39.9	38.4	37.8	38.5		38.8	33.3	62	0 S	10 Pm
10	29.792	37.5	38.0	37.2	37.7		38.8	35.5	82	4 SE	10 Pm; a little rain
11	29.999	40.8	39.1	38.2	38.7		39.7	32.2	45	5 W	0 Fm
12	29.908	44.7	45.5	44.5	45.0		45.9	37.7	48	7 NW	1 Pm Fm haze
13	29.945	40.3	35.0	34.4	34.5		35.7	32.1	78	2 E	10 Pm
14	30.100	43.0	41.8	40.4	40.8		42.0	36.8	66	3 SE	7 R Rs
15	29.836	40.0	36.4	35.6	36.0		37.1	35.5	99	4 E	10 Pm; raining
16	29.555	41.0	38.0	37.2	38.3		39.2	36.0	84	4 NE	10 Pm
17	29.508	43.6	34.0	33.7	34.0		34.6	28.7	57	17 W	10 R; snowing
18	29.829	30.3	21.9	20.9	21.0		22.5	18.0	57	25 W	0 Rs
19	30.084	33.1	29.8	29.0	29.2		30.2	23.4	41	10 NW	0 Rs
20	29.697	29.7	22.6	21.9	22.1		23.2	21.5	97	20 N	10 R; snowing
21	29.858	32.9	22.0	21.4	21.5		27.3	20.6	37	5 NW	
22	30.000	30.6	23.0	22.3	22.5		23.6	18.4	49	7 NW	0
23	29.294	31.7	28.7	27.9	27.9		28.7	22.6	46	5 SE	0
24	30.010	30.4	32.7	32.0	32.4		33.3	30.4	85	6 SE	10 R; snowing
25	29.870	36.0	34.9	34.0	34.3		35.4	28.7	50	16 NW	3 R Pm M Fm
26	29.968	38.2	37.4	36.8	36.8		37.6	31.0	54	15 S	10 Pm
27	29.803	44.7	47.8	47.0	47.4		48.3	37.9	34	7 W	0
28	30.221	40.7	39.4	38.6	38.6		39.8	31.0	45	4 NW	1 R Rs
29	30.316	42.5	43.8	42.9	43.3		44.4	35.6	40	2 S	0
30	30.338	46.7	44.8	43.7	43.8		45.1	39.2	62	4 SE	1 haze Fm
31	30.547	45.7	38.9	38.0	37.8		39.0	34.5	72	7 E	9 Pm

Sums of columns, number of observations, means, and reduction of barometer to the freezing point.

	10 A.M.	4 P.M.
Barometer	930.893 31 30.029 −.009 30.020	930.038 31 30.001 −.023 29.978
Attached Thermometer	985.3 31 31.8	1143.4 31 36.9
Casella 3235	942.5 31 30.4	1048.6 31 33.8
Casella 12530	906.3 31 29.2	1024.0 31 33.0
No. 4	934.5 31 30.1	1033.1 31 33.3
Minimum after setting	912.7 31 29.4	
Dry bulb	956.0 30 31.9 Or, adding estimate for March 1 mean 31.2	1068.4 31 34.5
Relative humidity	2033 30 68	2010 31 65
Wind	179 31 5.8	217 31 7.0
Clouds	168 29 5.8	172 29 5.9

Gauge A not used this month.

Snow measures; the number of inches weighed is the length of a cylinder 1½ inches across.

March 2, 10 A.M. New snow 8.2 inches deep by mean of 10 measures ranging from 7½ to 10 inches. 11 inches weigh 4⅞ ounces (sleet forming a heavy crust). Hence rainfall 0.235 inches to the inch of snow; in all 1.930 inches. Gauge C cleared out without examination.

Snow measures continued on opposite page.

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Harvard College Observatory. March 1875.

Date	External Thermometer No 4 7 A.M.	2 P.M.	9 P.M.	Mean	Casella 3235 2 P.M.	9 P.M.	Casella 12530 2 P.M.	9 P.M.	Maximum after setting	Extreme temperatures Maximum set at 10 A.M.	Minimum set at 10 A.M.	Rainfall in inches. Gauge C examined at 10 A.M.	Remarks
1	3.5	13.1	24.2	13.6	13.8	25.0	13.0	24.0	12.1	19.9	2.0	0.000	ys Began snowing about noon.
2	16.5	32.2	28.4	25.7	31.8	29.3	31.2	28.5	24.0	30.1	8.6	‡1.930	y Thawing in the middle of the day.
3	15.7	25.7			26.1		25.5		22.2	32.8	15.7	0.000	y Rd Snow beginning about 4½ P.M.
4	14.5	21.4	18.6	18.2	21.6	19.0	20.3	18.7	16.0	26.9	13.3	‡(0.732)	ys {Snowing hard at first and drifting; snow light after 10 A.M.; snow ceased about 5 P.M.; clear at times later.}
5	12.2	32.7	29.4	24.8	33.3	29.9	31.4	29.0	25.0	24.6	12.0	‡0.015	y Thawing. Cloudy; broke a little about noon, and clouded again.
6	27.0	38.4	32.1	32.5	38.7	32.7	37.5	31.9	31.4	33.8	23.6	0.044	y Thawing. A little snow towards night. A little snow preceding night } Early today.
7	27.3	40.4	33.0	33.6	40.6	33.6	40.0	32.9	37.0	38.7	26.7	0.000	y Thawing. Snow beginning about 5 P.M.
8	27.5	34.0	27.9	29.8	34.7	28.0	32.9	28.0	30.1	40.8	26.5	‡0.734	Snow held up about ½ A.M. Rs N.
9	24.3	(41.0)	33.0	32.8	(40.2)	33.7	(39.8)	33.0	36.0	36.0	20.5	0.000	y Clouds broke a little about 10 A.M. and closed again.
10	28.0	39.5	(34.8)	34.1	39.4	(35.0)	39.1	(34.7)	38.0	40.5	26.2	0.000	y {A little snow between 10 A.M. and 1 P.M.} Cleared off in the evening.
11	25.4	38.5	30.3	31.4	39.0	30.8	38.0	31.4	33.8	40.4	24.5	0.033	r Thawing. Evening cloudy.
12	35.3	47.6			48.0		46.9		42.7	43.0	29.6	0.011	rw Thawing fast.
13	27.8	36.1	32.3	32.1	36.9	32.4	36.0	32.0	33.8	48.0	26.3	0.000	yc A few snowflakes about 2 P.M.; more after 4 P.M.
14	25.2	(43.3)	(31.7)	33.4	(43.5)	(32.8)	(42.6)	(31.7)	31.0	38.3	25.1	0.000	Rrw yN.
15	33.5	36.1	35.9	35.2	36.6	36.3	35.8	35.6	35.2	43.5	33.4	0.353	ya Day and following night raining.
16	33.5	38.5	35.0	35.7	38.9	35.2	38.1	34.8	36.4	36.4	33.3	2.802	y
17	31.0	37.8			38.1		37.2		40.1	40.1	31.0	0.044	v A few snowflakes about 4 P.M. rN.
18	13.3	18.1	17.0	16.1	19.0	17.6	18.0	17.3	17.6	40.2	13.1	0.000	rdn
19	15.5	29.0	22.8	22.4	29.8	23.7	28.8	22.2	23.8	23.3	14.1	0.000	Rrln
20	15.2	19.7	16.7	17.2	20.0	17.3	19.2	16.7	20.6	29.7	14.5	‡0.384	ys Snowing hard early; less snow later.
21	18.7		11.4			12.0		11.7	25.2	25.2	15.6	‡0.682	rd
22	7.0	22.0	16.1	15.0	22.1	16.4	21.8	16.0	18.7	27.6	6.2	0.000	rRd
23	8.7	25.9	16.9	17.2	26.0	17.9	25.3	17.4	20.8	23.0	7.1	0.000	rl
24	11.0	34.0	32.9	26.0	33.8	33.6	33.3	32.3	31.7	32.0	9.1	0.000	y Snow beginning about noon & lasting into the night.
25	28.5	35.3	30.1	31.3	35.8	30.6	35.0	30.0	35.0	34.6	26.6	‡0.276	Rrln
26	21.2	40.0			40.3		39.7		32.4	36.9	19.7	0.000	l y< y N. A little rain and snow after 4 P.M.
27	33.5	48.8	(40.0)	40.8	49.1	(40.8)	48.6	(40.0)	43.4	43.4	31.7	0.055	rw
28	29.5	(37.9)	31.3	32.9	(38.5)	31.9	(37.8)	31.6	35.0	48.9	29.0	0.000	r Rw
29	24.3	41.9	33.8	33.3	42.0	34.6	41.1	34.1	35.1	38.9	23.2	0.000	rw
30	29.5	45.2	34.8	36.5	46.0	35.2	45.2	34.8	42.3	43.2	28.5	0.000	rw
31	34.1	39.7			40.4		39.2		39.0	46.7	30.0	0.000	y Rc
Sums	698.2	1033.8	730.4	701.6						1107.4	646.7	8.095	Rainfall for month 8.10 inches.
Means	22.5	34.5	28.1	28.1						35.72	20.86		

Mean temperature for month (mean of the three means for 7, 2, 9,) 28.4 Fahrenheit

Minimum temperature for month 2.0 Fahrenheit (March 1).

Minimum reduced to standard of No. 4 2.7 Fahrenheit.

Maximum temperature for month 48.9 Fahrenheit (March 28).

The velocity of the wind is merely estimated in miles per hour. See general remarks on observations of 1873.

Observations in parentheses were not made at the regular times. The actual times are given below.

Date	Regular times	Actual times.
4	4 P.M.	4 P.M.
9	10 A.M.	10½ A.M.
10	2 P.M.	2¼ P.M.
14	9 P.M.	9¾ P.M.
14	2 P.M.	2 7/12 P.M.
14	9 P.M.	9 7/12 P.M.
27	9 P.M.	10 P.M.
28	2 P.M.	2½ P.M.

* March 10, 10 A.M. Inside of case of Casella 12530 wet.
† March 14, 10 A.M. Casella 3235 carefully read.
‡ Rainfall determined by measures of snow March 2, 4, 5, 8, 20, 21, 25.

The observations below were made at times when the cloth about the wet bulb of the psychrometer was apparently dry. See similar notes in the record for 1873.

Date	Time A.M.	Dry bulb	Wet bulb	Wet.	Dry.
18	8½	15.8	14.5	14.0	
22	8½	14.2	13.0	13.0	
23	8½	15.4	14.0	14.0	
30	7½	34.0	32.5	32.5	

The relative humidity for March has been computed after adding the corrections for errors of psychrometer given in the record for September 1873.

Auroras noticed

None this month.

Snow measures continued.

March 4, 10½ A.M. New snow measured as follows: 7½, 1, 5, 0, 4, 7, 7½, 7½, 5 7/12, 4 inches; mean 4.9 inches. 10½ inches weigh 2½ ounces. Hence rainfall 0.149 inches to the inch of snow; in all 0.732 inches. Gauge C cleared out without examination about 7 P.M.

March 5. Amount of snow fallen yesterday since 10½ A.M. not determinable, but small; perhaps 0.1 inches. In that case, the rainfall may be about 0.015 inches.

March 8, 10 A.M. New snow measured as follows; 6, 5½, 5, 4¾, 3½, 5½, 6, 5½, 5, 5, 5, inches; mean 5.2 inches. 10 inches weigh 2¼ ounces. Hence rainfall 0.148 inches to the inch of snow; in all, 0.734 inches. Gauge C cleared out.

Snow measures continued.

March 20, 10 A.M. New snow 3½ inches deep. 10 inches weigh 1¾ ounces. Hence rainfall 0.1098 inches to the inch of snow; in all 0.384 inches.

4 P.M. Snow 4.9 inches deep by mean of 10 measures; 10 inches weigh 3¼ ounces (snow having grown damp since morning). Hence rainfall 0.204 inches to the inch of snow; in all 1.000 inches; since 10 A.M. 0.616 inches. Gauge C cleared out without examination.

March 22, 10 A.M. Gauge C 0.066 inches (no rainfall for last 24 hours.) Adding this to 0.616 above, we have 0.682 inches for rainfall from 10 A.M. March 20 to 10 A.M. March 21.

Snow measures continued.

March 25, 10 A.M. New snow appears to be about 2 1/12 inches deep; 11½ inches weigh 2¼ ounces. Hence rainfall 0.1228 inches to the inch of snow; in all 0.276 inches. This result preferred to that by gauge C (0.243 inches).

Mean temperature for 25 years past of the ~~period~~ including December, January, February, March.

General mean 27.4 Fahrenheit

Season	Temperature Fahrenheit	Above general mean	Season	Temperature Fahrenheit	Above general mean
1850-1	29.2	+1.8	1863-4	28.1	+0.7
1-2	26.0	-1.4	4-5	26.6	-0.8
2-3	31.4	+4.0	5-6	27.9	+0.5
3-4	26.5	-0.9	6-7	27.5	+0.1
4-5	26.3	-1.1	7-8	24.4	-3.0
5-6	23.3	-4.1	8-9	27.2	-0.2
6-7	26.4	-1.0	1869-70	28.9	+1.5
7-8	29.5	+2.1	1870-1	31.5	+4.1
8-9	30.0	+2.6	1-2	24.7	-2.7
1859-60	28.9	+1.5	2-3	24.7	-2.7
1860-1	29.3	+1.9	3-4	29.4	+2.0
1-2	27.2	-0.2	4-5	23.6	-3.9
2-3	27.2	-0.2			

Observers as ordinarily in February 1875.

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April 1875. Meteorological Record of

10 A.M.

Date	Barometer	Attached Thermometer	Casella 3235	Casella 12530	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's Tables	Wind	Clouds
1	30.398	39.5	40.5	39.8	40.2	39.6	41.0	35.7	64	4 SE	10 Pm
2	30.044	44.0	55.4	54.8	55.7	54.5	56.5	51.3	75	7 SW	10 R Pm; thin
3	29.946	50.0	52.9	52.1	52.6	52.0	54.0	51.8	94	12 S	10 Pm; a little rain
4	30.033	46.4	36.8	36.0	36.5	35.8	37.7	35.6	94	8 NE	
5	29.900	39.7	36.4	35.5	35.8	35.3	37.1	35.5	99	13 NW	10 Pm; raining
6	30.270	39.3	41.3	40.1	40.6	40.2	42.0	32.8	33	10 NW	2 R Rs
7	30.419	40.1	36.6	35.7	36.0	35.5	37.0	28.7	38	7 N	1 R
8	30.249	39.0	46.0	45.0	45.9	45.2	46.8	37.5	39	5 SW	9 R Rs Rm haze
9	30.231	40.9	42.0	40.9	41.3	40.8	42.4	34.4	43	7 E	6 R Rs haze
10	29.858	44.1	51.8	50.9	51.2	50.8	52.4	44.7	56	5 NW	0 haze Fm
11	29.864	45.2	55.0	54.3	54.8	54.2	55.8	43.7	53	3 W	3 M Fm Rs
12	30.138	44.0	40.0	38.8	39.2	39.0	40.7	35.5	64	9 E	10 Pm
13	29.879	41.7	36.0	35.2	35.4	35.0	36.7	32.0	68	10 NE	10 Pm; a little snow
14	29.635	36.8	34.0	31.9	32.6	32.3	35.1	31.7	81	13 N	10 R
15	29.893	39.2	47.3	45.9	47.7	46.5	48.2	40.6	53	2 S	10 Pm
16	29.684	44.0	52.0	50.5	52.0	51.2	53.0	47.0	67	12 SE	10 Pm Fm M
17	(29.614)	(41.5)	(32.6)	(31.8)	(32.2)	(31.3)	(33.6)	(28.7)	(66)	(8 W)	(5 Pm R Rs Rm)
18	29.730	39.0	34.3	33.9	34.7	33.4	34.8	27.7	46	1 NE	10 Pm Fm
19	(29.626)	(34.8)	(26.8)	(25.9)	(25.9)	(25.6)	(27.5)	(22.0)	(51)	(6 NW)	(0)
20	†29.527	30.0	28.6	27.7	27.9	27.2	29.1	23.3	50	14 NW	0
21	29.697	30.2	26.4	25.7	26.0	25.3	27.1	21.3	48	16 NW	1 R Rs
22	29.799	35.0	40.0	38.8	39.3	39.0	40.9	32.9	41	6 NW	0 Pm
23	29.679	39.0	50.8	49.7	50.2	49.7	51.6	41.3	39	6 NW	0
24	29.579	44.8	53.0	52.1	53.1	52.1	54.0	44.6	47	0 calm	4 Rs
25	29.649	45.2	49.8	48.8	49.6	48.8	50.4	42.5	53	7 NW	9 Pm R
26	30.026	45.6	50.0	49.6	50.3	49.1	51.0	41.4	42	10 NW	10 Pm M Rs Fm
27	(30.099)	(44.0)	(45.8)	(44.8)	(45.0)	(44.6)	(46.2)	(38.0)	(47)	(6 NW)	(0)
28	29.848	46.0	51.5	50.4	51.0	50.2	52.2	42.1	40	4 E	6 R Rs; thin
29	29.933	45.0	48.7	47.9	48.1	47.9	49.3	38.9	35	1 E	3 R Rs haze
30	29.617	50.8	57.0	55.9	56.5	56.2	57.9	45.4	34	11 W	0 haze

4 P.M.

Date	Barometer	Attached Thermometer	Casella 3235	Casella 12530	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's Tables	Wind	Clouds
1	30.225	42.7	49.4	48.9	49.4		50.0	44.8	71	6 S	10 Pm R Rs; thin
2	30.018	50.7	62.1	61.8	62.3		63.1	56.2	67	5 SW	10 Pm Rs
3	29.956	51.0	50.0	49.3	49.7		50.8	47.0	82	0 W	10 Pm
4											
5	29.972	42.2	50.5	49.6	50.2		51.2	42.0	45	12 NW	9 Pm R Fm
6	30.241	45.0	44.7	44.0	44.5		45.3	33.3	18	10 NW	9 Pm Rm
7	30.382	45.7	38.2	37.7	37.4		38.4	29.9	39	6 E	0 haze
8	30.147	43.3	39.0	38.0	38.2		39.0	35.8	84	0 W	10 R; sleet
9	30.138	46.9	40.0	38.8	38.7		40.0	35.9	74	6 E	10 R Rs.
10	29.835	50.5	56.2	55.6	56.1		57.0	42.6	22	12 NW	6 Fm M
11											
12	30.145	48.0	37.1	36.5	36.5		37.7	33.0	67	9 E	10 Pm
13	29.714	41.6	32.2	31.6	31.6		32.8	31.8	100	13 NE	10 R; snowing
14	29.757	42.4	43.0	*40.7	42.6		43.8	36.0	47	6 N	1 Fm Rs
15	29.816	47.4	52.2	49.9	52.1		53.0	43.4	44	4 SW	6 Pm M Fm
16	29.551	48.0	52.1	51.4	51.8		53.0	48.2	76	14 SE	10 Pm; raining
17	29.672	46.6	40.1	39.0	39.9		41.0	31.6	33	5 W	10 Pm M Fm Rs
18											
19	29.557	37.2	35.0	34.7	34.7		35.5	26.7	31	11 NW	10 Pm M Fm
20	†29.503	36.7	35.0	34.4	34.5		35.6	27.1	34	20 NW	0 Rs Fm
21	29.730	35.0	36.7	35.5	35.8		37.1	29.0	40	15 NW	0 R Rs
22	29.756	43.2	48.0	47.4	47.6		48.7	38.4	35	6 NW	0 R Rs
23	29.613	48.1	58.8	58.9	58.6		59.5	45.5	39	5 W	0 M Fm
24	29.516	56.5	51.0	49.9	50.2		51.6	42.9	49	9 E	0 haze
25	29.758	51.1	55.1	54.2	55.0		56.1	43.3	30	20 NW	7 M Fm Rm
26	29.980	50.7	52.5	52.0	52.5		53.2	40.8	29	11 NW	9 Pm M Fm Rs
27	29.955	53.3	58.9	58.1	58.8		60.7	44.1	17	5 NW	5 R Rs
28	29.819	53.1	46.8	45.7	46.2		47.1	39.8	54	4 E	10 R Pm
29	29.877	53.8	48.0	47.7	47.4		48.2	37.3	30	8 E	1 R Rs haze
30											

Sums of columns, number of observations, means, and reduction of barometer to the freezing point.

	10 A.M.	4 P.M.
Barometer	896.864	776.633
	30	26
	29.895	29.870
	−.035	−.048
	29.860	29.822
Attached Thermometer	1244.8	1210.7
	30	26
	41.5	46.6
Casella 3235	1299.3	1212.6
	30	26
	43.3	46.6
Casella 12530	1270.4	1191.3
	30	26
	42.3	45.8
No. 4	1287.3	1202.3
	30	26
	42.9	46.2
Minimum after setting	1268.3	
	30	
	42.3	
Dry bulb	1322.0	1229.4
	30	26
	44.1	47.3
Relative humidity	1660	1257
	30	26
	55	48
Wind	223	222
	30	26
	7.4	8.5
Clouds	159	163
	29	26
	5.5	6.3

Rain gauge A, on roof of shed, north of Clock Room; emptied out April 1.

Date	Time	Ounces	Inches
5	4 P.M.	224	1.931
16	8 A.M.	75½	0.651
17	4 P.M.	46½	0.403
Total		346½	2.985

Snow measures; the number of inches weighed is the length of a cylinder 1⅞ inches across.

April 13, 4 P.M. Snow about 2½ inches deep; 10½ inches weigh 2⅝ ounces; hence rainfall 0.127 inches to the inch of snow; in all 0.318 inches.

April 14, 10 A.M. 20 measures of snow as follows: the first ten in the grounds west and north of the Observatory; the last ten on the avenue:

1872phae.proj..3825

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1872phae.proj..3025

Harvard College Observatory. April 1875.

Date	External Thermometer No. 41				Casella 3235		Casella 12530		Maximum after setting	Extreme temperatures		Rainfall in inches	Remarks.
	7 A.M.	2 P.M.	9 P.M.	Mean	2 P.M.	9 P.M.	2 P.M.	9 P.M.		Maximum set at 10 A.M.	Minimum set at 10 A.M.	Gauge C examined at 10 A.M.	
1	34.5	(49.6)			(49.6)		(48.8)		40.2	41.0	32.2	0.000	yw
2	43.5	62.6	(50.5)	52.2	62.3	(51.4)	61.7	(50.5)	54.0	54.8	39.7	0.000	yw
3	49.2	50.6	41.5	47.1	50.6	42.4	50.0	41.6	51.0	63.2	49.0	0.121	yw Occasional showers.
4	35.0		36.6			37.7		36.9	38.2	55.0	34.9	0.408	Rainy.
5	35.5	46.3			45.0		43.5		36.5	39.0	33.8	1.842	ya Rain with some snowflakes. Fr A4.
6	33.2	46.4	38.7	39.4	46.9	39.6	45.9	38.9	41.0	50.2	32.1	0.066	Rf y < N.
7	30.8	37.8	30.7	33.1	38.9	32.0	38.6	31.2	36.5	46.8	28.2	0.000	rl
8	29.8	39.0	36.0	34.9	39.0	37.0	38.4	36.2	45.2	45.4	26.2	0.000	y y < A10. A little rain & sleet.
9	33.3	40.6	39.7	37.9	41.4	41.0	41.1	39.8	41.9	47.9	30.5	0.022	y y < A10.
10	37.0	50.4	47.0	44.8	50.6	48.0	50.0	47.0	50.0	51.2	35.2	0.000	Rw
11	41.0	57.8	39.5	46.1	58.0	41.0	57.2	40.0	53.6	56.9	37.3	0.000	Ry n → N.
12	36.5	38.8	34.0	36.4	39.7	35.0	38.7	34.1	40.4	58.0	32.8	0.000	yl n →
13	34.3	32.7	30.5	32.5	33.2	31.0	32.8	30.0	36.0	41.0	33.1	0.000	y Snowstorm after 10 A.M.
14	28.5	41.2			41.3	"	*38.6		32.2	36.2	28.1	1.887	y Some snow before 9 A.M. y > N. rl.
15		51.6	39.2		51.8	40.0	50.0	39.0	46.4	46.8	29.8	0.000	yw y > A10. Rr N.
16	43.0	53.7	47.6	48.1	53.8	48.3	53.0	47.8	50.6	52.7	36.0	0.000	y Rw A little rain at times. Thunder shower in the evening
17	31.0	(41.5)	29.7	34.1	(41.8)	30.4	(40.8)	29.9	(32.7)	(55.7)	(30.2)	(0.386)	r Ry
18	26.0								36.0	41.5	23.2	0.000	yl
19	23.5	33.8	29.5	28.9	34.0	30.5	33.7	29.8	(27.6)	(37.4)	(20.5)	(0.000)	rl y < A9.
20	22.7	33.2	28.5	28.1	33.9	29.4	32.9	28.8	29.5	35.5	22.2	0.000	r Rd n
21	21.6	35.3			35.8		35.1		27.0	34.6	20.3	0.000	rdn
22	28.3	47.8			48.2		47.2		39.7	39.7	24.2	0.000	rl
23	38.5	57.3	46.5	47.4	57.2	47.5	56.9	46.9	49.7	50.1	31.9	0.000	rw
24	39.0	51.5			52.4		51.4		52.3	58.9	35.1	0.000	rw
25	40.5	54.8	45.0	46.8	55.0	46.6	54.0	45.0	48.9	58.8	36.6	0.000	Rrwn
26	41.2	52.2			52.2		52.0		49.7	57.8	35.5	0.000	yw
27	39.5	(57.6)	42.3	46.5	(57.7)	43.6	(57.0)	42.6	(45.2)	(53.7)	(33.9)	(0.000)	rw Sy N.
28	38.8	48.8	41.1	42.9	49.6	41.9	48.4	41.1	50.8	58.6	32.1	0.000	Ryl
29	36.5	52.4	42.0	43.6	52.6	43.7	52.5	42.8	48.5	53.3	29.8	0.000	r Rrl
30	45.5		44.0		'	46.2		44.5	56.0	56.6	40.0	0.000	rw y < N.
Sums	1017.7	1265.3	860.1	770.8						1478.3	954.4	4.732	
Means	35.1	46.9	39.1	40.6						49.28	31.81		

Rainfall for month 4.73 inches
Mean temperature for month {mean of 3 means for 7, 2, 9} 40.4 Fahrenheit
Maximum " " " 63.2 " ; April 3
Minimum " " " 20.3 " ; April 21
— " — (reduced to standard of No. 4) 20.9 "

The velocity of the wind is merely estimated in miles per hour. See general remarks on observations of 1873.

Observations in parentheses ( ) were not made at the regular times. The actual times are given below.

Date	Regular times	Actual times.
1	2 P.M.	2½ P.M.
2	9 P.M.	9½ P.M.
17	10 A.M., 2 P.M.	8 A.M., 2¾ P.M.
19	10 A.M.	8 A.M.
27	10 A.M., 2 P.M.	8 A.M., 2½ P.M.

The observations below were made at times when the cloth about the wetted bulb of the psychrometer was apparently dry. See similar notes in the record for 1873.

Date	Time A.M.	Dry bulb	Wet bulb	No. 4
6	8½	37.3	35.8	36.1
8	8½	39.4	38.0	37.9

The relative humidity for April has been computed after applying the corrections for errors of psychrometer given in the record for September 1873.

Aurora noticed some evening during week ending April 10.

* April 14, 2 and 4 P.M. Moisture in case of Casella 12530.

† April 20. Low barometer. At 12¼ P.M. barometer 29.502; attached thermometer 33.0; at 2 P.M., — " — 29.496; — " — — " — 34.8.

Snow measures continued. 5, 8, 7½, 12, 4, 8, 9½, 10, 10½, 8½, 13, 12, 13½, 13½, 12, 9, 11½, 10, 8, 9; general mean 9.8 inches. 22 inches weigh 6¾ ounces. Hence rainfall 0.1926 inches to the inch of snow; in all 1.887 inches during the past 24 hours. This result preferred to that by gauge C (0.497 inches).

Observers as ordinarily in February 1875.

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May 1875. Meteorological Record of

10 A.M.

Date	Barometer	Attached thermometer	Casella 3235	Casella 12530	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's Tables	Wind	Clouds
1	29.896	46.5	50.6	49.7	50.3	49.4	51.4	39.6	29	5 NW	5 Pr Rs; solar halo
2	29.393	48.0	45.0	44.1	44.8	43.9	45.9	43.1	88	2 NW	10 Pm
3	29.718	44.7	46.0	45.1	45.6	44.8	46.6	36.1	30	15 W	3 M Fm
4	29.749	48.4	48.9	48.2	49.2	47.7	49.7	39.0	34	0 W	10 Pm
5	29.866	48.0	55.1	54.2	55.0	54.3	56.2	44.0	34	4 NW	5 M Fm
6	29.904	50.9	57.3	56.9	57.9	56.7	58.3	46.8	40	4 S	10 Pm
7	29.946	48.2	43.4	42.9	43.6	42.3	44.9	41.7	85	12 N	10 Pm; a little rain
8	30.113	50.8	53.0	52.5	53.2	52.0	53.9	46.0	56	0 SE	10 Pm
9	29.902	48.6	46.2	45.6	46.2	45.7	47.3	44.8	90	2 NE	10 Pm
10	29.510	52.2	73.0	71.8	72.8	72.0	74.1	65.0	62	4 SW	1 Fm haze
11	29.984	55.8	62.4	61.4	62.3	61.7	63.4	49.8	35	6 NW	0 M Fm
12	29.918	56.4	68.8	67.1	68.7	67.7	69.9	56.9	44	8 S	7 Pm Pr Rs
13	30.078	54.7	58.1	57.0	57.8	57.2	59.3	45.3	28	7 W	0
14	30.300	55.6	65.4	64.6	65.7	64.8	67.0	53.0	37	4 SW	0 haze Rs
15	30.044	53.2	49.1	48.1	48.5	48.0	49.9	47.0	87	3 E	10 Pm; raining
16	29.978	53.4	50.1	49.2	50.0	49.1	51.3	43.8	57	6 W	8 M Pm
17	30.210	49.8	55.2	54.7	55.1	54.3	56.1	42.7	27	7 NW	0
18	30.250	51.0	54.7	54.0	54.2	54.0	55.2	45.3	45	8 NE	9½ R Rs M
19	29.995	52.0	46.9	46.2	46.8	45.4	47.8	45.0	88	5 W	10 Pm; raining
20	29.891	52.9	64.8	63.7	65.0	64.0	66.0	56.0	54	9 SW	5 haze Rs
21	29.968	57.0	67.1	66.7	67.8	66.6	68.1	53.4	35	7 NW	7 Pm Fm Rs Rm
22	29.894	60.0	66.8	66.0	67.7	66.0	67.3	62.6	81	0 W	4 Rs Fm haze
23	29.949	68.1	76.8	75.8	77.0	75.9	77.4	60.3	34	5 N	1 Rs
24	30.009	61.1	73.4	72.5	73.8	72.5	74.6	65.6	62	7 SW	3 Rs haze
25	29.829	66.5	77.7	76.4	77.9	76.9	78.7	68.6	61	9 SW	8 Pr Rs Rm Fm
26	29.863	68.7	76.0	75.2	76.2	75.2	76.8	62.1	42	10 N	7 M Fm haze
27	30.242	63.7	69.6	68.8	69.8	68.8	70.3	53.0	26	8 NW	1 Rs
28	30.205	63.0	67.6	66.9	67.4	67.0	68.8	53.3	32	2 NW	5 haze
29	30.001	63.0	66.9	65.9	66.9	66.0	67.8	50.6	24	4 E	9 thick haze
30	29.930	58.7	58.0	57.2	58.4	57.0	59.2	53.7	74	0	10 Pm
31	30.076	60.2	67.3	66.8	67.8	66.8	68.4	54.7	39	6 NW	0

4 P.M.

Date	Barometer	Attached thermometer	Casella 3235	Casella 12530	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's Tables	Wind	Clouds
1	29.897	52.2	54.9	54.3	55.0		55.6	43.6	34	2 W	10 Pm
2	29.488	52.2	55.0	54.0	54.6		56.1	43.8	37	7 NW	7 M Fm
3	29.686	51.5	53.7	52.9	53.3		54.2	39.7	18	13 W	0 Rs
4	29.679	49.8	48.0	47.6	48.4		48.8	42.0	59	4 S	10 Pm
5	29.862	55.0	62.0	61.2	62.1		63.0	46.1	19	5 NW	0 M Fm haze
6	29.841	53.5	52.9	52.1	52.2		53.1	46.1	62	6 E	10 Pm
7	30.097	54.0	51.0	50.2	50.6		51.8	42.0	42	9 E	0 Fm
8	30.072	51.7	53.1	52.6	53.1		54.0	45.6	54	1 SE	10 Pm
9	29.816	51.9	52.7	52.8	53.4		54.0	49.8	80	4 NE	10 Pm
10	29.646	60.8	63.8	63.1	63.8		64.6	55.0	55	5 W	10 Pm Fm; a little rain
11	29.986	61.2	69.7	68.8	69.7		70.2	52.8	24	6 W	0
12	†29.786	60.7	66.8	66.8	67.3		67.5	57.6	56	‡25 S	7 Pm M Fm Rm
13	30.134	61.1	65.6	64.8	65.5		66.6	49.0	21	6 W	0 Rs Fm
14	30.239	61.7	67.1	66.8	67.6		68.2	50.2	21	6 SE	3 Rs Fm
15	29.968	55.4	58.1	57.0	58.4		59.4	55.2	82	2 N	7 Pm M Fm haze
16	29.999	55.2	52.0	51.1	51.7		52.7	42.1	38	9 NW	8 M Pm
17	30.200	58.0	61.6	60.5	61.4		62.3	45.5	18	5 W	4 M Fm
18	30.201	57.8	50.1	49.7	49.8		50.8	41.5	44	8 E	10 Pm
19	29.983	55.2	57.7	56.7	57.6		58.7	50.2	57	5 S	7 Pm M Fm
20	29.749	57.2	69.8	68.6	69.6		70.5	55.3	34	10 SW	10 Pm Fm haze
21	29.893	64.0	71.7	71.0	72.2		72.8	57.9	38	4 SE	0 haze
22	29.830	67.8	78.4	77.7	79.0		79.0	66.3	51	5 W	5 M Fm
23	29.967	70.8	68.3	67.3	68.3		69.2	53.3	31	2 E	1 Rs
24	29.920	68.7	78.5	77.6	79.1		79.2	67.9	56	6 S	7 Rs haze
25	29.768	71.0	76.0	75.7	76.8		76.5	68.0	66	9 S	10 Pr Pm M Fm
26	29.904	72.8	78.8	77.9	78.9		79.4	57.3	20	10 NW	0 haze
27	30.188	70.8	72.0	71.2	72.3		72.9	57.1	34	6 NE	1 Rs haze
28	30.061	71.2	76.0	75.1	76.4		76.6	58.9	31	2 NE	4 haze
29	29.970	66.2	61.6	60.2	60.6		62.1	52.8	55	7 E	9 thick haze
30	29.929	63.3	63.3	62.7	63.5		64.3	54.5	54	6 NW	9 M Pm
31	30.099	65.7	61.9	60.6	61.1		62.5	54.8	63	6 E	0 Fm haze

Sums of columns, number of observations, means, and reduction of barometer to the freezing point.

	10 A.M.	4 P.M.
Barometer	928.611	927.858
	31	31
	29.955	29.931
	−.072	−.085
	29.883	29.846
Attached thermometer	1711.1	1868.4
	31	31
	55.2	60.3
Casella 3235	1861.2	1952.1
	31	31
	60.0	63.0
Casella 12530	1835.2	1928.6
	31	31
	59.2	62.2
No. 4	1863.4	1953.3
	31	31
	60.1	63.0
Minimum after setting	1833.7	
	31	
	59.2	
Dry bulb	1891.6	1976.6
	31	31
	61.0	63.8
Relative humidity	1560	1354
	31	31
	50	44
Wind	169	200
	31	31
	5.5	6.5
Clouds	178	169
	31	31
	5.7	5.5

Rain gauge A, on roof of shed, north of Clock Room.

Date	Time	Ounces	Inches
3	4 P.M.	40	0.345
7	10 A.M.	167½	1.444
10	9½ A.M.	15½	0.134
19	11 A.M.	32½	0.280
20	10½ A.M.	11¼	0.097
22	10 A.M.	32¼	0.280
Total		299¼	2.580

Water lost by leakage, especially May 7.

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Harvard College Observatory. May 1875.

Date	External Thermometer No. 4				Casella 3235		Casella 12530		Maximum after setting	Extreme temperatures		Rainfall in inches Gauge C Examined at 10 A.M.	Remarks.
	7 A.M.	2 P.M.	9 P.M.	Mean	2 P.M.	9 P.M.	2 P.M.	9 P.M.		Maximum set at 10 A.M.	Minimum set at 10 A.M.		
1		57.5	49.3		56.8	50.0	56.6	49.1	50.4	60.9	34.8	0.000	Rgw y< A10. Rain following night.
2	42.3	55.2	44.3	47.3	55.1	44.5	54.7	44.7	44.0	57.7	38.8	0.276	v A little rain about 2½ P.M.
3	39.2	51.9	46.5	45.9	52.1	47.1	51.4	46.0	45.7	55.7	35.1	0.000	rwn
4	43.3	50.4	41.5	45.1	50.1	41.2	49.6	41.2	48.5	53.3	39.8	0.000	yl
5	46.5	62.3	52.9	53.9	62.0	52.5	61.3	52.5	54.7	55.0	39.9	0.000	Ryw y> N.
6	48.0	56.8	43.5	49.4	57.0	44.0	56.0	44.0	56.8	62.4	42.1	0.000	yl Rain beginning about 4¼ P.M.
7	41.5	49.9	41.5	44.3	50.1	42.3	49.6	41.5	43.0	58.7	41.0	1.953	yl y> N r A3.
8		52.2	46.5		52.5	49.0	51.8	47.0	52.2	52.4	37.0	0.000	yl A few drops of rain at times.
9	43.0	51.4	46.5	47.0	50.2	47.0	50.4	46.0	46.0	53.0	41.7	0.143	yl A very little rain at times.
10	48.8	76.1	57.0	60.6	75.6	57.0	74.9	56.5	70.0	72.1	42.2	0.011	rw y< A10. Sr U. {A little rain about 4 P.M.}
11	51.0	68.0	59.6	59.5	68.0	60.6	67.2	59.2	61.2	*	45.6	0.000	rw
12	56.0	(69.3)	56.6	60.6	(69.2)	56.1	(68.2)	55.0	67.3	69.0	47.8	0.000	yw Sr N y< A3. {A little rain late in the afternoon} Sr A8.
13	48.3	65.5	56.5	56.8	65.7	55.5	65.0	55.5	57.9	69.7	45.3	0.044	rw
14	52.5	68.2	51.2	57.3	68.0	52.7	67.5	51.7	64.6	65.8	41.9	0.000	rw
15	45.5	54.0	51.2	50.2	53.9	51.2	53.1	50.6	49.0	68.8	41.3	0.011	yc Sr A3. {A little rain in the forenoon.} yU.
16	44.2	53.3	45.4	47.6	53.2	46.0	52.9	44.9	51.4	60.0	43.3	0.088	Ryl
17	45.5	59.9	49.4	51.6	60.0	50.7	59.2	49.1	55.0	55.2	37.3	0.000	rw
18	41.0	52.0	46.0	46.3	52.8	46.0	52.1	45.3	54.6	61.5	36.1	0.000	Ryl
19	44.0	56.1	45.9	48.7	55.6	46.0	55.2	45.3	47.0	55.4	42.0	0.132	Cloudy with slight showers. v A8.
20	51.3	67.8	62.0	60.4	67.8	62.0	66.2	61.2	63.2	64.2	43.0	(0.110)	z y w Slight shower towards night.
21	55.2	75.7	60.5	63.8	75.7	60.4	74.4	60.0	66.4	70.7	49.4	0.011	Rhz Rain following night.
22	54.0	77.7	68.5	66.7	77.8	68.9	76.5	67.9	63.5	75.7	50.1	0.298	Rhy
23	68.0	85.0	60.9	65.6	68.4	61.0	67.2	60.3	74.0	78.3	60.6	0.000	Rz w
24	59.5	80.6	67.0	69.0	80.0	67.0	79.6	66.2	72.7	77.6	50.0	0.000	hz
25	67.2	80.7	67.9	71.9	80.1	66.9	79.1	65.9	76.7	80.4	62.2	0.000	hy, y< N.
26	68.0	79.7	64.5	70.7	79.7	64.4	78.7	64.5	75.3	81.0	63.0	0.000	hz
27	61.8	70.6	61.3	64.6	70.4	60.9	69.5	61.9	69.2	79.2	50.9	0.000	r Rh
28	57.5	74.6			74.0		73.3		67.3	73.9	50.9	0.000	z Rh
29		64.6	55.5		65.2	56.3	63.9	‡54.9	66.4	75.3	50.7	0.000	z l
30	53.5	66.4	58.0	59.3	66.2	58.0	65.4	57.3	58.4	68.2	49.9	0.000	yl
31	56.8	63.0	52.0	57.3	63.6	52.0	62.0	52.0	67.0	67.2	49.0	0.000	r Rl
Sums	1433.4	1979.4	1609.4	1521.4						1968.3	1402.7	3.077	Rainfall for month 3.08 inches.
Means	51.2	63.9	53.6	56.3						65.61	45.25		Mean temperature for month (mean of 3 means) 56.2 Fahrenheit.

Maximum " " " 81.0 " ; May 26
Minimum " " " 34.8 " ; May 1.
" (reduced to standard of No. 4) 35.7.

The velocity of the wind is merely estimated in miles per hour. See general remarks on observations of 1873.

Observations in parentheses ( ) were not made at the regular times. The actual times are given below.

Date	Regular times.	Actual times.
12	2 P.M.	2½ P.M.
20	10 A.M.	10½ A.M. (gauge C)

The observations below were made at times when the cloth about the wetted bulb of the psychrometer was apparently dry. See similar notes in the record for 1873.

Date	Time A.M.	Dry bulb	Wet bulb.	No. 4
26	8½	73.4	72.3	72.7
27	8¼	67.5	66.1	67.0

The relative humidity for May has been computed after applying the corrections for error of psychrometer given in the record for September, 1873. Larger corrections above 60° are indicated by the two comparisons above.

Auroras noticed.

None this month.

* May 11, 10 A.M. The maximum reading was lost, the upper end of the main column (not the detached column) of mercury being read by error. The maximum must have been about 75, as appears from the 2 P.M. reading May 10.

† May 12, 5 P.M. Barometer 29.760; attached thermometer 61.4. Afternoon windy.

‡ May 29, 9 P.M. Original reading of Casella 12530 59.9; according to Casella 3235 and No. 4, the actual temperature by Casella 12530 was probably 54.9.

Observers as ordinarily in February 1875.
(2 P.M. observation May 23 by A. Searle.)

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June 1875. Meteorological Record of

10 A.M.

Date	Barometer	Attached thermometer	Casella 3235	Casella 12530	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's Tables	Wind	Clouds
1	30.266	59.0	62.4	61.5	62.9	61.9	63.8	53.6	51	1 NE	1 Rm Rs Fm haze
2	30.268	58.3	60.3	59.9	60.2	59.9	60.7	50.0	46	10 E	1 haze
3	30.200	57.4	67.6	67.0	67.8	67.0	66.8	51.7	26	8 S	1 Rs
4	30.163	60.8	69.4	68.8	70.6	68.7	70.8	61.4	59	3 SW	9 Pr Rs; thin
5	30.189	65.8	79.4	78.7	80.1	79.0	80.7	65.7	43	1 SE	4 haze Pr Rs
6	29.929	68.1	76.0	75.1	76.9	75.3	77.6	68.0	62	2 NW	7 Pm M Fm
7	29.817	66.0	61.0	60.0	60.4	60.1	61.3	55.0	70	9 E	10 Pm
8	30.112	62.2	64.8	*61.8	65.3	63.9	66.0	58.5	66	2 NW	7 M Fm Rs
9	30.313	61.8	56.4	55.6	56.2	55.4	57.4	54.4	89	1 SE	10 Pm; raining
10	30.024	58.7	57.0	56.0	56.9	56.0	58.4	56.3	95	4 NW	10 Pm; fine rain
11	(30.188)	(63.0)	(71.1)	(68.7)	(71.5)	(70.6)	(72.4)	(64.9)	(68)	(5 E)	(5 Pr Rs; thin)
12	30.002	63.8	71.7	69.7	72.5	70.9	72.9	66.8	75	4 S	5 Pr Rs
13	29.866	62.8	59.0	57.9	59.1	57.4	60.1	52.8	64	12 NW	10 Pm Fm
14	29.996	57.1	61.4	60.0	61.8	60.7	62.6	51.0	44	5 W	5 haze
15	29.929	59.7	65.0	64.3	65.7	64.3	66.6	55.4	49	3 SW	7 thick haze
16	29.874	60.9	70.0	69.7	71.1	69.4	71.4	57.8	36	4 W	4 Rs haze
17	30.028	61.2	66.5	66.4	67.8	66.0	67.2	54.7	44	0 W	7 haze Rs
18	29.982	61.2	57.0	56.1	56.8	56.1	58.0	54.0	83	7 E	10 Pm
19	29.670	57.8	60.8	60.0	60.8	60.0	61.9	53.6	60	15 NW	6 Rs Pr Fm M haze
20	30.100	60.4	70.0	69.0	70.1	69.2	70.9	58.6	46	6 NW	2 haze
21	30.128	64.0	74.6	73.6	75.3	73.7	75.8	63.8	51	3 W	6 haze Rs Pr
22	30.060	66.6	80.1	79.1	80.6	79.6	81.3	70.0	57	10 SW	0 haze
23	30.000	69.7	76.3	75.8	77.4	75.5	77.2	69.8	71	7 S	10 Pm Fm
24	30.000	72.3	82.0	81.3	82.9	81.1	83.0	74.9	69	3 SW	3 Pr Rs haze
25	29.896	76.2	82.0	80.8	82.6	81.0	83.1	71.6	57	7 W	5 Pm Fm Rs
26	30.118	72.0	74.0	73.7	74.1	73.9	74.2	61.9	49	5 E	6 Pr Rs
27	29.938	72.7	80.0	79.1	80.9	79.2	81.2	74.1	73	3 S	5 Pr Rs Fm
28	29.794	76.9	86.7	85.8	87.2	86.0	87.4	77.3	64	9 SW	0 M
29	30.289	71.0	67.1	65.8	66.8	66.3	67.7	57.2	53	8 E	4 Pr Rs Rm
30	30.028	69.6	73.0	71.7	73.4	71.9	74.1	68.6	78	2 S	10 Pm

4 P.M.

Date	Barometer	Attached thermometer	Casella 3235	Casella 12530	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's Tables	Wind	Clouds
1	30.247	65.7	58.0	57.8	57.7		58.2	52.0	64	8 E	1 Fm haze
2	30.249	64.0	60.0	59.0	59.6		60.5	48.2	38	11 E	0 haze
3	30.149	68.1	71.3	70.8	71.7		72.3	54.9	28	10 S	0 haze
4	30.103	72.2	80.3	79.8	80.7		81.0	61.7	29	5 NW	1 M Fm
5	30.108	73.1	83.0	82.0	83.5		83.9	67.0	39	4 S	8 Pr Rs haze
6	29.888	72.6	77.5	76.7	78.7		78.4	68.9	63	1 W	8 M Pm Rm
7	29.750	68.2	59.0	58.5	59.2		59.8	56.1	85	17 NW	10 Pm
8	30.170	68.2	66.2	*63.0	66.0		66.7	58.2	61	6 E	10 Pr Rs M Fm
9	30.263	61.1	54.2	53.7	54.3		55.2	53.6	97	2 NE	10 Pm; raining
10	30.053	64.0	65.9	64.1	66.7		67.1	61.5	76	3 NW	10 Pm
11	30.157	69.0	67.8	65.6	67.7		68.6	62.4	76	4 E	1 Rm Rs
12	29.917	69.9	74.6	73.0	74.7		75.3	67.0	66	10 SW	0 M Fm Rs
13											
14	29.892	64.3	68.0	65.9	68.1		69.0	53.6	33	7 W	5 M Fm
15	29.863	66.0	71.4	70.5	71.8		72.4	56.1	32	6 W	10 M Fm haze Pr Rs
16	29.829	68.8	75.0	74.7	75.8		75.8	58.3	31	2 SW	10 Pm M
17	30.021	69.3	70.0	69.3	70.0		70.3	56.8	41	2 E	9 haze Pr
18	29.719	61.4	57.8	57.0	57.6		58.7	56.6	95	8 E	10 Pm
19	29.760	63.0	69.4	68.7	69.8		70.3	58.1	46	4 NW	10 Pr Rm M Fm
20	30.104	67.3	75.3	74.6	75.4		76.0	58.6	31	6 NW	1 Rs Pr haze
21	30.053	71.4	80.7	79.7	81.0		81.4	66.3	44	4 W	6 haze Pr Rs
22	(30.028)	(72.5)	(82.2)	(81.2)	(82.5)		(82.8)	(66.2)	(39)	(11 S)	(1 Pr Rs haze)
23	29.978	73.8	79.0	77.9	79.3		80.2	71.0	64	13 S	9 Pm Fm Rs
24	29.933	79.1	89.7	88.8	90.2		90.4	76.9	54	7 W	2 M Fm
25	29.907	81.3	86.0	85.0	86.3		86.7	71.0	45	10 W	2 M Fm
26	30.018	77.2	75.8	74.5	75.6		76.4	65.7	56	8 E	8 Pr Rs
27	29.872	78.7	86.0	85.0	86.9		86.7	78.7	71	3 S	8 Pm M Fm Rs
28	29.838	82.1	77.8	77.0	78.4		78.4	72.7	78	9 W	‡9 Pm Fm
29	30.258	73.3	63.9	62.8	63.3		64.4	56.0	60	7 E	10 Pm
30	29.988	75.3	78.0	75.9	78.5		79.0	74.8	85	3 SW	5 Pm M Fm

Sums of columns, number of observations, means, and reduction of barometer to the freezing point.

	10 A.M.	4 P.M.
Barometer	901.167	870.115
	30	29
	30.039	30.004
	−.097	−.112
	29.942	29.892
Attached thermometer	1937.0	2040.9
	30	29
	64.6	70.4
Casella 3235	2082.6	2103.8
	30	29
	69.4	72.5
Casella 12530	2052.9	2072.5
	30	29
	68.4	71.5
No. 4	2095.7	2111.0
	30	29
	69.9	72.8
Minimum after setting	2060.0	
	30	
	68.7	
Dry bulb	2114.5	2125.9
	30	29
	70.5	73.3
Relative humidity	1798	1627
	30	29
	60	56
Wind	159	191
	30	29
	5.3	6.6
Clouds	170	174
	30	29
	5.7	6.0

Rain gauge A, on roof of shed, north of Clock Room.

Date	Time	Ounces	Inches
8	8 A.M.	9 3/4	0.843
9	4 P.M.	30	0.259
10	10½ A.M.	178¼	1.537
13	10 A.M.	27 3/8	0.236
18	10 A.M.	13	0.112
19	10 A.M.	43½	0.375
20	10¼ A.M.	3¼	0.028
27	10 A.M.	1 7/8	0.010
28	10½ A.M.	2¼	0.019
30	10 A.M.	1 3/8	0.012
Total		397 7/8	3.431

Much loss by leakage, especially June 10.

Gauge repaired.

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Harvard College Observatory. June 1875.

Date	External Thermometer No. 4				Casella 3235		Casella 12530		Maximum after setting	Extreme temperatures		Rainfall in inches. Gauge C examined at 10 A.M.	Remarks.
	7 A.M.	2 P.M.	9 P.M.	Mean	2 P.M.	9 P.M.	2 P.M.	9 P.M.		Maximum set at 10 A.M.	Minimum set at 10 A.M.		
1	50.5	60.4	51.9	54.3	61.0	52.0	60.2	51.0	62.2	69.0	47.7	0.000	y y> Ag. rl N. y ll.
2	53.4	59.8	55.4	56.2	60.0	54.0	59.2	53.0	60.5	64.5	49.1	0.000	rl
3	53.0	71.8			71.6		70.7		66.6	67.3	44.2	0.000	rw Sy ll.
4	57.0	80.0	66.0	67.7	79.8	66.0	79.0	65.3	69.0	72.5	53.1	0.022	Syw. Shower previous night. y> N.
5	65.8	84.5			84.9		84.1		78.0	80.4	56.0	0.000	hy y< A 10.
6	68.2	77.6			76.1		76.2		74.1	85.0	62.4	0.000	Ry h
7	60.7	68.2	51.8	60.2	67.4	52.1	66.4	51.7	61.0	77.8	59.0	0.000	yw Rain after 4 P.M., with a little thunder and lightning.
8	57.8	68.9			69.0		*65.3		62.0	69.5	50.0	0.860	Ryw y< N.
9	55.7	55.8	52.1	54.5	55.9	52.6	55.0	51.7	55.9	71.0	54.0	0.066	yRc Rainy most of the day & following night.
10	52.7	66.5	61.4	60.2	65.4	61.8	63.8	60.9	56.4	57.8	50.8	4.678	y Rw A little rain. Rr ll.
11		69.7			69.9		67.3		(70.4)	(70.8)	(51.5)	(0.000)	Rrh f ll
12	62.5	76.1			76.0		74.4		71.0	72.0	54.4	0.000	Rrh
13	55.3	61.5			61.5		60.1		57.4	76.0	53.3	0.243	y y> A 10. rl N. Rain previous night.
14	50.7	66.4			65.8		64.9		61.0	62.3	42.2	0.000	Rrw
15	55.2	70.8	62.0	62.7	70.4	62.1	69.8	61.8	64.8	67.7	48.8	0.000	zyw rl.
16	57.3	76.2	63.5	65.7	75.5	63.6	74.8	63.0	69.2	70.9	48.3	0.000	zw y< N
17	58.2	72.0	61.3	63.8	71.3	61.8	70.6	61.0	66.6	75.6	50.1	0.000	zyw Rain following night.
18	55.3	56.4	55.5	55.7	56.5	55.3	56.0	55.0	57.1	72.0	54.0	0.132	yl Showers at times.
19	†51.5	69.2	56.3	59.0	69.2	56.3	68.3	55.9	60.0	60.0	48.6	0.441	ynw A little rain at times.
20	62.5	74.2	64.6	67.1	74.1	65.0	73.3	64.2	69.2	69.7	52.0	0.033	Rrw
21	62.4	80.6	69.7	70.9	80.4	70.0	79.4	69.0	73.3	74.8	54.7	0.000	zRy w
22	65.7	83.5	69.9	73.0	83.3	70.0	82.4	69.8	79.1	80.5	57.2	0.000	Rrz h
23	69.3	80.5	73.0	74.3	79.6	73.0	79.0	72.0	75.6	83.0	63.3	0.000	yh Srll.
24	73.5	90.0	77.8	80.4	89.6	77.7	88.7	76.7	81.3	82.0	67.4	0.000	h Rr
25	77.8	86.4	71.4	78.5	86.0	71.0	85.1	70.5	81.3	89.1	72.8	0.000	h Rr
26	67.0	72.8	68.7	69.5	73.0	68.9	71.8	68.0	74.0	86.3	57.1	0.000	Rhy Shower about 10 P.M.
27	68.2	86.5			85.2		85.0		79.1	79.9	64.3	0.022	hy A little rain about 2 P.M.
28	78.7	91.1			90.8		90.0		85.7	88.9	71.7	0.022	hr {Shower after 3 P.M., with a little thunder and lightning.}
29	63.5	66.6	61.6	63.9	67.0	62.0	65.9	62.2	68.0	§	58.0	0.055	yl y< A 10.
30	64.0	82.1	73.0	73.0	81.9	72.5	80.9	72.3	72.0	72.0	60.8	0.022	hv Shower between 3 & 4 P.M.
Sums	1773.4	2206.1	1266.9	1310.6						2148.3	1656.8	6.596	Rainfall for month 6.60 inches.
Means	61.2	73.5	63.3	65.5						74.08	55.23		Mean temperature " " (mean of 3 means for 7, 2, 9) 66.0 Fahrenheit.

Maximum temperature for month, about 90 Fahrenheit; it would probably have appeared in the reading of June 29, which was lost.

Minimum temperature for month, 42.2 Fahrenheit; June 14.

" (reduced to standard of No. 4) 43.4 Fahrenheit.

The velocity of the wind is merely estimated in miles per hour. See general remarks on observations of 1873.

Observations in parentheses ( ) were not made at the regular times. The actual times are given below.

Date	Regular times.	Actual times.
11	10 A.M.	10½ A.M.
22	4 P.M.	3½ P.M.

The observations below were made at times when the cloth about the wetted bulb of the psychrometer was apparently dry. See similar notes in the record for 1873.

Date	Time A.M.	Dry bulb	Wet bulb	No. 4
14	8¼	56.7	55.5	57.0
15	8½	61.1	59.9	61.0
21	9¾	74.8	74.0	74.8
26	9½	75.2	74.3	74.8

These observations apparently confirm the corrections given in the record for September 1873, according to which the relative humidity for this month has been computed.

Auroras noticed. None this month.

Solar halo noticed about 10½ A.M. June 5; still visible at noon, but fainter.

*June 8, 10 A.M., 2 P.M., 4 P.M.; and June 30 4 P.M. The low reading of Casella 12530 is probably due to dampness of its case.

†June 19. The 7 A.M. thermometer reading was reported at 10 A.M., not having been entered when made.

‡June 28, 4 P.M. Some "bossed" or "hailstorm" cloud.

§June 29. The maximum was lost as on May 11, 1875.

1875, June 11.
Professor Joseph Winlock, the Director of the Observatory, died last night.

Observers; at 7 A.M., Bridget Henry.
at 2 P.M. June 1, 2, 4, 7, 9, 10, 22, 24, 25, 26, 29, 30, W. C. Winlock
at 9 P.M. June 15, 16, 17, 18, 19, 20, 21, 23, H. Searle.
other observations June 6, W. C. Winlock
" " other days, H. Searle.

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July 1875. Meteorological Record of

10 A.M.

Date	Barometer	Attached Thermometer	Casella 3235	Casella 12530	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's Tables	Wind	Clouds
1	30.047	73.8	75.8	75.0	76.4	75.0	76.6	63.8	49	3 W	10 Pm
2	30.151	66.3	70.9	70.2	71.3	70.2	72.0	57.0	37	7 W	0 M Fm
3	30.149	67.6	76.0	75.0	76.4	75.2	77.0	62.3	42	3 NE	2 Pi Rs
4	30.191	68.6	76.1	75.0	76.9	75.3	77.2	65.4	53	5 S	9 Pm Fm Rm Rs
5	30.144	73.3	81.1	80.9	82.5	80.6	82.1	74.0	69	8 SW	9 Pm M Fm Rs
6	30.096	75.0	80.3	79.7	81.5	79.3	81.3	75.6	78	4 SW	10 Pm Fm
7	(30.130)	(76.0)	(68.9)	(68.0)	(69.0)	(68.0)	(69.8)	(66.1)	(87)	(8 N)	(10 Pm)
8	30.279	70.3	77.7	76.9	78.0	77.0	78.7	70.2	67	6 N	4 M Fm Rs
9	30.245	71.9	79.2	78.7	80.0	78.8	80.3	69.4	58	3 S	2 Pi Rs Fm
10	29.972	71.8	77.4	76.9	78.3	77.0	78.3	69.6	66	7 S	9 Pi Rs M Fm
11	29.769	73.1	79.0	78.1	80.0	78.4	80.2	70.9	64	5 W	9 Pi Rs
12	29.973	70.1	75.8	74.8	76.1	75.1	77.0	63.1	45	6 SW	1 Pi Rs Fm
13	29.851	68.4	78.9	77.9	79.5	78.3	80.4	66.9	49	4 S	1 Rs haze
14	29.793	72.2	76.3	75.8	77.0	76.0	77.4	65.9	54	3 NE	4 M Fm
15	29.914	72.5	79.3	78.3	79.6	78.5	80.4	66.2	46	7 W	0 Rs Fm
16	29.860	73.8	70.6	69.7	70.3	70.0	71.1	67.0	84	3 S	10 Pm; a little rain
17	29.710	70.3	77.9	77.1	78.1	77.2	78.8	68.0	58	13 W	5 M Fm haze
18	29.828	69.6	68.8	68.0	68.4	68.0	69.2	56.7	86	5 E	10 Pm
19	30.089	64.0	63.9	62.9	63.8	63.1	65.0	53.9	48	10 NW	0 Fm
20	30.080	64.9	73.0	71.8	73.0	72.2	74.3	63.0	53	3 W	0 M Fm
21	29.893	67.9	71.9	71.1	72.7	71.2	73.3	65.3	65	6 SW	0 haze
22	30.010	70.1	76.8	75.9	77.1	76.1	77.8	64.1	46	5 SW	3 Pi Rs
23	29.846	71.7	66.6	65.9	66.8	65.9	67.8	65.0	91	8 E	10 Pm Fm
24	29.928	68.5	74.8	73.8	74.7	74.0	75.7	65.3	58	9 W	1 Rs haze
25	30.149	68.2	74.7	73.6	74.7	73.9	75.0	62.9	51	2 W	0
26	30.149	71.0	80.8	79.8	81.5	80.0	81.7	71.3	60	3 SW	9 Pi Rm Rs
27	30.002	74.8	80.3	79.7	80.6	79.9	81.2	71.3	62	3 NW	4 Rs Rm haze
28	29.913	73.2	70.3	69.6	70.6	69.6	70.9	64.9	74	0 NW	10 Pm; a little rain
29	30.006	71.4	79.0	78.0	79.8	78.3	80.1	69.8	60	1 W	10 Pm haze
30	29.955	70.8	72.7	71.8	73.0	71.9	73.8	65.8	67	2 W	4 M Fm
31	30.061	69.5	69.2	68.4	69.3	68.5	70.2	57.7	45	6 NW	0 Fm Rs

4 P.M.

Date	Barometer	Attached Thermometer	Casella 3235	Casella 12530	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's Tables	Wind	Clouds
1	30.002	75.3	71.2	70.9	72.1		72.3	61.0	52	11 W	10 Pm Pi M Fm
2	30.089	74.0	76.0	75.1	76.2		76.8	59.2	31	4 NW	1 M Fm
3	30.166	75.1	77.4	76.8	77.8		78.1	62.5	39	3 SE	9 Pi Rs Pm M
4	30.121	72.9	75.0	74.1	75.3		75.6	68.0	69	9 S	10 Pm M Fm
5	30.104	78.8	82.4	81.8	83.0		82.9	74.8	69	6 S	9 Pm M Fm
6	30.025	81.2	88.8	88.4	89.8		89.3	80.7	70	4 S	9 Pm M Fm Rs
7	30.192	77.4	73.0	72.2	73.0		73.6	66.4	70	4 E	7 Pi Rs Pm Pm M Fm
8	30.302	77.9	75.9	75.0	75.8		76.1	67.4	65	4 SE	8 Pm Fm
9	30.156	77.6	81.1	80.4	81.7		81.9	68.9	51	7 S	8 Pi Rs M Fm Rm
10	29.878	76.6	78.6	78.1	79.5		79.0	68.5	59	9 S	9 Pm Pi M Fm
11	29.796	78.3	80.0	79.2	80.4		80.8	63.8	37	6 W	3 Pi Rs Fm
12	29.916	76.0	76.0	75.4	76.6		76.6	64.3	50	11 S	8 Pi Rs Fm
13	29.758	77.0	83.0	82.2	83.7		83.8	69.2	47	6 S	9 Pi Rs Rm Fm
14	29.798	78.2	76.0	75.0	76.0		76.8	65.2	54	7 E	3 M Fm haze
15	29.889	79.7	81.9	81.0	81.8		82.3	66.3	41	7 E	0 M Fm haze
16	29.774	74.4	67.0	66.6	67.0		67.4	64.9	93	5 E	10 Pm; raining
17	29.748	76.2	79.7	78.8	79.7		80.3	63.4	36	13 NW	0 Rs Fm
18	29.784	79.0	58.3	58.0	59.2		59.9	56.2	85	5 E	10 Pm
19	30.110	69.8	71.9	71.0	71.9		72.7	55.9	30	13 NW	0 M Fm
20	30.001	72.7	76.0	75.4	76.7		76.8	62.8	44	7 SW	9 Pi M Fm
21	29.831	74.3	79.1	78.3	79.6		80.0	69.7	60	13 S	2 M haze
22	30.001	77.0	78.0	77.1	78.2		78.4	63.0	41	6 E	9 Pi Rs Fm
23	29.816	70.9	63.5	63.1	64.0		64.8	62.4	93	8 N	10 Pm
24	29.960	76.2	80.7	79.7	80.6		81.4	67.0	46	7 W	2 M Fm
25	30.132	76.2	80.0	79.0	80.4		80.7	66.9	48	3 W	0 haze
26	30.090	78.4	80.6	80.0	81.0		81.0	72.1	66	10 S	10 Pm
27	29.950	80.0	81.9	80.8	82.2		83.0	72.4	60	1 NW	4 M Fm
28	29.910	76.7	78.0	77.0	78.4		79.0	66.8	53	3 NW	4 M Fm haze
29	29.970	77.2	77.0	76.4	77.5		77.7	69.4	67	5 S	10 Pm
30	29.893	78.1	81.9	81.0	82.2		82.4	69.6	52	5 SW	1 haze Fm
31	30.032	74.9	74.8	74.6	75.3		75.4	60.6	40	5 NW	7 Pi Rs M Fm

Sums of columns, number of observations, means, and reduction of barometer to the freezing point.

	10 A.M.	4 P.M.
Barometer	930.183	929.194
	31	31
	30.006	29.974
	−.113	−.127
	29.893	29.847
Attached thermometer	2190.6	2359.0
	31	31
	70.7	76.1
Casella 3235	2324.0	2384.7
	31	31
	75.0	76.9
Casella 12530	2298.3	2362.4
	31	31
	74.1	76.2
No. 4	2336.9	2396.6
	31	31
	75.4	77.3
Minimum after setting	2302.5	
	31	
	74.3	
Dry bulb	2354.6	2406.8
	31	31
	76.0	77.6
Relative humidity	1872	1718
	31	31
	60	55
Wind	158	207
	31	31
	5.1	6.7
Clouds	156	191
	31	31
	5.0	6.2

Rain gauge A, on roof of shed, north of Clock Room.

Date	Time	Ounces	Inches
1	10 A.M.	12 1/2	0.108
5	10 A.M.	1 5/8	0.014
6	7 1/2 A.M.	72	0.621
7	10 1/2 A.M.	67 3/8	0.581
17	8 A.M.	19 3/8	0.170
19	10 A.M.	25 7/8	0.223
23	10 A.M.	78	0.672
24	10 A.M.	24 3/4	0.213
27	8 A.M.	2	0.017
29	10 A.M.	1 1/8	0.010
30	10 A.M.	18 7/8	0.162
Total		323 1/4	2.791

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Harvard College Observatory. July 1875.

Date	External Thermometer No. 4				Casella 3235		Casella 12530		Maximum after setting	Extreme temperatures		Rainfall in inches	Remarks.
	7 A.M.	2 P.M.	9 P.M.	Mean	2 P.M.	9 P.M.	2 P.M.	9 P.M.		Maximum set at 10 A.M.	Minimum set at 10 A.M.	Gauge C. Examined at 10 A.M.	
1		73.8	65.6		73.0	65.7	72.6	65.0	75.2	82.3	67.1	0.099	yl
2		74.8	66.2		74.9	65.6	73.8	66.6	70.8	76.3	54.0	0.000	Rhz
3	62.7	76.7			76.8		76.0		75.6	76.0	53.8	0.000	Rch y< A10.
4	67.0	77.1	70.4	71.5	76.1	70.3	75.9	69.5	75.0	80.6	55.2	0.000	y Rh
5	74.5	85.7	73.3	77.8	85.0	72.8	84.1	72.0	80.7	81.3	68.1	0.022	h Ry Thunder shower in the evening.
6	74.0	89.6	71.6	78.4	89.1	70.5	88.3	70.2	77.7	85.0	69.0	0.629	h u Ry {Thunder shower beginning about 4¾ P.M.} Evening rainy.
7	75.5	74.3	66.2	72.0	74.1	65.9	73.1	65.0	(69.0)	(89.7)	(68.0)	(0.607)	yw y> A 3.
8	66.9	78.9	67.7	71.2	78.9	68.0	77.9	67.0	77.0	77.3	58.3	0.000	Rrh
9	69.8	(84.7)	67.3	73.9	(83.7)	67.5	(83.1)	66.6	78.8	79.5	62.1	0.000	Rrh
10	67.9	80.8	69.5	72.7	80.0	69.4	79.2	68.7	76.8	84.1	62.1	0.000	y Rh
11	73.5	80.4	70.7	74.9	80.3	70.7	79.6	70.0	78.8	82.4	66.9	0.000	z Rh
12	64.5	79.2	65.9	69.9	78.8	66.2	78.1	65.2	75.4	81.9	56.8	0.000	Rrh y< RU.
13	65.4	84.3			83.7		83.0		78.0	79.1	57.1	0.000	Rrh y< RzU.
14	69.5	79.7	68.6	72.6	79.8	68.0	78.3	67.7	76.2	83.8	63.9	0.000	Rrh
15	68.7	85.1	73.0	75.6	85.0	73.1	83.9	72.6	78.7	82.6	61.9	0.000	hz
16	69.2	66.9	63.8	66.6	67.9	63.7	66.6	62.8	70.3	85.4	66.0	0.000	ya Light rain most of the day.
17	66.9	80.7	66.3	71.3	80.7	66.6	79.8	65.7	77.1	77.5	59.2	0.177	rwu
18	64.8	60.6	57.9	61.1	60.7	58.0	60.0	57.0	68.7	80.7	56.3	0.000	yl Showers at times.
19	66.8	70.5	(61.4)	66.2	70.6	(62.0)	69.8	(61.1)	64.0	68.9	53.1	0.232	zw
20	59.7	78.2	65.1	67.7	77.8	65.2	76.9	64.0	72.3	72.7	50.0	0.000	zw Ry N.
21	62.5	81.5			81.3		80.3		72.0	77.9	57.7	0.000	Rrhz
22	66.9	83.6	71.4	74.0	82.8	71.6	82.0	70.5	76.0	81.0	61.7	0.000	Ryu y< N. Rain following night.
23	67.5	64.9	65.3	65.9	64.6	64.8	64.0	64.6	66.0	83.3	64.8	0.695	yl Rain at times.
24	63.0	80.7			80.6		79.8		73.4	73.7	59.0	0.210	zRh
25	64.7	79.5	69.6	71.3	79.4	70.0	78.5	69.2	74.0	80.5	58.0		
26	66.4	85.1	72.1	74.5	84.1	72.2	83.7	71.0	80.0	80.3	59.8	0.000	Ryu y< A little rain in the afternoon.
27	72.4	85.8	74.9	77.7	85.7	75.0	84.6	74.3	79.5	86.0	67.5	0.022	Rrh y< {Squall with a few drops of rain about 3 P.M.} y> A3.
28	67.2	77.0			76.6		75.6		70.1	86.0	66.3	0.011	yu A little rain early. y> N. zy N.
29	67.9	(80.1)	65.5	71.2	(79.3)	66.4	(78.8)	65.6	78.0	78.5	60.4	0.000	y Ru Afternoon somewhat rainy.
30	65.5	81.2	71.0	72.6	81.0	72.3	80.0	71.0	70.8	83.8	61.0	0.177	Rrzh
31	63.9	75.4	65.6	68.3	75.7	65.4	74.6	64.9	69.0	81.5	60.0	0.000	Rrh
Sums	1955.2	2436.8	1765.9	1718.9						2499.6	1885.1	2.881	Rainfall for month 2.88 inches.
Means	67.4	78.6	67.9	71.6						80.63	60.81		Mean temperature " " (mean of 3 means for 7, 2, 9.) 71.3 Fahrenheit.

Maximum " " " (July 7) 89.7 "
Minimum " " " (July 19) 53.1 "
" (reduced to standard of No. 4) 54.2 "

The velocity of the wind is merely estimated in miles per hour. See general remarks on observations of 1873.

Observations in parentheses ( ) were not made at the regular times. The actual times are given below.

Date	Regular times.	Actual times.
7	10 A.M.	10⅙ A.M.
9	2 P.M.	2⅔ P.M.
19	9 P.M.	9¼ P.M.
29	2 P.M.	3¼ P.M.

The observations below were made at times when the cloth about the wetted bulb of the psychrometer was apparently dry. See similar notes in record for 1873.

Date	Time A.M.	Dry bulb	Wet bulb	No. 4
3	9	74.2	73.3	74.2
5	9⅓	81.6	80.8	81.6
21	9¾	72.6	71.5	72.4

The relative humidity for July has been computed after applying the corrections for error of the psychrometer given in the record for September, 1873.

Auroras noticed.

None this month.

Observers; at 7 A.M. Ann McCormick except July 14.
7 " (July 14) A. Searle.
9 P.M. W. C. Winlock.
10 A.M., 2 P.M., 4 P.M., A. Searle except July 25.
10 " 2 " 4 " (July 25) R. W. Willson.

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August 1875. Meteorological Record of

Date	Barometer	Attached thermometer	Casella 3235	Casella 12530	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's tables	Wind	Clouds
1	30.180	67.0	67.1	66.1	67.1	66.5	68.2	55.4	43	6 NW	1 Rs
2	30.313	68.2	64.6	63.7	64.7	63.9	65.5	57.0	60	3 NE	10 Pm
3	30.248	64.8	58.9	58.1	58.7	58.0	59.8	58.1	97	9 E	10 Pm; raining
4	30.156	64.4	64.2	63.8	64.9	64.0	65.8	63.5	94	0 calm	10 Pm fog
5	30.012	71.6	73.3	73.0	74.3	73.0	74.4	70.8	87	3 S	10 Pm
6	30.021	70.0	76.0	75.4	76.5	75.9	77.4	69.6	69	4 S	4 haze
7	29.948	74.3	80.9	80.0	81.4	80.2	81.7	74.7	73	12 S	10 Pm Fm M Pm Rs
8	30.004	75.0	77.9	77.4	78.6	77.5	79.0	72.7	76	3 S	8 Pm Rs Pm Fm
9	29.999	72.0	76.0	75.0	76.2	75.3	77.1	69.9	72	3 SW	3 M Fm Rs
10	29.986	72.2	76.4	75.2	76.4	75.6	77.2	66.2	55	0 NW	2 Rs haze
11	30.114	73.0	79.1	78.6	79.9	78.8	79.9	71.9	69	3 W	9 Pi Rs M Fm haze
12	30.129	75.4	78.1	77.2	78.7	77.4	79.1	75.3	64	7 S	10 Pm
13	30.099	77.6	82.8	81.3	82.8	81.8	83.7	75.9	71	10 S	5 M Fm Rs
14	29.990	77.3	79.1	78.6	79.9	78.6	80.2	71.9	68	4 W	9 M Fm Rs
15	30.006	76.7	81.7	80.5	81.6	81.1	82.7	72.8	63	1 SW	0 Rs Fm haze
16	29.966	76.7	*71.2	72.1	73.2	*71.1	*72.0	70.4	96	2 SE	10 Pm; raining
17	30.004	73.8	68.6	67.9	68.8	68.0	69.2	65.4	86	3 NE	10 Pm
18	29.974	72.5	70.8	69.9	70.9	70.0	71.8	67.0	82	4 E	10 Pm Fm
19	29.863	74.0	*76.9	*77.6	79.8	78.5	80.2	74.6	79	1 SW	8 Pm M Fm Rs
20	29.992	75.6	79.3	78.4	80.1	78.9	80.4	73.4	73	1 S	10 Pm M Fm Rs
21	30.140	74.5	77.2	76.1	77.2	76.8	78.3	69.0	63	3 SW	1 M Fm
22	30.228	73.2	75.7	74.7	76.0	75.0	76.8	68.9	68	4 SW	5 Pi Rs Fm
23	(30.340)	(71.4)	(62.5)	(61.6)	(62.6)	(61.8)	(63.6)	(57.4)	(72)	(11 NW)	(10 Pi Rs Pm Fm Rm)
24	30.399	67.8	66.9	65.9	66.7	66.1	67.7	57.7	55	5 N	5 Rs M Fm
25	30.378	67.9	66.0	65.0	66.0	65.4	67.0	57.8	59	5 E	10 Pi Rs Pm
26	30.310	64.7	67.9	66.9	67.8	67.0	68.9	57.6	50	5 E	0 haze
27	30.314	64.8	69.0	68.1	69.3	68.2	70.1	57.6	45	7 E	1 Rs haze
28	30.269	65.7	69.1	68.0	68.8	68.8	70.7	62.4	63	0 SE	0 haze Rs
29	30.049	67.3	75.4	74.0	74.9	74.6	76.4	67.1	62	4 NW	0 haze
30	29.985	70.0	77.4	76.6	77.6	76.8	78.6	69.4	64	1 NE	3 Pi Rs Fm
31	30.068	71.0	76.0	75.0	76.0	75.1	76.8	68.6	67	8 NW	3 M Fm haze
1	30.165	73.0	72.7	72.0	72.9		72.9	57.2	35	4 NW	8 Pi Rs Pm Fm
2	30.318	70.1	65.9	65.4	65.9		65.9	57.1	65	3 SE	10 Pm; a little rain
3	30.148	65.7	61.9	61.0	61.9		62.8	61.3	98	3 NW	10 Pm
4	30.090	71.0	81.0	80.6	81.7		81.8	74.4	72	9 S	7 Pm M Fm Rs
5	29.947	74.8	75.0	74.5	75.7		76.4	73.1	88	0 SW	10 Pm M Fm
6	30.023	76.9	76.4	75.9	76.7		77.0	67.7	63	5 SE	5 Rs M Fm haze
7	29.942	78.6	83.6	82.7	83.9		84.2	74.4	64	14 S	5 Pm M Fm Rs
8	30.003	76.8	75.0	74.6	76.0		76.1	70.3	77	5 S	8 Pm Fm Rm Pi
9	29.974	78.7	79.5	78.8	79.8		80.2	65.3	43	7 W	2 M Fm Rs
10	29.980	78.7	81.2	80.8	82.0		82.0	67.3	45	8 W	5 Pi Rs M Fm haze
11	30.116	78.0	79.0	78.7	79.9		79.7	69.0	59	5 SE	10 Pm M Fm Rs
12	30.098	80.0	84.1	83.5	84.5		84.9	75.3	64	6 S	5 M Fm Rs
13	30.020	82.2	84.1	83.4	84.4		84.8	76.3	68	15 SW	5 M Fm Rs
14	(29.972)	(83.1)	(83.9)	(83.4)	(83.9)		(84.8)	(74.0)	(60)	(2 W)	(9 Pi Rs Pm M Fm)
15	29.995	82.1	84.0	83.6	84.8		84.7	74.6	63	5 SE	10 Pm M Fm Rs
16	29.928	77.7	71.8	71.0	71.7		72.3	67.8	82	6 E	10 Pm M Fm
17	29.993	74.5	71.1	70.2	71.2		71.9	66.9	80	1 E	10 Pm
18	29.851	73.7	70.0	69.2	70.0		71.0	69.5	97	4 SE	10 Pm M Fm Rs
19	29.878	79.0	79.8	78.5	80.2		80.4	74.6	78	4 S	10 Pm M Fm
20	29.987	79.0	†76.7	77.6	79.0		†78.0	74.3	87	1 SW	10 Pm M Fm Rs
21	30.132	80.6	81.4	80.6	81.7		82.1	69.5	52	4 W	4 M Fm
22	30.183	78.9	78.4	77.9	78.8		78.8	69.9	65	10 S	10 Pi Pm Rs M Fm
23	30.368	74.0	64.1	63.4	63.7		64.4	56.2	62	3 E	10 Pm Fm
24	30.381	74.0	67.6	66.9	67.4		68.2	56.8	49	7 E	9 Pi Rs Fm; thin
25	30.350	73.2	69.1	68.4	69.1		69.9	57.0	44	5 E	0 Pi Rs haze
26	30.290	72.7	70.8	70.0	70.8		71.4	56.3	35	3 SE	0 haze Rs Fm
27	30.291	72.3	71.4	70.4	71.5		72.3	61.7	54	2 SE	0 haze
28	30.185	73.7	75.7	75.0	76.1		76.6	63.8	49	3 SE	1 haze
29	29.997	75.9	82.1	81.4	82.3		83.0	67.8	44	4 NW	5 Pi Rs R haze
30	29.955	77.8	80.5	79.8	80.6		81.1	68.9	54	4 E	6 Pi Rs haze
31	30.099	77.8	74.8	73.7	74.7		75.4	67.5	68	7 E	1 Rs haze

10 A.M.

4 P.M.

Sums of columns, number of observations, means and reduction of barometer to the freezing point.

	10 A.M.	4 P.M.
Barometer	933.484	932.659
	31	31
	30.112	30.086
	−.115	−.128
	29.997	29.958
Attached thermometer	2210.4	2364.5
	31	31
	71.3	76.3
Casella 3235	2266.0	2352.6
	31	31
	73.1	75.9
Casella 12530	2241.7	2332.9
	31	31
	72.3	75.3
No. 4	2277.4	2362.8
	31	31
	73.5	76.2
Minimum after setting	2249.7	
	31	
	72.6	
Dry bulb	2300.2	2375.0
	31	31
	74.2	76.6
Relative humidity	2145	1964
	31	31
	69	63
Wind	132	159
	31	31
	4.3	5.1
Clouds	187	205
	31	31
	6.0	6.6

Rain gauge A on roof of shed, north of Clock Room.

Date	Time	Ounces	Inches
3	10 A.M.	108 3/4	0.937
3	4 P.M.	61	0.526
4	10 A.M.	9	0.078
5	10 A.M.	13 3/4	0.115
5	4 P.M.	30	0.259
6	7 A.M.	19 1/2	0.168
9	10 A.M.	20	0.172
12	10 A.M.	5 3/8	0.046
14	10 A.M.	2	0.017
14	4 1/2 P.M.	0 7/8	0.007
16	4 P.M.	63 1/8	0.544
18	4 P.M.	56 1/4	0.485
18	6 1/4 P.M.	190 5/8	1.640
19	7 1/4 A.M.	2	0.017
20	4 P.M.	43 1/4	0.373
23	1 1/2 P.M.	19	0.164
Total		644	5.548

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Harvard College Observatory. August 1875.

Date	External Thermometer No. 4 7 A.M.	2 P.M.	9 P.M.	Mean	Casella 3235 2 P.M.	9 P.M.	Casella 12530 2 P.M.	9 P.M.	Maximum after setting	Extreme temperatures Maximum set at 10 A.M.	Minimum set at 10 A.M.	Rainfall in inches. Gauge C examined at 10 A.M.	Remarks.
1	59.2	71.4	64.9	65.2	71.6	65.0	70.5	64.4	67.3	76.0	54.5	0.000	rw y<
2	61.5	69.2	58.3	63.0	68.3	58.8	67.9	57.8	64.4	72.2	59.0	0.000	y Afternoon rather rainy.
3	68.4	61.9	56.6	62.3	61.6	56.7	61.0	55.7	58.8	69.0	57.0	0.971	yc Frequent showers.
4	59.6	76.2	70.6	68.8	†74.0	71.8	74.8	71.7	63.2	63.6	55.0	‡0.662	yw
5	70.4	79.0	67.9	72.4	78.4	67.9	78.1	67.6	71.6	81.3	64.0	0.121	yua {Showers with some thunder; one heavy shower about 2 P.M.} r 10½
6	67.2	77.7	69.7	71.5	77.7	69.8	76.7	68.8	72.7	80.8	60.6	‡0.419	zu Sy
7	73.8	83.8	73.8	77.1	83.2	73.9	82.8	72.9	79.9	80.4	68.1	0.000	yu {A few drops of rain about 8 A.M.} Sr A 3. {Rain following night}
8	70.8	75.7	71.4	72.6	74.9	71.7	74.8	70.3	75.4	84.0	69.1	0.154	yru A little rain. Sr A 2.
9	67.4	81.4	68.9	72.6	81.1	69.6	80.1	68.5	75.5	78.0	63.6	0.022	r Ru
10	66.5	83.0	71.8	73.8	82.6	71.2	81.7	70.4	75.7	81.2	61.3	0.000	Ru y< Ryzu N.
11	67.2	82.3	71.8	73.8	81.2	71.6	80.9	70.7	78.3	82.0	61.7	0.000	yu y<
12	75.1	85.8	76.0	79.0	85.1	76.0	84.6	75.0	77.6	82.4	70.3	0.055	yru A little rain early. y> A 11. Ru A 3. Ry A 4.
13	77.1	86.7			86.2		85.2		82.0	84.8	73.2	0.000	r Ry
14	73.2	80.4	74.9	76.2	79.6	75.0	78.9	74.3	79.0	86.7	71.0	0.022	Rhy Slight shower about 1¾ P.M.
15	71.8	81.7	74.9	76.1	81.7	75.1	81.0	74.3	81.0	84.9	68.0	0.011	Rhy
16	73.5	76.8	68.1	72.8	*74.4	68.3	75.0	67.6	*71.0	81.3	70.2	0.165	yw Forenoon rainy.
17	67.2	70.1			70.0		69.6		68.4	73.1	65.6	‡0.375	yw
18	67.5	68.0	69.5	68.3	68.0		67.4		70.6	72.3	64.9	0.000	y Ru a {Heavy shower from about 1½ P.M. to about 2 P.M.; other showers later; some thunder.} {Very heavy shower 4 to 6 P.M.}
19	74.8	82.7	73.3	76.9	82.2		81.7		75.8	76.8	67.1	‡2.140	yu
20	72.4	71.4	72.0	71.9	†70.0		69.8		78.3	83.6	69.3	0.000	yu {Thunder shower x 1 to 2 P.M.}
21	72.0	82.3	70.5	74.9	82.0		81.9		76.6	83.6	67.0	‡0.364	Rrh
22	67.8	81.3			81.0		80.0		75.1	82.0	62.4	0.000	Ryy Some rain after noon.
23	61.0	64.3	59.7	61.7	64.4		64.0		(62.6)	(80.9)	(60.2)	(0.177)	y
24	59.0	69.0			69.2		68.4		66.4	66.3	66.1	0.000	Ryw
25		70.9	59.6		70.9		70.0		65.9	69.2	56.0	0.000	Rrw
26		72.2	60.3		72.0		71.2		67.4	70.9	50.1	0.000	rw
27	53.2	72.0	61.3	62.2	72.0		71.1		68.4	71.4	50.0	0.000	rw
28	53.3	77.0	64.0	64.8	77.0		76.0		68.7	71.8	48.4	0.000	rw
29	64.3	81.8	60.3	68.8	81.9		80.9		74.3	76.0	55.0	0.000	r Rh
30		82.0	68.5		81.8		80.9		76.6	81.8	59.4	0.000	r Ru
31	66.5	77.8	64.4	69.6	77.9		76.9		76.3	81.0	60.1	0.000	Rhr
Sums	1881.7	2375.8	1823.0	1696.3						2409.3	1928.2	5.658	Rainfall for month 5.66 inches.
Means	67.2	76.6	67.5	70.7						77.72	62.20		Mean temperature " " (mean of 3 means for 7, 2, 9.) 70.4 Fahrenheit.

Maximum " " " (Aug. 14) 86.7 "
Minimum " " " (Aug. 28) 48.4 "
" (reduced to standard of No. 4) 49.3 "

The velocity of the wind is merely estimated in miles per hour. See general remarks on observations of 1873.

Observations in parentheses ( ) were not made at the regular times. The actual times are given below.

Date	Regular times	Actual times
14	4 P.M.	4½ P.M.
23	10 A.M.	8 A.M.

The relative humidity for August has been computed after applying the corrections for error of psychrometer given in the record for September, 1873.

Auroras noticed.

None this month.

* Low readings of thermometers noticed and explained by obvious dampness, as follows: Aug. 16, 10 A.M., Casella 3235, maximum, minimum, and dry bulb; 2 P.M., Casella 3235; Aug. 19, 10 A.M., Casella 3235, Casella 12530

† Low readings of thermometers noticed and attributed to dampness of instruments or surrounding wood-work, not obvious, as follows: Aug. 4, 2 P.M., Casella 3235; Aug. 20, 2 P.M., Casella 3235; 4 P.M., Casella 3235, dry bulb.

‡ Gauge C examined as follows:

Aug. 3, 4 P.M.	0.574	
4, 10 A.M.	0.088	0.662
5, 4 P.M.	0.254	
6, 10 A.M.	0.165	0.419
16, 4 P.M.	0.364	
17, 10 A.M.	0.011	0.375
18, 4 P.M.	0.474	
18, 6¼ P.M.	1.655	
19, 10 A.M.	0.011	2.140
20, 4 P.M.		0.364

Observers; at 7 A.M., Bridget Kenny Aug. 18 to end of month; Ann McCormick previously.
at 9 P.M., " " " " " " " ; W. C. Winlock "
Other observations by A. Searle.

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September 1875. Meteorological Record of

10 A.M.

Date	Barometer	Attached thermometer	Casella 3235	Casella 12530	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's tables	Wind	Clouds
1	30.236	69.1	73.7	72.7	73.5	72.8	74.5	65.3	62	2 SE	0 haze
2	30.096	68.7	68.1	66.9	68.0	67.5	69.5	63.4	75	2 S	0 haze
3	29.938	72.0	77.0	76.1	77.2	76.5	78.2	69.9	67	2 SE	5 Pi Ro Fm haze
4	29.720	73.0	74.1	73.1	74.4	73.3	74.4	71.8	91	5 S	10 Pm Fm
5	29.848	71.4	70.8	69.9	70.6	70.0	71.6	61.4	56	12 NW	1 M Fm
6	29.776	70.8	72.4	71.4	72.3	71.8	73.4	65.7	68	7 W	0 Ro M Fm
7	29.967	67.1	68.4	67.5	68.3	67.8	69.3	59.7	58	8 NW	0 M Fm Ro
8	30.128	65.5	68.3	67.5	68.2	67.8	69.4	58.9	55	6 W	6 Pm Fm Ro Pm
9	30.198	69.0	75.0	73.6	74.7	74.3	76.2	67.0	63	0 SW	1 Pi Ro Fm haze
10	29.750	72.0	76.6	75.6	76.8	75.6	77.4	71.1	75	7 SW	10 Pm M Fm
11	30.351	58.2	53.1	52.3	52.8	52.4	54.0	45.4	51	6 NW	0
12	30.480	54.2	60.3	59.3	60.2	59.6	61.9	53.7	60	2 SE	7 Pi Pi Ro M Fm
13	30.365	61.2	60.3	59.6	60.4	59.7	61.8	60.0	97	0 N	10 Pm; a little rain
14	30.400	63.7	64.8	64.0	65.4	64.2	66.3	60.0	73	2 NW	10 Pm Fm
15	30.152	65.0	67.5	66.7	68.2	67.0	68.8	63.6	79	3 S	9 Pm Fm Ro
16	29.902	66.4	64.9	64.1	65.6	64.1	66.1	62.8	88	0 S	10 Pm
17	29.528	66.0	*62.0	*61.9	63.7	62.8	64.8	59.2	76	10 W	10 Pm Fm
18	29.836	56.0	51.0	50.2	50.8	50.1	52.0	42.8	46	16 NW	7 Pi Ro M Fm
19	29.768	55.8	48.6	47.8	48.1	47.2	49.1	45.8	85	0 E	10 Pm Fm; raining
20	29.844	56.0	54.0	53.6	54.0	53.3	55.0	48.0	63	5 SE	8 Pi Pi Ro Fm
21	29.987	57.0	56.2	55.3	55.8	55.4	57.3	49.7	61	4 W	1 Pm Fm Ro
22	30.163	52.7	48.7	47.7	48.1	47.6	49.5	40.4	44	8 NW	5 M Fm
23	30.336	51.0	50.1	49.1	49.5	49.1	51.0	41.2	41	6 NW	0 M Fm
24	30.323	53.7	56.6	55.1	55.8	55.6	57.7	49.2	56	2 W	0
25	30.093	56.5	59.7	58.5	59.1	58.9	60.9	53.8	65	0 SW	0 haze
26	29.589	59.5	60.0	59.3	60.1	59.2	61.1	57.4	85	2 S	10 Pm Fm; a little rain
27	29.859	57.8	58.4	57.4	58.3	57.6	59.6	51.3	59	6 W	7 Pi Pi Pm Ro Fm
28	30.046	61.0	58.6	57.6	58.2	57.3	59.4	51.8	63	9 NW	2 Ro M Fm
29	30.199	56.7	52.6	51.9	52.2	51.6	53.3	49.1	80	3 E	10 Pm
30	29.748	58.8	61.9	61.2	62.1	61.2	63.0	58.7	82	6 S	10 Pm Fm

4 P.M.

Date	Barometer	Attached thermometer	Casella 3235	Casella 12530	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's tables	Wind	Clouds
1	30.214	76.1	72.8	71.9	72.6		73.3	62.3	54	6 E	0 haze
2	30.006	75.6	75.7	75.0	75.8		76.4	69.5	73	4 SE	2 haze M Fm
3	29.914	78.0	73.5	72.8	73.2		73.5	67.0	73	5 E	9 Pi Ro Fm M haze
4	29.618	79.0	84.0	83.1	84.2		84.8	73.7	59	6 SW	4 Pm M Fm haze
5	29.859	76.3	75.8	75.0	75.7		76.5	63.5	48	8 W	0 Ro Fm
6	29.782	75.9	75.8	75.0	75.7		76.4	59.7	34	11 W	2 Pi Ro M Fm
7	29.956	72.8	72.4	71.6	72.3		73.1	59.3	42	12 W	1 M Fm
8	30.067	73.0	75.9	75.0	75.9		76.6	61.6	41	6 SW	0 Ro M
9	30.132	77.0	80.3	79.3	80.4		81.5	69.2	53	0 E	1 Ro Fm haze
10	29.944	70.9	53.0	52.3	53.0		54.3	51.6	90	9 NW	10 Pm
11	30.332	66.0	61.3	60.7	61.2		62.3	49.3	36	5 NW	0
12	30.456	63.9	64.4	63.8	64.5		65.2	54.9	61	5 SE	10 Pi Ro Pm Fm
13	30.323	65.6	68.1	67.7	69.0		69.6	64.3	79	0 N	10 Pm Fm
14	30.330	68.9	66.5	65.6	66.1		67.0	60.2	70	3 E	10 Pi Pm Fm
15	30.032	70.7	72.2	71.3	72.5		73.2	64.4	63	3 S	9 Pi Ro Pm M Fm
16	29.843	69.7	61.0	60.5	61.1		61.9	60.2	97	6 E	10 Pm; a little rain
17	29.602	69.8	60.5	*58.0	60.7		61.6	52.4	55	15 W	10 Pm Fm
18	29.883	61.0	56.1	55.4	56.1		57.0	46.1	42	10 NW	10 Pi Ro; thin
19	29.718	58.1	48.8	47.9	48.5		49.7	45.0	75	6 NE	10 Pm
20	29.799	61.4	60.2	60.0	60.7		60.9	54.2	69	5 SE	10 Pm Fm; a little rain
21	29.994	61.7	59.0	58.5	59.0					2 W	8 Pm M Fm
22	30.150	60.2	52.9	52.2	52.7		53.5	41.8	33	8 N	6 M Fm Ro
23	30.292	59.7	55.0	54.0	54.6		55.6	43.7	35	3 W	1 M Fm
24	(30.250)	(62.3)	(64.2)	(63.6)	(64.2)		(65.3)	(51.3)	(35)	(6 SW)	(0 Ro)
25	29.967	64.3	66.7	65.9	66.6		67.4	57.8	57	9 S	0 haze
26	29.612	61.0	54.7	53.8	54.4		55.5	48.9	66	11 NW	8 Pm M Fm
27	29.767	68.4	66.9	66.0	66.8		67.7	53.8	38	8 SW	1 Ro M Fm
28	30.096	64.9	61.3	60.7	61.2		62.2	49.8	39	7 NW	2 Pm M Fm
29	30.033	58.0	56.2	55.4	56.0		57.0	52.5	79	4 E	10 Pm
30	29.629	64.0	67.4	66.9	67.6		68.2	61.9	82	12 SW	10 Pi Ro M Fm

Sums of columns, number of observations, means, and reduction of barometer to the freezing point.

	10 A.M.	4 P.M.
Barometer	900.626	899.600
	30	30
	30.021	29.987
	−.091	−.105
	29.930	29.882
Attached thermometer	1865.8	2034.2
	30	30
	62.2	67.8
Casella 3235	1873.7	1962.6
	30	30
	62.5	65.4
Casella 12530	1846.9	1938.9
	30	30
	61.6	64.6
No. 4	1872.4	1962.3
	30	30
	62.4	65.4
Minimum after setting	1851.3	
	30	
	61.7	
Dry bulb	1906.5	1927.2
	30	29
	63.5	66.5 (or adding estimate for Sept. 21) mean 66.2
Relative humidity	2024	1678
	30	29
	67	58
Wind	141	195
	30	30
	4.7	6.5
Clouds	159	164
	30	30
	5.3	5.5

Rain, gauge A, on roof of shed, north of Clark Room.

Date	Time	Ounces	Inches
4	10 A.M.	4 1/8	0.406
6	10 1/2 A.M.	1 5/8	0.109
10	4 P.M.	3 7/8	0.326
13	10 A.M.	5 1/4	0.465
14	10 A.M.	3 1/8	0.033
16	10 A.M.	1	0.060
17	10 A.M.	15 1/4	1.328
19	10 A.M.	8 7/8	0.076
20	8 1/4 A.M.	8 1/2	0.073
21	7 1/2 A.M.	10 3/8	0.092
22	10 A.M.	1 15/16	0.010
27	10 A.M.	35 1/2	0.306
30	10 A.M.	12	0.103
Total		39 3/8	3.387

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Harvard College Observatory. September 1875.

Date	External Thermometer No. 4				Casella 32235		Casella 12530		Maximum after setting	Extreme temperatures		Rainfall in inches	Remarks.
	7 A.M.	2 P.M.	9 P.M.	Mean	2 P.M.	9 P.M.	2 P.M.	9 P.M.		Maximum set at 10 A.M.	Minimum set at 10 A.M.	Gauge C Examined at 10 A.M.	
1	61.3	73.9	63.2	66.1	74.0		73.0		73.0	78.0	57.1	0.000	rw
2	67.8	74.2	67.3	69.8	74.0		73.6		68.0	73.9	55.2	0.000	rw Rz. Fog early.
3		77.7			77.8		76.7		76.5	76.6	63.3	0.000	Ryw z.
4		84.8			84.8		83.8		72.1	79.0	64.7	0.364	yu y> Rz A2. {Heavy showers about 3½ to 4 A.M.}
5		74.8			74.9		73.9		70.5	84.4	60.3	0.000	rw
6	(64.3)	77.9	62.2	68.1	77.7	63.0	77.0	62.4	71.9	75.1	61.4	0.110	rw Rain previous night. {A few drops of rain in the evening}
7	58.8	72.5	61.0	64.1	72.2	61.6	71.6	61.4	68.3	77.2	55.5	0.000	rw
8	54.8	76.1	(67.6)	66.2	76.2	(68.0)	75.2	(67.2)	67.9	72.0	50.2	0.000	rw
9	61.8	82.3	69.8	71.3	82.0	70.6	81.8	69.5	74.2	76.0	59.2	0.000	h Rw Sz. Sy U.
10	68.2	55.0	52.0	58.4	55.0	52.1	55.1	51.4	75.7	83.5	64.4	0.000	y Rh {About ¼ 2 P.M. began to blow hard from the northwest; heavy showers at times till 5¼ P.M., with some rain most of the time.} Rz U.
11	43.7	60.2	52.2	52.0	60.4	53.0	59.6	51.5	53.9	78.9	40.8	†0.375	rl
12	(45.4)	63.4	55.2	54.7	63.5	56.5	62.9	55.2	60.0	61.0	38.3	0.000	y Rz y<
13	54.3	66.1	61.0	60.5	65.1	62.2	65.0	61.0	59.8	65.9	52.4	0.485	ya Morning rainy; a little rain at times later.
14	55.4	70.2	59.5	61.7	69.9	60.8	69.6	59.2	64.6	67.0	53.4	0.044	yz
15	59.5	74.1	61.9	65.2	73.5	62.8	73.0	61.5	67.0	69.9	57.2	0.000	yz Sr BN Thunder shower about 6 P.M.
16	60.8	65.4	57.9	61.4	65.8	58.5	65.1	57.7	64.8	73.3	59.1	0.055	y {A little rain previous to 4 P.M. More rain later.}
17	60.8	65.0	52.2	59.3	64.9	52.8	*61.6	52.2	61.7	69.4	56.6	1.323	y Rw
18	44.7	56.0	46.3	49.0	56.1	46.8	55.3	46.0	51.7	66.1	43.1	0.000	rl Ry 7 to 11 Rz 11 to 1. y< A1.
19	43.8	47.7	47.0	46.2	47.6	47.2	47.0	46.8	48.5	56.7	42.5	0.077	yl Forenoon rainy
20	42.0	59.8	51.6	51.1	59.2	52.2	58.8	51.3	53.8	53.8	40.0	0.077	Srl y< {A few drops of rain near 4 P.M.} {Shower about 8 P.M. Clear at 10 P.M.}
21	(47.8)	60.3	50.0	52.7	60.0	50.5	59.6	50.0	56.0	61.0	42.2	0.099	rl y< A 10. Showers afternoon.
22	41.0	52.6	45.5	46.4	53.0	46.2	52.2	45.3	49.3	61.2	38.1	0.011	ln Rz
23	36.2	55.0	44.8	45.3	55.2	45.0	54.3	44.4	50.2	53.0	34.2	0.000	l Rz Some white frost.
24	40.8	64.1	(50.5)	51.8	64.2	(51.4)	63.6	(50.5)	55.8	55.8	38.9	0.000	r Rl
25	46.7	68.0	54.0	56.2	68.0	54.6	67.2	53.9	59.0	63.8	44.8	0.000	rw Sz.
26	55.8	51.5	44.5	50.6	51.9	46.5	51.0	45.0	59.7	67.4	51.6	0.000	y Rw nd< Forenoon rainy. y> A1.
27	45.4	66.4	58.7	56.8	66.6	59.3	65.6	58.0	58.0	59.9	42.2	0.331	r Rw y< A8 y> A10.
28	55.3	63.3	48.5	55.7	63.3	49.8	62.6	48.7	58.2	66.6	54.6	0.000	y y> E
29	44.6	55.2	(55.4)	51.7	55.5	(56.2)	54.9	(55.1)	52.1	63.1	42.0	0.055	yl A little rain at times.
30	(55.0)	70.8	(61.8)	62.5	70.9	(62.4)	69.7	(61.3)	61.0	61.6	50.8	0.055	yw
Sums	1416.0	1984.3	1501.6	1554.8						2057.1	1514.1	3.461	
Means	52.4	66.1	55.6	57.6						68.37	50.47		

Rainfall for month 3.461 inches.
Mean temperature " " {(mean of 3 means for 7, 2, 9,) 58.0 Fahrenheit}
Maximum " " " (Sept. 5) 84.4 "
Minimum " " " (Sept. 23) 34.2 "
" (reduced to standard of No. 4) 34.9 "

The velocity of the wind is merely estimated in miles per hour. See general remarks on observations of 1873.

Observations in parentheses ( ) were not made at the regular times. The actual times are given below.

Date	Regular times	Actual times
6	7 A.M.	7½ A.M.
8	9 P.M.	8 P.M.
12	7 A.M.	7½ A.M.
21	7 A.M.	8 A.M.
24	4 P.M., 9 P.M.	3 P.M., 10 P.M.
29	9 P.M.	8 P.M.
30	7 A.M., 9 P.M.	7½ A.M., 8 P.M.

The relative humidity for September has been computed after applying the corrections for error of psychrometer given in the record for September, 1873.

* Sept. 17, 10 A.M., 2 P.M., 4 P.M. Low readings of some thermometers doubtless due to dampness.

† Sept. 11, 10 A.M. The amount of rainfall by gauge C entered under this date was observed at 4 P.M., Sept. 10.

Auroras noticed.

None this month.

Observers: at 7 A.M. & 9 P.M., Bridget Henry Sept. 1 & 2.
Walter Horie rest of month except Sept. 6, 7½ A.M.; Sept. 10, 9 P.M.; Sept. 24, 7 A.M.; Sept. 29, 7 A.M.
Other observations by A. Searle.

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October 1875. Meteorological Record of

10 A.M.

Date	Barometer	Attached Thermometer	Casella 32.35	Casella 12.530	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's Tables	Wind	Clouds
1	29.620	60.3	57.1	56.2	57.0	56.3	58.2	50.7	62	5 N	10 Pm
2	30.040	54.8	49.1	48.2	48.7	48.1	50.0	41.3	47	14 NW	0 Fm
3	30.440	52.1	52.5	51.0	51.6	51.4	53.9	47.2	64	4 S	0 Rs
4	30.150	58.0	62.0	61.6	62.4	61.4	63.2	56.3	67	12 SW	10 Pm M Fm haze
5	30.002	61.5	65.9	65.0	66.0	65.1	67.0	60.6	73	3 SW	9 Pm M Fm
6	30.355	55.8	46.0	45.1	45.6	45.0	46.8	43.4	83	9 NE	10 Pm
7	29.894	59.8	63.8	62.9	63.5	63.0	64.9	63.2	97	5 SE	10 Pm; raining
8	29.960	56.3	50.9	50.0	50.3	49.9	51.8	44.5	59	2 NW	0
9	30.199	54.2	50.7	50.0	50.2	49.8	51.4	43.8	56	5 NW	6 M Fm R
10	29.950	53.8	55.9	54.8	55.8	55.0	57.0	51.4	73	1 NE	9 Pm M Fm
11	29.884	55.6	49.0	48.4	48.7	48.0	49.9	45.4	76	6 NW	10 Pm
12	30.112	51.1	42.8	41.8	42.5	41.8	43.6	38.0	64	8 NW	10 Pm
13	(30.432)	(45.5)	(36.4)	(35.5)	(35.5)	(35.2)	(38.2)	(31.5)	(51)	(3 NW)	(3 Rs)
14	(30.357)	(44.7)	(34.3)	(33.5)	(33.5)	(34.3)	(36.4)	(33.5)	(85)	(0)	(6 R)
15	(29.867)	(51.8)	(50.2)	(49.5)	(49.7)	(49.5)	(51.3)	(48.8)	(91)	(10 E)	(10 Pm)
16	(29.689)	(56.0)	(52.3)	(51.5)	(51.8)	(51.5)	(54.1)	(51.2)	(89)	(1 S)	(9 Pm Fm)
17	29.718	53.0	46.2	45.5	45.8	46.2	49.5	42.3	57	25 NW	3 Fm Rm
18	29.974	51.2	58.5	56.4	57.2	56.2	58.4	50.5	60	12 NW	5 Fm R
19	30.107	53.5	50.5	49.7	50.1	49.0	52.5	49.8	90	10 NE	10 Pm
20	30.027	50.3	46.2	45.0	45.5	45.0	47.4	40.5	57	15 N	7 R
21	29.247	55.3	56.8	56.1	56.7	56.2	58.2	47.8	46	10 NW	9 R Rm
22	(29.988)	(56.8)	(57.2)	(56.0)	(56.3)	(56.2)	(58.8)	(51.5)	(64)	(2 W)	(0 haze)
23	29.944	55.6	47.1	46.4	46.9	46.1	†48.9	†47.2	89	1 NW	10 fog
24	29.794	49.8	49.2	48.3	48.7	48.2	50.2	47.8	91	1 E	10 fog
25	29.751	54.9	58.1	56.4	57.9	57.3	59.1	53.3	73	3 NW	2 R
26	30.112	52.9	46.8	45.9	46.4	47.0	48.2	40.1	50	6 E	7 M Fm R
27	29.603	56.9	52.4	51.7	52.0	52.8	53.6	45.1	52	25 W	2 Fm
28	30.001	54.2	47.5	46.4	46.8	47.2	48.5	40.6	51	25 W	7 M Fm R
29	30.022	49.8	45.0	43.7	44.8	44.7	45.5	41.1	75	3 NE	10 Pm
30	29.997	49.9	47.9	46.2	46.8	46.8	48.5	44.2	77	12 E	10 Pm
31	29.886	52.5	45.6	44.9	45.2	45.7	46.9	40.3	59	20 W	9 M

4 P.M.

Date	Barometer	Attached Thermometer	Casella 32.35	Casella 12.530	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's Tables	Wind	Clouds
1	29.577	60.2	52.7	51.9	52.5		53.5	49.6	82	7 NW	10 Pm
2	30.158	61.4	55.0	54.5	54.8		55.8	44.2	37	15 W	1 M Fm
3	30.366	60.7	60.2	59.8	60.1		61.1	50.6	48	5 S	0 R Rs Fm
4	30.022	63.3	67.0	66.3	67.1		68.0	59.4	62	7 SW	8 R Rs M Fm haze
5	30.018	69.0	70.6	70.0	70.9		71.5	61.8	58	4 W	5 Pm M Fm Rs
6	30.302	57.0	48.4	47.6	47.9		49.0	46.7	92	11 E	10 Pm; a little rain
7	29.870	62.8	59.8	59.3	60.5		61.2	58.7	92	4 NW	10 Pm Fm Rs
8	(29.933)	(62.5)	(58.3)	(57.7)	(57.8)		(59.0)	(49.5)	(51)	(1 SW)	(0 Pm Fm)
9	30.187	59.4	52.1	51.7	51.7		52.8	45.1	56	5 E	5 R Rs R Fm
10	29.841	60.0	55.5	54.8	55.1		56.0	51.1	77	4 SE	6 Pm M Fm
11	29.944	56.8	48.0	47.6	47.9		49.0	45.1	80	1 SW	10 Pm; a little rain
12	30.144	52.6	44.9	43.9	44.4		43.5	41.5	94	9 NW	8 Fm Rm
13	(30.356)	(55.8)	(47.4)	(45.9)	(46.2)		(46.5)	(38.5)	(48)	(2 N)	(1)
14	30.257	51.8	51.2	50.0	50.5		53.0	37.5	25	8 SW	7 R Rm
15	29.638	55.5	51.5	50.5	51.3		52.0	50.0	95	12 SE	10 Pm
16	29.485	56.8	57.3	56.5	56.5		57.5	55.5	95	12 SE	10 Pm
17	29.893	57.3	47.0	46.5	46.8		48.5	40.0	47	15 NW	1 Rs
18	29.928	58.6	59.4	58.7	59.0		59.2	51.6	63	15 S	1 Fm Rs
19											
20	29.879	58.2	59.4	58.7	58.8		59.0	47.5	40	4 NW	1 Rs
21	(29.787)	(62.7)	(62.4)	(61.0)	(61.6)		(62.0)	(51.5)	(48)	(2 W)	(3 M Rm Rs)
22	29.960	63.5	63.8	63.7	64.3		65.5	53.8	46	6 NW	0
23	29.866	60.6	59.5	59.2	58.7		60.7	54.1	68	2 NW	8 R Rs Rm
24	29.738	55.0	50.4	49.7	50.2		51.2	49.1	94	1 SE	10 fog
25	29.738	61.2	67.3	66.7	66.9		68.2	57.1	51	5 W	5 haze Pm Fm M
26	30.019	59.7	47.5	45.8	46.0		47.3	41.6	66	8 E	10 Fm M
27	29.668	58.2	47.8	46.8	47.3		49.7	43.5	64	20 W	10 Pm
28	30.012	53.2	49.4	48.5	48.7		49.9	40.9	51	10 NW	3 R Pr
29	30.041	53.0	45.0	44.1	44.6		45.7	40.5	69	6 E	10 Pm Fm
30	29.799	52.4	48.4	47.6	47.9		49.3	45.0	78	12 E	10 Pm
31	29.478	51.8	43.5	42.6	43.2		43.0	35.7	50	20 NW	7 M Fm

Sums of columns, number of observations, means and reduction of barometer to the freezing point.

	10 A.M.	4 P.M.
Barometer	929.122	89.8004
	31	30
	29.972	29.933
	− .068	− .080
	29.904	29.853
Attached Thermometer	1667.9	1752.0
	31	30
	53.8	58.4
Casella 32.35	1573.9	1630.7
	31	30
	50.8	54.36
Casella 12.530	1543.6	1607.6
	31	30
	49.8	53.6
No. 4	1559.9	1619.2
	31	30
	50.3	54.0
Minimum after setting	1549.9	
	31	
	50.0	
Dry bulb	1611.9	1684.6
	31	30
	52.0	54.9
Relative humidity	2128	1927
	31	30
	69.	64.
Wind	258	233
	31	30
	8.3	7.8
Clouds	213	180
	31	30
	6.9	6.0

Rain gauge A, on roof of shed, north of Clock Room.

Date	Time	Ounces	Inches
2	11½ A.M.	41½	0.358
7	10¼ A.M.	213 3/4	1.842
8	10¼ A.M.	14 3/4	0.127
11	10 A.M.	13 1/2	0.113
12	10 A.M.	0 1/4	0.001
15	4 P.M.	6 3/4	0.058
16		5 1/8	0.044
17	10 A.M.	4	0.034
24	10 A.M.	2 1/2	0.018
25	10 A.M.	0 3/4	0.006
27	10 A.M.	31 1/4	0.267
29	10 A.M.	1	0.009
31	10 A.M.	115 3/4	0.998
Total		449 7/8	3.875

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Harvard College Observatory. October 1875.

Date	External Thermometer No. 4				Cassella 3235		Cassella 12530		Maximum after setting	Extreme temperatures		Rainfall in inches	Remarks
	7 A.M.	2 P.M.	9 P.M.	Mean	2 P.M.	9 P.M.	2 P.M.	9 P.M.		Maximum set at 10 A.M.	Minimum set at 10 A.M.	Gauge C examined at 10 A.M.	
1	52.2	51.4	48.8	50.8	51.0	49.3	51.2	48.5	57.0	70.2	51.3	0.000	yl A little rain at times. Evening raining.
2	40.0	54.2	46.2	46.8	54.8	47.2	53.9	46.3	49.3	57.3	38.8	0.386	rl {Rather cloudy at 8 P.M.; clear again at 9 P.M.}
3	37.7	60.5	50.7	49.6	60.7	51.6	60.0	50.9	52.3	55.0	37.0	0.000	r Rw {A little white frost seen by W. Horie.}
4	51.4	69.2	59.2	59.9	69.0	59.8	68.3	58.8	61.3	61.6	49.0	0.000	yzw Sun often seen among clouds.
5	57.6	73.3	50.4	60.4	73.0	51.3	72.2	50.2	65.2	68.7	54.5	0.000	yw Sun often seen.
6	45.2	47.5	50.8	47.8	48.0	51.7	47.1	50.5	46.6	72.9	44.3	0.000	yl Some rain
7	(59.0)	61.7	52.0	57.6	61.0	52.3	60.8	52.0	62.6	63.4	45.0	1.743	y Rw Heavy showers early; less rain later. y > 11.
8	41.3	57.8	49.7	49.6	58.3	50.2	57.3	49.7	51.0	64.8	40.3	0.143	r Rw
9	40.4	52.3	43.3	45.3	52.7	44.0	51.8	43.2	51.0	58.3	39.0	0.000	rl Ry A 10. Rr A 2. r → 11.
10	(48.5)	57.0	(48.7)	51.4	57.4	(49.7)	56.8	(48.5)	55.5	55.3	42.0	0.000	Ryw
11	52.4	47.9	46.0	48.8	48.1	46.5	47.6	46.2	49.0	59.0	46.0	0.110	yl Some rain at times.
12	40.0	46.7	36.4	41.0	47.2	37.5	46.5	36.7	43.0	49.2	39.6	0.011	
13	28.8	47.8	37.9	38.2	48.2	39.2	47.3	38.3	(34.5)*	(48.2)	(28.2)	(0.000)	A white frost.
14	29.4	51.8	42.8	41.3	52.5	43.3	51.3	42.1	(33.5)	(52.8)	(29.4)	(0.000)	A heavy white frost.
15	49.5	(51.5)	48.9	50.0	(52.8)	50.2	(51.2)	48.9	(51.8)	(59.2)	*(34.3)	(0.066)	Drizzling rain all day.
16	50.0	54.8	56.8	53.9	55.2	57.2	54.5	56.5	(51.8)	*(53.7)	(48.2)	(0.033)	
17	41.5	(47.3)	38.7	42.5	(48.2)	40.3	(47.5)	39.0	47.2	58.2	40.3	0.044	
18	40.6	(61.3)	48.9	50.3	(61.4)	50.2	(60.5)	48.9	51.5	51.5	37.8	0.000	
19	45.2	52.5	44.6	47.4	53.2	45.2	51.8	44.2	50.2	*(62.5)	43.7	0.000	
20	37.9	59.4	49.0	48.8	59.8	50.2	59.0	49.5	46.2	58.8	37.6		
21	49.5	63.9	53.3	55.6	64.4	53.5	63.4	52.5	56.3	*(59.8)	*(44.9)		
22	40.7	64.2	48.6	51.2	64.7	49.2	63.6	48.4	56.4	*(64.5)	38.7		
23	39.2	57.9	48.8	48.6	58.1	49.9	57.2	48.6	47.2	64.9	38.2	0.000	fzyw f > A 10.
24	47.2	51.1	48.9	49.1	51.3	49.4	50.7	49.0	50.0	59.2	45.7	0.000	yf Re
25	43.3	67.4	57.8	56.2	67.8	58.2	66.6	56.1	57.2	57.2	42.2	0.000	zw
26	43.5	46.8	49.0	46.4	47.6	50.3	46.7	48.7	50.5	63.1	42.6		yc {Brisk southerly gale and shower in following night; soon over; some thunder.}
27	47.9	54.4	43.8	48.7	55.0	43.8	54.0	43.0	53.3	64.6	45.0	0.331	zRw y < A 10 yl N.
28	38.9	49.4	43.7	44.0	49.8	44.8	49.0	43.8	48.5	55.1	37.7	0.000	Ryl
29	39.0	46.2	42.6	42.6	46.5	43.3	45.8	42.2	45.0	49.8	38.0	0.011	yl
30	(44.8)	47.5	49.9	47.4	48.9	50.3	46.8	49.8	48.6	48.6	41.7	0.000	yl Rain in the evening and night following
31	(41.9)	43.9	36.0	40.6	44.4	37.3	43.6	36.4	46.2	50.2	40.5	0.949	Ryl
Sums	1364.5	1698.6	1472.2	1511.8						1817.6	1381.5	3.827	Rainfall for month 3.83 inches.
Means	44.0	54.8	47.5	48.7						58.63	44.57		Mean temperature " " 48.8 Fahrenheit

Maximum " " " 72.9 " ; (Oct. 6).
Minimum " " " 28.2 " ; (Oct. 13).
" (reduced to standard of 64) 28.5 "

The velocity of the wind is merely estimated in miles per hour. See general remarks on observations of 1873.

Observations in parentheses ( ) were not made at the regular times. The actual times are given below.

Date	Regular times	Actual times.
7	7 A.M.	7½ A.M.
8	4 P.M.	4¾ P.M.
10	7 A.M., 9 P.M.	8 A.M. 8 P.M.
13	10 A.M., 4 P.M.	8½ A.M., 5 P.M.
14	10 A.M.	8½ A.M.
15	10 A.M., 2 P.M.	8½ A.M., 2½ P.M.
16	10 A.M.	8½ A.M.
17	2 P.M.	3 P.M.
18	2 P.M.	2½ P.M.
21	4 P.M.	5 P.M.
22	10 A.M.	11 A.M.
30	7 A.M.	7½ A.M.
31	7 A.M.	7½ A.M.

See also the annexed note relating to the maxima and minima.

† Oct. 23, 10 A.M. The original psychrometer readings are 58.9 and 57.2; no doubt by error for 48.9 and 47.2

The relative humidity for October has been computed after applying the corrections for error of psychrometer given in the record for September, 1873.

* From October 12 to 22 inclusive, (except October 19), the maximum and minimum thermometers were read and set both at 10 A.M. and 4 P.M.; (5 P.M. on October 13 and 21). The maxima entered in the record above under date of October 13, 16, 19, 21, 22, and the minima entered under date October 15 and 21, were observed on the afternoons respectively preceding.

Auroras noticed.

None this month.

Observers: at 7 A.M. and 9 P.M., Walter Horie; except Oct. 8, 9 P.M.:
at 10 A.M., Oct. 1 to 12 inclusive; 2 P.M., Oct. 1 to 11 inclusive; 4 P.M.,
Oct. 1 to 11 inclusive; also Oct. 29 and 30; 9 P.M., Oct. 8, A. Searle; other observations by W. Horie.

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November, 1875. Meteorological Record of

10 A.M.

Date	Barometer	Attached Thermometer	Casella 3235	Casella 12530	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's Tables	Wind	Clouds
1	29.700	40.0	35.5	34.7	34.7	34.3	36.5	30.2	55	15 NW	3 Fm
2	29.741	40.3	33.7	33.2	32.9	33.0	34.3	27.5	48	20 NW	5 Fm
3	29.888	45.6	35.3	34.3	34.3	34.2	35.9	31.4	71	10 N	0
4	29.700	39.5	33.4	32.7	32.8	32.2	34.0	29.8	73	12 N	10 Pm
5	29.891	39.4	35.4	34.3	34.5	32.2	35.9	30.7	65	4 NW	8 Rs
6	30.076	39.8	41.2	39.9	*40.3	40.1	41.7	34.9	52	10 NW	4 M R
7	30.118	39.8	40.5	39.7	39.6	40.0	41.5	34.8	53	1 W	1 M Fm
8	30.134	42.7	40.2	39.7	39.7	39.1	41.0	36.2	69	10 N	7 Fm
9	30.339	38.2	36.2	35.0	35.0	35.0	36.5	‡31.2	52	10 N	7 R
10	30.100	41.3	40.6	38.7	40.2	40.7	43.5	38.7	70	8 SE	10 M Pm
11	29.507	46.7	44.1	43.1	43.5	43.2	44.5	37.5	53	25 NW	1 Fm
12	29.958	40.5	40.9	39.8	39.8	40.3	42.0	37.2	69	5 W	1 Fm
13	29.860	46.4	47.1	45.7	46.2	46.8	48.0	42.5	68	4 W	10 R haze
14	(29.862)	(47.7)	(44.8)	(43.7)	(44.1)	(43.9)	*(45.2)	§(40.1)	(69)	(12 NE)	(10 M Pm)
15	29.701	39.8	30.8	30.2	30.3	30.0	31.3	31.2	100	3 NE	10 R; snowing
16	29.702	44.5	39.3	38.4	38.7	38.5	40.0	38.0	94	2 SW	10 Pm
17	29.612	37.7	30.2	29.9	29.6	29.5	31.0	24.0	40	25 NW	3 Fm
18	30.103	28.6	25.0	24.4	24.3	24.2	25.6	19.7	43	6 NW	5 R
19	29.699	39.1	42.1	41.4	41.7	41.2	43.0	38.1	69	10 W	10 M Pm
20	29.972	41.7	42.2	41.5	41.7	41.2	42.8	37.4	65	5 NW	10 R haze
21											
22	30.551	32.7	22.2	21.6	21.4	21.5	22.6	18.8	67	10 NW	0
23	30.504	28.3	29.0	28.9	29.0	31.5	32.0	31.4	100	6 SE	10 Pm haze
24	29.925	39.2	41.2	39.8	42.3	42.0	44.0	37.0	53	15 NW	5 R
25	30.050	38.8	26.1	25.2	25.5	25.2	26.7	21.4	53	12 NW	0 R
26	30.268	34.7	38.3	37.3	37.8	37.1	39.2	36.2	86	6 SE	††10 Pm
27	30.036	43.9	43.8	42.9	43.2	42.6	44.4	37.6	55	15 N	7 Pm M Fm
28	30.425	36.0	31.2	30.0	30.7	30.7	32.3	27.0	60	5 E	7 Rs Fm
29	29.626	41.0	41.1	40.2	40.5	40.1	41.8	35.3	54	14 W	8 Pm M Fm
30	30.133	§§10.0?	0.8	0.4	0.0	0.0	below graduation			17 NW	1 R Rs

41 P.M.

Date	Barometer	Attached Thermometer	Casella 3235	Casella 12530	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's Tables	Wind	Clouds
1	29.736	43.9	38.0	37.5	36.9		37.6	30.2	47	15 NW	8 M Fm
2	29.756	42.2	32.8	32.3	32.0		32.5	26.0	48	30 NW	2 M Fm
3	29.848	45.2	42.2	41.5	41.7		42.5	37.8	71	7 N	0
4	29.688	42.0	36.3	35.6	36.0		37.0	33.4	79	5 N	10 Pm
5	29.900	46.9	41.9	41.5	41.3		42.5	34.7	45	1 W	7 R M
6	30.094	46.7	42.8	42.0	42.3		43.2	34.0	35	6 NW	0
7	30.058	47.9	47.5	46.8	46.5		48.0	39.9	49	1 W	7 R, haze M
8	(30.164)	(42.7)	(40.2)	(39.5)	(39.0)		(39.2)	‡(33.7)	(54)	(1 SE)	(1 haze)
9	30.301	47.7	40.7	39.9	39.8		41.2	34.8	53	7 E	3 R haze
10	29.839	43.4	42.7	41.3	42.2		42.6	41.5	100	8 E	10 Pm; raining
11	29.691	49.3	42.4	41.9	42.0		43.3	36.5	54	25 NW	1 Fm
12	29.923	50.0	51.0	50.4	50.8		51.7	42.9	49	2 W	0 Rs
13	29.841	58.3	56.0	55.4	55.4		56.2	47.5	63	3 W	10 Pm R haze
14	29.749	48.0	38.0	37.5	37.8		38.7	36.0	88	10 NE	10 Pm; raining
15	29.722	42.4	32.8	32.0	32.0		32.8	31.2	99	5 NE	10 R
16	29.421	45.3	44.6	43.8	43.8		44.8	42.6	92	5 SW	10 Pm; raining
17	29.763	35.8	29.1	28.7	28.3		29.5	22.9	43	30 NW	2 Fm
18	30.082	35.2	34.9	34.0	34.2		35.3	32.5	85	3 NW	9 Fm
19	29.638	49.2	47.2	46.2	46.5		47.6	41.4	62	1 W	10 Pm
20	(30.047)	(42.9)	(40.2)	(39.8)	(39.5)		(40.3)	(37.5)	(85)	(3 NW)	(8 Fm R)
21	30.050	41.5	40.3	39.4	39.5		40.0	37.5	88	0	10 Pm; raining
22	30.599	35.9	27.4	26.9	26.6		26.5	21.2	52	3 NW	0
23	30.121	33.7	34.5	33.8	33.5		35.0	33.5	100	5 E	10 Pm; raining
24	30.050	43.2	39.3	38.8	39.0		40.3	31.5	36	15 NW	3 M
25			32.2	30.9	30.8		32.0	25.2	44	12 NW	0 R
26	29.981	39.0	50.4	50.1	49.8		49.6	‖44.2	70	**10 NW	10 Pm; raining
27	30.190	45.0	39.0	38.3	38.4		39.7	33.0	52	12 NW	0
28	30.298	44.0	34.5	33.8	33.8		35.1	30.1	66	5 SE	10 Pm
29	29.838	44.3	25.1	24.6	24.6		25.9	19.6	38	30 W	0 Rs Fm
30	30.116	21.0	4.4	4.1	3.7		5.2	{cannot be read}		11 NW	2 Rs Fm

Sums of columns, number of observations, means, and reduction of barometer to the freezing point.

	10 A.M.	41 P.M.
Barometer	869.181 29 29.972	868.504 29 29.948
	−.028 29.944	−.040 29.908
Attached thermometer	1123.9 29 38.8	1253.1 29 43.2
Casella 3235	1032.2 29 35.6	1148.4 30 38.3
Casella 12530	1006.6 29 34.7	1128.3 30 37.6
No. 4	1014.3 29 35.0	1127.7 30 37.6
Minimum after setting	1010.3 29 34.8	
Dry bulb	1057.2 28 37.8 Or, adding estimate for Nov. 30, mean 36.5	1155.8 30 38.5
Relative humidity	1806 28 64	1839 29 63
Wind	297 29 10.2	271 30 9.0
Clouds	173 29 6.0	163 30 5.4

Gauge A not used this month.

No fall of snow deep enough for measurement.

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Harvard College Observatory. November, 1875.

Date	External Thermometer No. 4				Casella 3235		Casella 12530		Maximum after setting	Extreme temperatures		Rainfall in inches. Gauge C examined at 10 A.M.	Remarks.
	7 A.M.	2 P.M.	9 P.M.	Mean	2 P.M.	9 P.M.	2 P.M.	9 P.M.		Maximum set at 10 A.M.	Minimum set at 10 A.M.		
1	30.1	37.7	33.8	33.9	37.9	35.0	37.5	34.2	36.5	41.4	29.4	0.000	Ryd A few snowflakes following night.
2	29.7	34.3	29.2	31.1	35.1	30.1	34.2	29.7	35.3	39.2	28.8	0.000	Ry pd {A little snow at 9 A.M. and some more at 11 A.M.}
3	27.7	42.5	(31.5)	33.9	43.2	(32.3)	42.1	(31.7)	36.0	36.7	26.6	0.000	rl
4	31.4	34.5	29.5	31.8	35.0	30.2	34.4	30.0	34.3	42.9	29.3	0.000	yl A little snow near noon.
5	26.2	42.5	33.9	34.2	42.8	33.9	42.1	33.5	35.8	35.8	24.9	0.000	Rrd d> y<
6	27.5	43.3	33.0	34.6	43.8	34.2	43.0	33.4	41.7	47.6	25.2	0.000	rl
7	27.5	49.1	39.2	38.6	49.7	40.2	48.9	39.1	41.6	48.3	26.7	0.000	
8	29.8	41.5	30.7	34.0	42.2	32.0	41.3	31.2	40.2	49.1	29.2	0.000	
9	24.9	42.8	31.5	33.1	42.5	33.2	41.5	33.0	36.9	41.7	24.5	0.000	
10	31.2	42.5	46.2	40.0	42.7	46.6	41.9	45.8	42.2	42.2	30.5	0.000	Afternoon and evening rainy.
11	39.6	43.8	36.1	39.8	44.4	37.2	43.5	36.1	44.2	50.0	38.7	2.041	rlw
12	30.1	52.0	40.5	40.9	52.2	41.7	51.7	40.9	41.3	45.0	29.5	0.000	rw
13	36.0	57.9	47.4	47.1	58.4	48.2	57.5	47.8	47.4	52.1	35.3	0.000	w Ry {Raining at 11½ P.M.}
14	(43.0)	41.2	35.5	39.9	41.9	36.0	41.0	35.5	(44.8)**	(57.7)‡‡	(40.7)	(0.000)	yc Rain towards night. {A very little snow during the night; ground white.}
15	28.0	32.2	31.2	30.5	32.6	32.2	31.9	31.3	31.4	40.0	27.9	0.364	yc A few snowflakes at times.
16	33.0	41.0	37.5	37.2	41.4	37.9	40.8	37.6	38.7	38.7	29.3	0.000	y Afternoon rainy. {A gale began at 10½ P.M.}
17	28.7	29.7	23.6	27.3	30.4	24.6	30.0	23.9	31.4	44.7	28.0	0.541	
18	19.3	34.5	31.5	28.4	35.4	32.4	34.7	31.5	26.3	32.0	19.0	0.000	d>
19	36.6	(47.5)	43.7	42.6	(47.9)	44.8	(47.2)	43.7	42.0	42.0	28.7	0.005	Rwy
20	35.4	41.1	32.1	36.2	41.6	33.0	40.9	32.4	42.2	47.9	34.3	0.000	yc
21	26.4	(42.0)	36.7	35.0	(42.4)	37.3	(42.0)	37.1	(40.6)	(43.2)	(24.7)		y & A8. A little rain in the afternoon.
22	29.9	26.6	(19.8)	25.4	27.3	(20.1)	26.6	(19.8)	24.0	41.6	18.9	0.011	rd
23	14.8	34.8	34.0	27.9	35.5	34.9	35.0	34.1	31.5	31.5	13.3	0.000	yd {A little snow beginning about noon; changed to rain about 2½ P.M.}
24	37.7	41.2	33.6	37.5	42.0	34.3		34.0	41.8	41.8	30.2	1.004	rl
25	21.2	31.3	25.8	26.1	32.0	26.7	31.3	26.3	28.0	41.6	20.3	0.000	rd
26	27.0	(50.1)	(47.0)	41.4	(50.5)	(48.2)	(49.6)	(49.1)	37.7	37.6	21.8	0.000	y w< Afternoon rainy.
27	42.8	42.0	31.9	38.9	42.5	32.2	41.8	31.6	43.0	51.6	37.1	0.574	rw w>
28	20.7	32.7	35.9	29.8	33.4	36.3	32.8	35.5	32.9	43.0	20.0	0.000	c y< A little rain in the evening.
29	38.1	29.9	12.0	26.7	30.2	12.4	29.7	12.1	40.5	43.0	30.8	0.320	yl rnd<
30	−2.1	5.1	0.9	1.3	6.0	1.3	5.3	1.2	4.4	41.4	−2.9	0.000	r d n
Sums	872.2	1167.3	975.2	1005.1						1294.3	808.7	4.860	
Means	29.1	38.9	32.5	33.5						43.04	26.69		

The velocity of the wind is merely estimated in miles per hour. See general remarks on observations of 1873.

Observations in parentheses ( ) were not made at the regular times. The actual times are given below.

Date	Regular times	Actual times.
3	9 P.M.	9½ P.M.
8	4 P.M.	4½ P.M.
14	7 A.M., 10 A.M.	9 A.M., 11 A.M.
19	2 P.M.	2¼ P.M.
20	4 P.M.	4¼ P.M.
21	2 P.M.	2½ P.M.
22	9 P.M.	9⅓ P.M.
26	2 P.M., 9 P.M.	3¼ P.M., 8 P.M.

The relative humidity for November has been computed after applying the corrections for error of psychrometer given in the record for September, 1873.

* Nov. 6, 10 A.M. Original reading of Casella 12530 36.3; presumed to mean 40.3

† Nov. 8, 4½ P.M. Original reading of wet bulb 23.7; presumed to mean 33.7.

‡ Nov. 9, 10 A.M. Original reading of wet bulb 21.2; presumed to be 31.2.

§ Nov. 14, 11 A.M. Original reading of dry bulb 40.1 and of wet bulb 46.2d; the first presumed to be that of the wet bulb and the last that of the dry bulb.

‖ Nov. 26, 4 P.M. Original reading of wet bulb 34.2; presumed to mean 44.2.

** Nov. 26, 4 P.M. Perhaps the direction of the vane was mistaken, as the wind was from the south later as well as earlier.

†† Nov. 26, 10 A.M. Observation of clouds not set down at the time; reported to W. Hoxie at 4 P.M., and set down by him.

‡‡ Nov. 14. Original reading of maximum 52.7; presumed to mean 57.7; see observation of 2 P.M., Nov. 13.

§§ Nov. 30, 10 A.M. The mercury in the attached thermometer was too low to be seen, and the reading entered is an estimate.

Rainfall for month 4.86 inches.

Mean temperature " " 33.5 Fahrenheit.
Maximum " " " ‡‡57.7 " ; (Nov. 14)
Minimum " " " −2.9 " ; (Nov. 30)
" (reduced to standard of No. 4) −2.7 "

Auroras noticed.

Nov. 21, 11 P.M. Low auroral arch, not reaching to ζ Urs. Maj.
Nov. 22, 10½ P.M. Some appearance of aurora.

Zodiacal light.

Nov. 22, 6 to 6½ P.M. Some zodiacal light noticed south of the Milky Way, reaching a little beyond α Capricorni.

Meteors.

The nights of Nov. 13–14 and 14–15 were cloudy.

Nov. 24, 10 P.M. 7 meteors noticed within about a quarter of an hour; all but one seemed to radiate from some point near α Geminorum; but their directions differed too little to determine the radiant point well.

Observers: at 4 P.M. Nov. 6, 2 P.M. Nov. 6, 4 P.M. Nov. 12, 2 P.M. Nov. 14, 10 A.M. & 2 P.M. Nov. 26, 10 A.M., 2 P.M., 4 P.M. Nov. 27, 28, 29, 30, A. Searle; (also, as usual, observations of aurora, etc.): at 9 P.M. Nov. 27, 7 A.M. & 9 P.M. Nov. 28, 29, 30, A. B. Gibbs; other observations by W. Hoxie.

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December 1875. Meteorological Record of

Date	Barometer	Attached Thermometer	Casella 3235	Casella 12530	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's Tables	Wind	Clouds
1	30.070	*15.0(?)	5.9	5.6	5.3	5.0	6.8	cannot be read		15 NW	1 Rs
2	30.299	*15.0(?)	12.9	12.5	12.4	12.0	13.8	9.0	37	15 NW	0
3	30.424	21.4	18.0	17.4	17.3	17.0	19.0	14.9	58	0 SW	0 Rs
4	30.109	30.0	32.9	32.0	32.3	32.0	33.6	26.2	41	0 calm	9 R Rs
5	29.983	31.0	29.5	28.6	29.0	28.3	30.2	27.2	83	4 NW	10 Pm
6	29.735	33.7	30.2	29.8	29.9	29.3	31.0	26.2	64	6 NW	9 R
7	29.699	30.4	29.0	28.4	28.9	28.0	29.9	25.7	69	1 NW	10 R
8	29.476	35.8	32.4	31.9	32.0	31.5	33.0	28.4	67	7 N	10 R
9	29.668	34.9	32.8	32.1	32.8	31.8	33.6	31.9	98	0 calm	10 R
10	29.759	36.3	31.0	30.2	30.6	30.0	31.8	27.3	68	7 W	10 Pm
11	29.894	30.8	26.9	26.2	26.5	25.9	27.8	24.2	74	1 W	9 R Rs; thin
12	29.632	34.0	32.1	31.6	31.9	31.2	33.0	30.5	89	0 W	10 R; snowing
13	29.180	34.4	33.7	32.7	33.0	32.8	34.6	30.4	73	6 SW	10 Pm R Fm
14	29.378	33.1	26.7	26.0	26.1	25.6	27.3	21.0	41	18 W	1 Fm
15	29.690	26.0	19.0	18.0	18.2	17.9	19.8	15.6	58	6 W	0 R Rs
16	29.750	32.0	36.2	35.5	35.8	35.2	37.0	31.8	65	7 W	10 R
17	29.548	34.8	32.4	31.7	32.3	31.5	33.3	31.9	100	4 W	10 R
18	(29.615)	(25.9)	(11.8)	(11.2)	(11.1)	(10.7)	(12.7)	(9.5)	(66)	(6 W)	(0)
19	29.962	21.3	10.8	10.5	10.2	9.9	11.8	8.1	54	20 W	4 Fm M Rs
20	30.624	*10.0(?)	−0.9	−0.9	−1.3	−1.8	below graduation			1 W	10 R
21	30.186	29.0	39.2	38.2	38.8	38.2	40.0	34.1	50	4 SW	7 R Fm Rs
22	29.850	38.8	47.0	46.0	46.4	46.0	47.8	43.0	73	5 W	9 R Rs; thin
23	29.561	41.2	49.3	48.0	48.5	48.4	50.2	44.6	68	7 SW	0 Rs
24	30.339	39.6	31.2	30.2	30.7	30.3	32.0	25.6	48	4 NE	0 Rs
25	29.772	37.1	29.0	28.9	29.0	28.0	29.8	28.0	97	5 NW	10 R; a little fine rain
26	30.299	35.8	33.6	33.0	33.4	32.7	34.2	29.8	71	1 W	9 R Pm Rs
27	29.945	42.7	43.1	42.4	42.7	42.0	43.9	40.1	79	3 W	10 Pm Fm
28	30.496	31.9	24.6	24.0	24.3	23.7	25.2	21.8	74	6 NW	10 R
29	30.341	33.5	29.0	28.6	28.8	28.1	29.9	27.6	91	2 NW	8 R Rs
30	30.270	36.8	38.0	37.1	37.7	37.0	38.8	36.8	95	0 SE	10 Pm; some fog
31	30.170	38.7	37.9	36.9	37.3	36.9	39.1	37.0	94	2 SW	2 Rs Pm
1	30.048	22.0	13.0	12.8	12.5		13.8	9.4	44	12 NW	0 Rs
2	30.345	21.4	17.7	17.1	17.1		18.3	13.0	38	8 NW	1 Rs
3	30.304	32.0	30.9	30.4	30.2		31.0	23.9	40	1 SE	1 R Rs
4											
5											
6	29.711	40.8	35.1	34.6	34.5		35.9	31.6	73	2 W	6 Pm Fm
7	29.598	34.1	36.0	35.3	35.7		36.4	31.4	66	1 SE	10 R
8	29.518	36.6	33.2	32.7	32.7		33.9	28.9	65	2 E	10 Pm
9	29.626	37.0	34.9	34.5	34.5		35.4	34.2	100	0 N	10 R; a little snow
10	29.790	35.8	34.9	34.1	34.3		35.6	29.4	55	10 NW	4 R Rs Fm
11	29.778	36.2	32.0	31.7	31.9		32.8	28.2	67	5 SW	10 Pm
12	29.527	40.0	37.8	36.9	37.1		38.3	34.0	73	1 W	0 Fm
13	29.140	41.6	39.2	38.6	38.8		39.9	32.8	49	6 W	8 Pm M Fm Rs
14	29.458	35.1	22.9	22.4	22.2		23.6	17.9	43	16 W	3 R Rs Fm
15	29.689	35.7	25.3	24.9	24.9		26.0	19.6	38	6 W	2 R Rs Fm
16	29.764	34.4	36.7	35.9	36.2		37.1	31.8	64	2 W	9 R
17	29.500	38.0	32.9	32.5	32.4		33.4	25.8	39	13 W	0 Rs
18	29.694	31.0	11.9	11.8	11.4		13.0	9.2	54	9 W	0 Fm
19	30.156	25.7	2.0	2.0	1.4		below graduation			10 W	0 Fm
20	30.472	21.3	14.8	14.4	14.0		15.0	11.0	54	2 SW	10 R
21	30.023	39.2	50.0	49.3	49.7		50.8	41.3	43	6 SW	8 Rs; thin
22	29.816	45.0	50.0	49.0	49.3		50.6	42.8	54	5 W	0
23	29.633	51.1	54.4	53.8	54.2		55.1	47.0	56	8 W	1 Pm Fm
24	30.309	39.8	29.8	28.8	29.0		30.1	25.9	68	5 E	10 Pm
25	29.740	37.2	31.9	31.1	31.4		32.9	30.6	92	3 NW	10 R; a little fine rain
26	30.089	38.3	37.1	36.5	36.6		37.8	33.9	76	3 E	10 Pm Fm
27	30.217	46.0	37.1	36.6	36.7		37.8	30.2	46	8 NW	0 Rs
28	30.310	34.0	32.0	31.4	31.6		32.8	28.8	74	2 E	10 R
29	30.341	36.0	34.5	33.8	34.0		35.2	32.0	82	2 NE	10 R Pm Fm; snowing
30	30.166	38.3	39.8	39.0	39.4		40.1	38.4	98	0 S	10 Pm; mist
31	30.069	47.8	53.0	52.2	52.5		53.9	49.6	80	1 W	5 Rs

10 A.M.

4 P.M.

Sums of columns, number of observations, means, and reduction of barometer to the freezing point.

	10 A.M.	4 P.M.
Barometer	927.724 31 29.927	866.831 29 29.891
	−.008 29.919	−.021 29.870
Attached Thermometer	970.9 31 31.3	1051.4 29 36.3
Casella 3235	885.2 31 28.6	940.8 29 32.4
Casella 12530	864.3 31 27.9	924.1 29 31.9
No. 4	871.9 31 28.1	926.2 29 31.9
Minimum after setting	855.1 31 27.6	
Dry bulb	910.9 30 30.4 Or, adding estimate for Dec. 20, mean 39.4	956.5 28 34.2 Or, adding estimate for Dec. 19, mean 33.1
Relative humidity	2046 29 66	1731 28 62
Wind	168 31 5.3	149 29 5.1
Clouds	208 31 6.7	158 29 5.4

Gauge A not used this month.

Snow measure.

Dec. 25, 10¼ A.M. Snow 1¼ inches deep. 10½ inches in cylinder 1⅞ inches across weigh 6⅝ ounces. Hence rainfall 0.495 inches; mean of this measure and that given by gauge C adopted.

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Harvard College Observatory. December 1875.

Date	External Thermometer No. 4				Casella 32.35		Casella 12.530		Maximum after setting	Extreme temperatures		Rainfall in inches	Remarks
	7 A.M.	2 P.M.	9 P.M.	Mean	2 P.M.	9 P.M.	2 P.M.	9 P.M.		Maximum set at 10 A.M.	Minimum set at 10 A.M.	Gauge C examined at 10 A.M.	
1	−0.5	13.6	8.1	7.1	14.0	9.0	13.7	9.1	7.0	6.6	−2.0	0.000	rdn
2	5.1	17.4	11.5	11.3	17.9	11.7	17.3	11.5	14.0	14.0	5.0	0.000	rd Ru
3	8.2	30.3	27.4	22.0	31.1	27.9	30.2	27.5	18.2	18.0	7.6	0.000	rl
4	26.8	(37.1)	32.1	32.0	(37.7)	32.4	(37.0)	31.9	32.0	32.0	17.0	0.000	
5	29.6		29.2			29.5		29.1	29.2	38.6	23.5	0.000	Rye
6	24.9	35.2	26.6	28.9	35.8	27.3	35.0	26.8	30.0	35.4	24.0	0.000	Rl
7	27.8	36.7	33.9	32.8	36.9	34.1	36.1	33.5	29.0	35.3	20.6	0.000	y Sc {A few snow flakes about 1¾ P.M.}
8	35.1	34.1	30.9	33.4	34.5	30.6	33.8	30.2	32.2	36.2	28.0	0.000	y Rc A little snow in the evening.
9	29.9	36.3	33.8	33.3	36.4	34.0	35.8	33.2	32.9	34.0	28.9	0.066	yc {About half an inch of snow on the ground this morning. A little melting snow during the day.}
10	31.7	33.0	26.8	30.5	33.4	27.2	32.7	26.2	31.0	35.8	29.5	0.033	yc y> A̲ z̲. rU̲ y< G̲.
11	21.4	(33.5)	29.9	28.3	(33.8)	30.6	(33.2)	30.0	27.0	34.6	20.9	0.000	Ryl yc<
12	30.8	37.6	31.9	33.4	38.0	32.0	37.2	31.7	32.0	34.6	25.7	0.011	y rw N̲ y< U̲. A little snow early.
13	27.4	39.8	32.1	33.1	40.2	32.3	39.6	31.9	34.5	38.7	24.0	0.033	Ryf Sw N. A little snow early.
14	24.0	24.0	17.9	22.0	24.6	18.0	24.2	17.9	27.8	39.7	23.1	0.000	rln Ry U̲.
15	13.7	25.3	24.1	21.0	26.0	24.5	25.2	23.9	20.2	28.0	12.2	0.000	r Rd Ryl̲. A little snow in the evening.
16	30.4	37.3	30.7	32.8	37.7	31.1	36.9	30.9	36.0	35.9	17.8	0.033	y i A little snow in the following night.
17	31.9	36.2	19.6	29.2	36.6	20.1	36.0	19.8	32.3	37.4	30.6	0.121	y rd< N̲.
18	10.1	13.2	8.1	10.5	13.7	8.8	13.3	8.3	(13.8)	(36.4)	(9.3)	(0.000)	rd
19	9.7	4.4	−6.8	2.4	5.0	−6.0	5.0	{cannot be read}	13.0	14.0	5.4	0.000	rn d<
20	−8.6	9.2	22.4	7.7	9.5	23.1	9.2	22.1	2.4	14.0	−9.3	0.000	rd̲ y< d>
21	35.6	51.0	46.9	44.5	51.5	47.1	51.4	46.1	38.0	38.3	−1.8	0.000	w Ry
22	42.9	51.4	41.3	45.2	51.8	41.6	51.0	40.7	45.8	51.5	38.0	0.044	w Rr
23	42.8	56.4	45.9	48.4	56.7	46.0	55.8	45.1	48.2	51.0	39.4	0.000	w Rr
24	†26.7	29.4	28.7	28.3	30.0	28.1	29.2	27.5	31.7	§56.7	25.4	0.000	rl yc< Snow beginning after 7 P.M.
25	35.5	30.6	36.6	34.2	30.8	37.1	30.0	35.9	29.5	36.0	27.3	‡0.457	yc
26	28.6	36.3	37.0	34.0	36.9	37.1	36.1	36.5	33.5	37.6	25.7	0.000	Rye {Thunder and lightning about 9½ P.M., with some hail.}
27	48.6	39.3	25.8	37.9	39.9	25.9	39.0	25.2	42.2	51.4	32.4	0.165	yw
28	20.6	31.1	30.0	27.2	31.8	30.1	30.9	29.7	25.3	42.5	17.1	0.000	yl A little snow towards night.
29	26.9	33.4	33.9	31.4	33.9	33.2	33.1	33.1	29.2	32.0	23.4	0.044	yc {Snow beginning about 3 P.M. Stopping by 6½ P.M.; very little.}
30	35.1	39.5	40.4	38.3	39.6	40.3	38.8	39.7	37.4	37.3	28.0	0.022	y Rc Sw
31	33.3	52.7	47.2	44.4	53.3	47.1	52.4	46.8	37.7	40.0	32.2	0.011	y> w Rr N.
Sums	786.0	985.3	883.9	865.5						1073.5	628.9	1.040	Rainfall for month 1.04 inches
Means	25.4	32.8	28.5	28.8						34.63	20.28		Mean temperature " " {mean of 3 means for 7, 2, 9} 28.9 Fahrenheit
													Maximum " " " (Dec. 24) 56.7 " "
													Minimum " " " (Dec. 20) −9.3 " "
													" " (reduced to standard of No. 4) −8.8 " "

The velocity of the wind is merely estimated in miles per hour. See general remarks on observations of 1873.

Observations in parentheses ( ) were not made at the regular times. The actual times are given below.

Date	Regular times.	Actual times.
4	2 P.M.	1 P.M.
11	2 P.M.	2½ P.M.
18	10 A.M.	9 A.M.

The relative humidity for December has been computed after applying the corrections for error of psychrometer given in the record for September, 1873.

* Dec. 1, 2, and 20, at 10 A.M. The mercury in the attached thermometer was too low to be seen, and the temperatures entered were estimated.

† Dec. 24, 7 A.M. Original record 21.7; the minimum reading this day makes it likely that this should be 26.7

‡ Dec. 25. Gauge C gave 0.419 inches; the adopted rainfall 0.457 inches, is the mean between this and the result obtained by measurement of snow.

§ Dec. 24. By the 2 P.M. observations and 4 P.M. observations of the previous day, the maximum must have been 56.7 instead of 51.7 as originally entered.

Auroras noticed.

None this month.

Zodiacal light.

Dec. 22, 6 to 6½ P.M. Zodiacal light conspicuous; pointed from the Milky Way about 4° higher than Altair; Saturn near southern edge; apex indistinct; indeed, faint light traceable all along the zodiac to Taurus, where it again joined the Milky Way.

Dec. 23, 6½ P.M. Little or no Zodiacal light visible.

Dec. 27, 6 to 7 P.M. Zodiacal light noticed, reaching to Taurus as on Dec. 22.

Observers: A. B. Gibbs at 7 A.M. & 9 P.M., except 9 P.M. Dec. 11.
Other observations by A. Searle.

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General remarks on the Observations for 1875.

Range of temperature

Minimum temperature observed in 1875 — 8.8 December 20. (This reading is reduced to the standard of thermometer No. 4).

Maximum temperature observed in 1875 91.1 at 2 P.M. June 28. This is the reading of thermometer No. 4; the reading of the maximum thermometer was lost.

Observers

The names of the observers are given in the record for each month.

Instruments:

The only remarks required upon the instruments are as follows:

Barometer

Barometer Newman 68 has been used throughout the year. It is mounted on the north wall of the West Transit Room, with its cistern about 2½ feet from the floor. See general remarks on observations of 1874.

Psychrometer

The psychrometer remains apparently in the same condition as in previous years; and the relative humidity has been computed with the corrections given in the record for September 1873. A few observations for error of psychrometer are given in the record for 1875.

See general remarks on observations for 1874.

Maximum (set at 10 A.M.)

See remarks on the maximum thermometer Casella 13399 in the general remarks on the observations of 1872 and 1873. No change has been made in the manner of reading the instrument.

Wind

A vane and anemometer were set up on the barn January 31. No recording apparatus connected with them has been in use. They have merely aided in the estimates made by the observers at the time of observation, with regard to the direction and force of the wind.

Rainfall

Gauge C continues in the same condition as at the close of 1874, and has been regarded as the standard gauge. Gauge A was repaired in the summer, and is now considered more trustworthy than formerly, but its position is unfavorable to accuracy. Measurements of fallen snow have been made in the manner described in the

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general remarks on the observations of 1872.

Mean temperature — The mean temperature has been derived, as in 1874, from the mean of the three means of each month for 7 A.M., 2 P.M., and 9 P.M.

Phenomena — The cold of the early part of the year was unusually severe and protracted. In the record for March is a comparison of this with previous winter seasons.

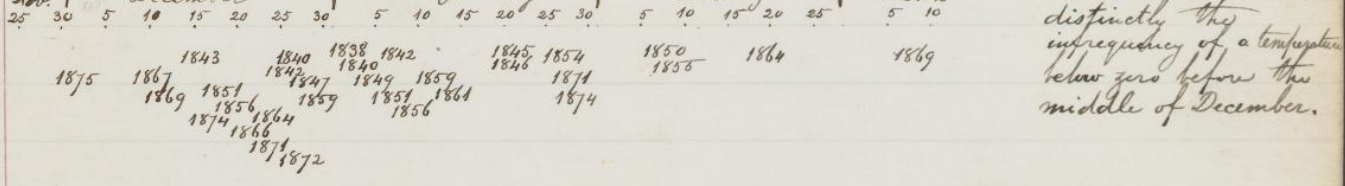
The drought of the autumn of 1874 had left the ground comparatively dry at the outset of the winter. The frost rapidly extended downward, and much trouble was experienced throughout this part of the country from the freezing of the water pipes.

The cold of November 30 was also extraordinary. There is no record at the Observatory of a temperature below zero in the November of any previous year.

Year	~~Lowest~~ temperature recorded in November	First record for the season of a temperature below zero
1838	19	Dec. 31, 1838
1839	12	Jan. 1, 1840
1840	22	Dec. 25, 1840
1841	17	Jan. 6, 1842
1842	13	Dec. 24, 1842
1843	18	Dec. 14, 1843
1844	10	Jan. 19, 1845
1845	12	Jan. 19, 1846
1846	21	—
1847	6	Dec. 27, 1847
1848	13	Jan. 13, 1849
1849	29	Feb. 6, 1850
1850	20	Jan. 5, 1851
1851	18	Dec. 17, 1851
1852	19	—
1853	14	Jan. 25, 1854
1854	16	Feb. 6, 1855
1855	16	Jan. 7, 1856
1856	21	Dec. 18, 1856
1857	14	—

Year	Lowest temperature recorded in November	First record for the season of a temperature below zero
1858	19	Jan. 10, 1859
1859	27	Dec. 28, 1859
1860	17	Jan. 13, 1861
1861	26	—
1862	25	—
1863	30	Few data for this period: Feb. 18, 1864
1864	24	Dec. 23, 1864
1865	25	—
1866	18.9	Dec. 20, 1866
1867	11.6	Dec. 9, 1867
1868	23.5	March 6, 1869
1869	15.9	Dec. 10, 1869
1870	25.5	Jan. 25, 1871
1871	5.6	Dec. 22, 1871
1872	12.1	Dec. 25, 1872
1873	10.6	Jan. 26, 1874
1874	15.9	Dec. 15, 1874
1875	−2.4	Nov. 30, 1875

The third column of the memorandum above may be arranged as follows: so as to exhibit more distinctly the infrequency of a temperature below zero before the middle of December.



The changes of temperature between Dec. 17 and 21, 1875, were also remarkable; from +36.4 to −9.3 and back to +51.5 (uncorrected readings).

Death of Professor Winlock — Professor Joseph Winlock died early in the morning of June 11, 1875. He had been Director of Harvard College Observatory for the previous nine years.

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January 1876. Meteorological Record of

Date	Barometer	Attached Thermometer	Casella 3235	Casella 12530	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity by Guyot's Tables	Wind	Clouds
1	30.050	45.8	56.0	54.8	55.2	55.1	57.0	52.8	81	1 W	1 Rs
2	29.898	46.3	48.0	47.0	47.6	47.0	49.1	47.0	94	1 SW	10 Pm
3	29.966	46.0	41.5	40.3	40.7	40.4	42.3	37.0	65	2 SW	6 Rs
4	30.224	34.0	19.8	19.3	19.4	18.8	20.4	15.0	40	15 NW	0
5	30.530	25.4	16.0	15.9	16.0	15.1	17.0	13.9	72	1 W	2 Pr Rs
6	29.786	37.7	42.2	41.5	42.0	41.2	43.0	39.9	84	1 W	10 Pm Pr Fm Rs
7	30.199	26.7	19.0	18.6	18.6	18.0	19.8	16.4	70	8 NW	9 Pr; thin
8	30.125	33.1	33.9	32.9	33.2	33.0	34.8	32.0	86	2 SW	8 Pr Rs; thin
9	29.613	39.0	43.5	42.5	43.0	42.2	44.4	40.0	74	5 SW	10
10	29.391	42.0	44.0	43.1	43.6	43.0	44.9	38.8	61	11 W	10 Pr Pm Fm
11	29.891	20.0	14.0	13.6	13.4	13.0	14.8	10.4	46	15 NW	0
12	29.839	21.0	20.0	19.6	19.4	19.0	20.9	17.0	63	3 SW	5 Pr Rs Fm
13	30.046	†15.0(?)	10.9	10.3	10.2	10.0	11.9	9.0	71	13 NW	0 Fm
14	30.212	†15.0(?)	12.9	12.4	12.1	11.9	13.9	11.0	73	2 W	0
15	30.190	27.0	27.8	26.8	26.8	26.9	28.5	24.6	72	2 SW	1 Pm Fm
16	29.908	34.0	39.4	38.2	38.7	38.2	40.1	35.9	73	6 W	1 Pm Fm
17	30.094	35.8	35.4	34.8	34.9	34.4	36.1	33.7	91	1 SE	10 Pr; snowing
18	30.029	36.8	38.8	37.9	38.4	37.4	39.6	37.4	93	0 SE	10 Pm fog
19	29.596	43.9	53.2	52.6	53.1	52.2	54.2	51.2	88	2 S	10 Pm Pr
20	29.671	39.0	37.5	36.8	36.9	36.3	38.1	30.0	42	20 NW	2 Fm M
21	30.188	32.0	30.0	29.2	29.5	29.0	30.7	24.0	43	15 NW	3 M Fm
22	30.546	28.6	19.6	18.9	19.1	18.3	20.3	15.0	42	6 NW	10 Pr
23	29.922	31.0	26.9	26.0	26.5	25.8	27.7	26.2	100	3 NW	10 Pr; raining
24	30.050	35.4	24.1	23.6	23.6	23.0	25.0	20.7	47	10 NW	0
25	(30.167)	(19.6)	(14.8)	(14.5)	(14.4)	(14.0)	(15.7)	(13.5)	(84)	(0 NW)	(7 Rs)
26	30.004	23.6	17.6	*17.0	17.1	16.5	18.2	14.6	65	16 NW	0
27	29.900	27.0	30.6		30.0	29.4	31.3	29.8	100	5 SE	10 Pr; snowing
28	30.149	33.0	37.0		37.0	36.2	38.0	35.4	89	1 W	10 Pr Pm
29	29.775	36.7	37.7		37.6	36.7	38.4	36.8	99	1 NE	10 Pm fog
30	30.453	27.6	15.8		15.3	14.8	16.4	11.9	47	7 NW	0 Rs
31	(30.425)	(22.0)	(10.0)		(9.4)	(9.0)	{under the fastening}	(9.5)		(0 NW)	(9 Pr)
1	30.078	55.5	63.8	63.0	63.5		64.8	58.1	70	1 W	2 Pm Fm Rs
2	29.757	50.1	61.0	60.0	60.8		62.0	55.1	67	7 SW	9 Pm M Fm
3	29.944	51.0	44.7	43.8	44.0		45.1	36.8	44	4 W	2 Pm Fm Rs
4	30.350	27.8	22.9	22.3	22.4		23.5	17.7	40	9 NW	0
5	30.320	35.0	27.6	26.9	26.9		27.9	23.1	60	5 S	10 Pr Rs
6	29.804	40.0	40.7	40.1	40.3		41.2	38.2	85	8 NW	10 Pm Pr M Fm
7	30.156	33.8	26.0	25.4	25.6		26.4	21.7	60	0 calm	2 Pr Rs Rm
8	29.933	37.7	39.0	38.4	38.7		39.8	34.8	68	0 E	10 Pm
9	29.608	41.5	51.0	50.2	50.8		51.9	46.0	67	2 SW	10 Pm
10	29.496	46.3	34.1	33.6	33.7		34.9	27.5	43	20 W	1 Rs Fm
11	29.871	30.0	21.0	20.6	20.6		21.9	16.1	37	15 W	0 Fm
12	29.776	28.6	26.0	25.2	25.5		26.8	21.0	47	3 W	8 Pr M Fm
13	30.113	25.8	14.9	14.6	14.3		15.6	11.6	55	6 NW	0
14	30.121	27.1	24.0	23.6	23.7		24.9	20.0	55	2 SW	10 Pm
15	30.144	32.8	33.8	33.0	33.1		34.3	28.2	54	3 W	10 Pr Rs
16	30.032	38.5	42.7	41.8	42.1		43.2	34.5	38	4 NW	0 Pr Rs
17	29.965	36.3	37.7	36.9	37.1		38.2	36.3	96	0 calm	10 Pm fog
18	29.807	39.0	41.9	41.0	41.4		42.3	40.9	99	0 calm	10 Pm fog
19	29.508	46.1	51.8	51.0	51.5		52.4	49.4	88	4 SW	10 Pm
20	29.930	42.0	36.0	35.2	35.4		36.4	29.0	45	13 NW	2 Pm Fm
21	30.248	36.2	28.7	28.0	28.1		29.2	22.4	39	13 NW	0 M Fm
22	30.464	31.3	25.7	25.0	25.2		26.3	19.8	37	2 W	10 Pr
23	29.740	32.8	30.1	29.7	29.9		31.0	29.0	95	0 NW	10 Pr
24	30.052	35.1	26.0	25.4	25.5		26.8	21.4	52	5 NW	0 Fm
25	29.961	30.0	28.9	*28.4	28.6		29.4	24.5	61	4 S	10 Pr
26	30.018	29.2	21.9		21.4		22.6	17.0	42	8 NW	0 Pr Rs
27	29.694	31.0	40.1		39.6		41.0	38.1	87	7 SW	5 Pm Pr Rm Rs Fm
28	30.046	33.1	36.5		36.0		37.1	35.6	100	4 E	10 Pm fog; raining
29	29.562	38.4	44.2		43.8		45.0	41.0	79	5 SW	10 Pm
30	(30.504)	(33.8)	(19.0)		(18.6)		(19.8)	(14.4)	(39)	(6 NW)	(0)
31	30.268	29.2	28.9		28.6		29.3	25.3	71	3 N	5 Pr Fm

Sums of columns, number of observations, means, and reduction of barometer to the freezing point	10 A.M.	4 P.M.
Barometer	930.837 31 30.027 −.008 30.019	929.270 31 29.976 −.021 29.955
Attached thermometer	980.0 31 31.6	1125.0 31 36.3
Casella 32.35	917.9 31 29.6	1070.6 31 34.5
Casella 12530	·	
No. 4	902.7 31 29.1	1056.7 31 34.1
Minimum after setting	885.8 31 28.6	
Dry bulb	932.5 30 31.1 Or, adding estimate for Jan. 31, mean 30.4	1091.0 31 35.2
Relative humidity	2158 30 72	1920 31 62
Wind	175 31 5.6	163 31 5.3
Clouds	174 31 5.6	176 31 5.7

Gauge A removed this month, the magnetic buildings, on the roof of one of which it stood, having become dilapidated and having been pulled down.

No fall of snow deep enough for measurement.

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Harvard College Observatory. January 1876.

Date	External Thermometer No. 4				Casella 3235		Casella 12530		Maximum after setting	Extreme temperatures		Rainfall in inches Gauge C examined at 10 A.M.	Remarks
	7 A.M.	2 P.M.	9 P.M.	Mean	2 P.M.	9 P.M.	2 P.M.	9 P.M.		Minimum set at 10 A.M.	Minimum set at 10 A.M.		
1	50.3	64.7	45.2	53.4	65.0	45.6	64.0	44.7	54.5	54.9	36.8	0.011	w Rz
2	40.3	58.9	55.5	51.6	59.0	56.4	58.0	54.3	46.9	64.5	38.2	0.011	w Ry
3	37.8	45.8	34.1	39.2	46.0	34.3	45.2	33.9	41.4	60.6	35.6	0.000	w Rz
4	24.2	23.0	16.6	21.3	23.7	16.3	22.9	16.4	20.8	47.0	18.8	0.000	z Rd
5	10.0	28.4	31.4	23.3	28.7	31.5	28.4	30.8	18.3	23.8	9.2	0.000	d y
6	39.3	42.5	24.1	35.3	42.3	24.2	41.5	23.9	41.6	41.9	15.0	0.044	y Rc {A little rain at times. Evening somewhat clear, with strong wind.}
7	15.4	25.7	22.3	21.1	25.9	23.1	25.2	22.7	20.2	42.6	14.7	0.011	Ryd y
8	29.5	42.0	37.4	36.3	42.0	38.2	41.2	37.4	33.2	33.0	18.0	0.000	y Rc Rain in the evening and following night.
9	38.4	50.7	37.9	42.3	51.0	38.1	50.0	37.2	42.2	42.4	33.0	0.353	yw Rain following night.
10	46.3	39.0	22.9	36.1	39.7	23.1	38.9	22.3	42.6	51.0	37.2	0.331	yw rdn rn N.
11	13.6	19.9	16.9	16.8	20.6	17.1	20.0	17.2	16.4	42.8	12.2	0.000	rdn
12	14.6	25.3	19.6	19.8	25.7	20.1	25.1	19.9	20.9	21.8	12.9	0.000	d Ry rU
13	9.0	13.4	10.7	11.0	14.0	11.4	13.6	11.2	12.2	25.8	8.2	0.000	rd
14	4.9	22.8	21.1	16.3	23.5	21.8	22.8	21.3	13.8	14.7	4.1	0.000	rd y A3. Ry U.
15	19.6	34.0	27.7	27.1	34.5	28.7	33.8	28.0	27.4	27.2	11.9	0.000	rl yw A little snow following night.
16	(35.4)	42.8	36.5	38.2	43.1	37.1	42.4	36.3	38.4	38.6	26.8	0.044	Rw
17	32.7	37.7	35.5	35.3	38.1	36.3	37.3	35.2	35.1	43.0	31.2	0.022	yf Some snow early and rain later.
18	35.5	41.4	49.5	42.1	41.9	50.0	41.0	48.7	38.0	38.0	33.1	0.088	f Some rain about 1 P.M.
19	52.5	56.3	46.5	51.8	56.5	47.0	55.4	46.0	51.6	53.0	37.2	0.033	yw A few drops of rain.
20	35.7	35.6	30.1	33.8	36.1	31.1	35.2	30.1	37.7	56.0	34.6	0.110	rln
21	27.4	29.2	21.5	26.0	29.9	22.5	29.0	22.0	30.9	38.1	25.0	0.000	m Rd
22	15.4	23.9	24.2	21.2	24.1	25.0	23.8	24.3	20.8	31.0	14.4	0.000	y Rd
23	21.1	(29.5)	34.2	28.3	(29.9)	35.1	(29.0)	34.4	27.0	26.6	18.3	0.177	y Rc {A little snow previous night; a little rain during the day.}
24	23.5	26.3	17.0	22.3	27.0	17.6	26.1	17.1	25.0	35.8	21.8	0.121	z Rd
25	(9.0)	27.6	(28.2)	21.6	28.0	(29.1)	27.4	(28.3)	(16.2)	(26.7)	(7.0)	(0.000)	Rc y {A few snowflakes about 4 P.M.} {A little snow in the evening}
26	18.7	22.0	16.1	18.9	22.4	16.9	*21.9		19.4	28.7	13.9	0.022	z Rdn
27	24.4	37.6	36.5	32.8	38.0	37.0			30.2	30.1	11.2	0.088	y {Some snow early in the day} y A3.
28	30.3	37.1	37.0	34.8	37.3	37.5			36.8	39.4	29.6	0.088	y Some rain after noon.
29	34.3	48.0	37.2	39.8	48.2	38.0			37.0	39.7	34.1	0.188	yw Sf A little rain. {High wind following night.}
30	(14.8)	17.4	13.2	15.1	18.0	14.3			17.2	48.2	13.8	0.077	z Rd
31	(7.1)	30.1	(24.2)	20.5	30.1	(25.0)			(11.2)	(19.0)	(6.2)	(0.000)	y Rd y A3.
Sums	811.0	1078.6	910.8	933.4						1185.9	664.0	1.819	Rainfall for month 1.82 inches
Means	26.2	34.8	29.4	30.1						38.26	21.42		Mean temperature " " 30.1 Fahrenheit.

Maximum " " " 64.5 " ; Jan. 2.
Minimum " " " 4.1 " ; Jan. 14.
" (reduced to standard of No. 4) 4.6 "

The velocity of the wind is merely estimated in miles per hour. See general remarks on observations of 1873.

Observations in parentheses ( ) were not made at the regular times. The actual times are given below.

Date	Regular times	Actual times
16	7 A.M.	8 A.M.
23	2 P.M.	3 P.M.
25	7 A.M., 10 A.M., 9 P.M.	8 A.M., 10¼ A.M., 10 P.M.
30	7 A.M., 4 P.M.	8 A.M., 3½ P.M.
31	7 A.M., 10 A.M., 9 P.M.	7⅓ A.M., 8 A.M., 9½ P.M.

† Jan. 13 and 14, 10 A.M. Mercury of attached thermometer out of sight; the readings 15.0 are estimates.

The relative humidity for January has been computed after applying the corrections for error of psychrometer given in the record for September, 1873.

* Thermometer Casella 12530, was removed Jan. 26, to be used in Mr. Waldo's series of astronomical observations.

Auroras noticed.

None this month.

Zodiacal light.

Jan. 13, 6 P.M. Zodiacal light to Taurus as on Dec. 22 & 27, 1875.

Jan. 21, 7 P.M. Zodiacal light as far as the Pleiades, but not farther.

Jan. 24, 7 P.M. Zodiacal light bright in the west, but not apparently reaching beyond Aries.

Jan. 26, 6 P.M. Zodiacal light to the Pleiades, not reaching the Milky Way.

Observers: at 7 A.M., Jan. 1 to 7 inclusive, & 10 to 13 inclusive, A. B. Gibbs; Jan. 31, A. Searle; other dates, L. Waldo:
at 9 P.M., Jan. 1 to 6 inclusive, & 9 to 12 inclusive, A. B. Gibbs; other dates, L. Waldo.
Other observations by A. Searle.

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February 1876. Meteorological Record of

Date	Barometer	Attached Thermometer	Casella ‡ 3235	Casella ‡ 12530	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's Tables	Wind	Clouds
1	30.096	29.6	28.2		27.9	27.2	29.1	26.1	82	2 SW	10 R
2	* 28.893	34.7	28.8		29.4	28.2	30.2	27.1	81	30 W	10 R
3	30.395	§ 15.0 (?)	8.0		7.1	7.0	9.0	{cannot be read}		8 W	0 Rs
4	29.872	28.0	29.5		29.4	28.2	30.5	28.0	89	3 W	10 R
5	* 30.819	23.8	4.3		3.8	3.3	5.2	{below graduation}		7 NW	0
6	30.620	22.2	25.0		24.3	24.0	26.0	22.8	78	3 SW	1 Rs
7	30.058	35.8	42.1		42.2	42.0	43.6	40.4	84	4 W	2 R Rs Fm haze
8	30.390	36.4	38.0		37.5	37.0	38.8	32.6	56	6 NW	5 R Rs
9	30.318	35.3	34.8		34.2	33.9	35.4	32.2	82	6 NE	10 Rm
10	29.909	34.6	27.8		27.4	27.0	28.8	25.9	83	8 NE	10 R Fm
11	30.067	36.0	33.9		33.3	32.9	34.7	32.4	91	3 SE	10 Rm; raining
12	29.856	40.4	42.8		42.0	41.8	42.5	35.4	50	6 NW	0 R Rs
13	29.984	39.0	45.0		44.3	44.0	45.8	37.8	48	4 W	0
14	30.136	40.7	33.7		33.0	32.9	34.1	30.2	76	8 NE	10 Rm Fm; some rain
15	* 29.433	39.5	34.1		33.7	33.2	35.1	33.5	99	6 N	10 Rm; some rain
16	29.509	36.4	34.0		33.4	33.2	34.9	28.8	55	9 SW	6 M Fm
17	29.665	33.8	30.0		29.7	28.9	30.7	25.3	57	8 W	10 R Rm Fm
18	29.923	26.3	25.0		24.6	24.1	25.8	21.0	58	7 NW	5 Rs Fm
19	(30.006)	(30.6)	(26.8)		(26.5)	(25.8)	(27.7)	(23.0)	(61)	(1 W)	(9 R Rs; thin)
20	29.951	34.8	33.0		32.6	32.1	33.7	26.1	39	9 W	4 Rm M Fm
21	30.235	25.4	24.2		23.8	23.2	25.0	19.5	47	8 NW	5 Rs
22	29.783	33.4	35.3		35.6	34.2	36.2	32.6	79	3 NW	5 R Rs Fm
23	29.708	28.0	13.5		13.1	12.5	14.3	10.8	62	13 NW	1 R Rs Fm
24	29.751	§ 15.0 (?)	2.0		1.2	1.0	below graduation			13 W	1 Rs Fm
25	29.923	§ 15.0 (?)	13.2		12.8	12.2	14.0	10.3	58	10 W	6 R Rs
26	29.999	21.2	20.7		20.3	19.8	21.4	15.6	36	7 NW	5 Rs Rm
27	30.200	24.0	20.6		20.3	19.7	21.5	16.4	47	4 NW	9 R Fm
28	(29.918)	(29.1)	(26.9)		(26.7)	(25.9)	(27.6)	(25.0)	(86)	(1 NE)	(10 R)
29	29.972	27.0	26.8		26.6	25.8	27.6	24.6	82	6 N	10 R
1	29.899	33.2	33.7		33.1		34.0	30.0	75	2 SE	10 R
2	* 29.457	33.0	13.0		12.5		14.0	10.9	69	20 W	4 Fm Rs
3	30.350	26.6	21.0		20.6		21.6	16.1	41	3 SW	10 R
4	30.000	33.2	30.0		29.8		30.6	25.3	58	6 W	10 R
5	* 30.871	28.8	11.9		11.8		12.9	9.0	53	3 W	0 Rs
6	30.104	28.9	38.8		38.4		39.2	35.6	80	1 S	10 R
7	30.134	41.8	45.6		45.2		46.2	38.6	51	2 NW	10 R Rs Fm
8	30.316	42.5	43.0		42.2		43.4	36.0	49	3 W	0 Rs
9	30.124	37.1	35.0		34.5		35.8	33.3	90	3 E	10 Rm
10	30.117	39.7	34.7		34.2		35.4	31.9	79	3 NE	4 R Rs
11	29.711	37.0	42.1		41.4		43.0	41.0	96	4 S	10 Rm
12	29.979	45.1	43.9		43.2		44.4	34.3	30	6 W	0
13	(30.012)	(48.3)	(52.8)		(52.3)		(53.4)	(42.9)	(40)	(2 W)	(4 Rs Rm)
14	30.000	39.4	33.3		33.0		34.1	32.1	95	5 E	10 Rm; rejoicing
15	* 28.845	40.1	51.8		51.0		53.0	51.0	95	25 SE	10 Rm; a little rain
16	29.550	40.0	34.8		34.2		35.4	29.6	59	7 W	10 Rm Fm
17	29.670	36.4	31.0		30.5		31.7	25.7	52	8 W	9 Rm Fm
18	29.959	35.4	30.2		29.7		30.9	24.7	49	7 NW	0 Rs M Fm
19	29.955	37.8	37.4		37.2		37.9	31.7	57	5 S	10 R
20	30.011	39.0	33.0		32.4		33.7	26.0	38	6 W	0
21	30.196	34.3	32.0		32.4		32.8	25.9	45	0 NW	10 R
22	29.730	36.7	32.0		31.7		32.7	25.5	41	3 NW	4 R Rs Rm Fm
23	29.699	21.7	11.1		10.7		12.0	8.5	59	14 NW	0
24	29.702	18.3	8.5		7.8		hidden by fastenings			13 W	1 Fm
25	29.897	25.2	23.8		23.1		24.4	18.7	36	8 NW	0 Rs Fm
26	30.000	27.1	28.1		27.9		28.8	21.8	36	5 W	10 R Rs
27	30.130	29.3	28.0		28.2		28.8	23.0	50	0 W	10 R
28	29.846	29.6	22.9		22.6		23.6	21.7	94	8 NE	10 R; snowing
29	30.071	33.0	30.0		29.6		30.6	25.4	60	3 NE	0

Sums of columns, number of observations, means, and reduction of barometer to the freezing point.	10 A.M.	4 P.M.
Barometer	869.389 29 29.979 −.004 29.975	868.635 29 29.953 −.016 29.937
Attached Thermometer	871.0 29 30.0	998.5 29 34.4
Casella 3235	788.0 29 27.2	913.4 29 31.5
Casella 12530		
No. 4	776.7 29 26.8	901.2 29 31.1
Minimum after setting	761.0 29 26.2	
Dry bulb	809.2 38 28.9 Or, adding estimate for Feb. 24, mean 28.0	924.3 28 33.0 Or, adding estimate for Feb. 24, mean 32.2
Relative humidity	1766 26 68	1677 28 60
Wind	203 29 7.0	175 29 6.0
Clouds	174 29 6.0	176 29 6.1

Snow measures.

Feb. 4, 10 A.M. Snow 6 inches deep, very uniform. 10 inches of this snow, in cylinder 1.8 inches across, weigh 2½ ounces. Hence rainfall to 1 inch of snow 0.095 inches; total rainfall 0.575 inches. Gauge C cleared out without examination.

Feb. 22, 10½ A.M. Snow 4¾ inches deep, pretty uniform. 15 inches of this snow, in cylinder 1.8 inches across, weigh 2¾ ounces. Hence rainfall to 1 inch of snow 0.108 inches; total rainfall, 0.512 inches; this result preferred to that by gauge C (0.364 inches).

Feb. 28, 10 A.M. Gauge C gives 0.188 inches; the snow is light and fell without wind; readily distinguished from old snow; measures not attempted.

Feb. 29, 10 A.M. 10 measures of new snow (somewhat uncertain on account of old snow): 7, 3.5, 4½, 4, 2, 5.5, 3, 4½, 5, 4½; mean 4.15 inches; 10 inches of this snow in cylinder 1.8 inches across weigh 2¾ ounces. Hence rainfall to 1 inch of snow 0.109 inches; total rainfall 0.732 inches; [illegible] inches.

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1872phae.proj...3625

Harvard College Observatory — February 1876.

Date	External Thermometer No. 4 7 A.M.	2 P.M.	9 P.M.	Mean	‡Casella 3235 2 P.M.	9 P.M.	‡Casella 12530 2 P.M.	9 P.M.	Maximum after setting	Extreme temperatures Maximum set at 10 A.M.	Minimum set at 10 A.M.	Rainfall in inches. Gauge C. Examined at 10 A.M.	Remarks
1	24.3	33.7	32.3	30.1	33.8	33.0			28.8	29.7	9.0	0.000	yl Rain following night.
2	33.2	(15.1)	7.4	18.6	(15.7)	8.2			29.6	35.5	27.1	0.496	yl y> A10. {High wind began about 9½ A.M.} {Wind moderated towards night.}
3	2.2	18.4	19.4	13.3	18.8	20.0			9.8	30.0	1.9	0.000	rd y< N. Snow beginning about 10 P.M.
4	23.5	31.0	19.0	24.5	31.0	19.5			29.1	29.0	6.9	†0.575	yl
5	0.9	10.6	4.2	5.2	10.8	5.0			7.6	31.7	0.1	0.000	rd
6	17.3	38.8	38.6	31.6	38.9	39.0			25.2	25.0	−2.0	0.000	yw< Rain after dark.
7	39.1	46.4	37.2	40.9	46.8	37.9			41.0	42.4	24.1	0.232	Rrw y<
8	33.5	41.5	33.6	36.2	42.2	34.2			37.8	46.9	32.6	0.000	rw
9	29.9	34.2	34.0	32.7	34.8	34.3			34.7	42.3	27.0	0.000	yl {A few drops of rain in the afternoon.}
10	24.9	34.1	31.0	30.0	34.7	31.2			27.8	35.4	23.0	0.496	yl y> RN. Ryll. {Rain and a little snow following night.}
11	31.2	37.8	49.9	39.6	38.4	50.1			33.5	34.6	26.6	0.011	ya Rain at times. y> U.
12	37.0	44.7	36.2	39.3	45.3	37.0			42.0	50.0	32.9	0.121	rw
13	36.0	53.7	41.3	43.7	54.2	42.4			43.8	45.6	32.9	0.000	rw
14	33.2	32.1	33.8	33.0	32.8	34.3			33.9	54.3	32.1	0.000	ya {Rain at times, pretty steady after noon.}
15	(34.8)	42.2	36.5	37.8	42.7	36.2			34.0	34.8	31.9	1.137	ya Frequent rain. {High wind beginning about 3½ P.M.} Sr U.
16	31.0	35.4	30.3	32.2	35.8	31.0			35.0	54.1	30.0	0.430	Ryl {Slight snow squalls about 8½ A.M. and 3 P.M.}
17	26.8	30.5	(25.3)	27.5	30.8	(25.9)			30.0	35.4	26.2	0.011	yl rU.
18	(18.5)	29.7	25.3	24.5	30.1	25.9			25.6	31.6	16.8	0.000	Rrl
19	17.5	38.0	32.3	29.3	38.0	33.0			(27.0)	(30.3)	(17.2)	(0.000)	Ryl RU.
20	(31.9)	32.3	24.2	29.5	32.9	25.0			33.0	38.3	25.8	0.000	rl
21	17.3	30.9	28.0	25.4	31.1	28.3			24.8	33.2	16.8	0.000	Rrl y< N Snow following night.
22	(31.3)	33.0	25.4	29.9	33.6	26.0			35.4	35.4	23.1	†0.512	ys y> A8½. Rrw Snow early.
23	(17.5)	11.9	1.3	10.2	12.3	2.0			14.6	35.4	12.5	0.000	rdn
24	−4.5	6.0	4.7	2.1	6.8	5.5			4.6	16.0	−5.8	0.000	rdn
25	(6.5)	22.6	17.4	15.5	23.0	18.0			14.2	13.8	0.9	0.000	Rrdn
26	14.2	27.9	24.4	22.2	28.0	25.1			21.0	23.1	12.1	0.000	yl
27	(13.7)	28.8	26.1	22.9	28.4	26.6			21.2	27.8	11.3	0.000	yRc Snow beginning at 9 P.M.
28	21.4	23.7	21.0	22.0	24.0	21.4			(27.0)	(28.2)	(19.6)	(0.188)	ycs {Snow stopped before morning; recommenced at noon.}
29	(23.9)	29.9	(20.0)	24.6	30.1	(21.1)			26.9	27.0	19.6	†0.535	ys y> N. Snow previous night and early today.
Sums	668.0	894.9	760.1	774.3						996.8	532.2	4.744	Rainfall for month 4.74 inches.
Means	23.0	30.9	26.2	26.7						34.37	18.35		Mean temperature " " 26.7 Fahrenheit.

Maximum " " (Feb. 14) 54.3 "
Minimum " " (Feb. 24) −5.8 "
" (reduced to standard of No. 4) −5.2 "

The velocity of the wind is merely estimated in miles per hour. See general remarks on observations of 1873.

Observations in parentheses ( ) were not made at the regular times. The actual times are given below.

Date	Regular times	Actual times
2	2 P.M.	2½ P.M.
13	4 P.M.	5 P.M.
15	7 A.M.	7½ A.M.
17	9 P.M.	9½ P.M.
18	7 A.M.	7½ P.M.
19	10 A.M.	10¼ A.M.
20	7 A.M.	7½ A.M.
22	7 A.M.	7½ A.M.
23	7 A.M.	7½ A.M.
25	7 A.M.	7¾ A.M.
27	7 A.M.	8 A.M.
28	10 A.M.	10½ A.M.
29	7 A.M., 9 P.M.	8½ A.M., 9⅓ P.M.

*Additional barometer readings.

Date	Time	Barometer	{Attached thermometer}	Remarks.
2	11 A.M.	29.012	35.1	{High wind began about 9½ A.M.}
2	2½ P.M.	29.288	35.9	Wind continuing.
5	6 P.M.	30.888	28.8	
5	7¼ P.M.	30.882	28.6	
5	9 P.M.	30.881	25.0	
15	4¼ P.M.	28.844	41.0	High wind
15	4 7/12 P.M.	28.832	41.0	beginning
15	5½ P.M.	28.836	41.3	about 3½ P.M.
15	6 P.M.	28.850	41.3	

† Rainfall determined by snow measures Feb. 4, 22, 29.

The relative humidity for February has been computed after applying the corrections for error of psychrometer given in the record for September 1873.

‡ Feb. 24. Thermometers Casella 3235 and Casella 12530 tested at 4½ P.M. for change of freezing point.

A bucket of water containing snow which had been standing indoors since 3⅔ P.M., was brought to the Clock Room and afterwards to the East Transit Room; the Clock Room was warm, the other below the freezing point.

Casella 3235 read 32.9 in both rooms, when dipped into the bucket.

Casella 12530 (removed from its copper case) read 32.8 in the Clock Room, 32.1 in the East Transit Room, when dipped into the bucket. In the East Transit Room it was dipped when it was standing at about the freezing point. Hence 32.1 may be adopted as its true reading at the freezing point, and 32.9 as the true reading of Casella 3235 at the freezing point.

Observers.

At 7 A.M., Feb. 5 to 12 inclusive, A. B. Gibbs; other dates, L. Waldo.

At 9 P.M., Feb. 7, 9, 10, 11, A. B. Gibbs; Feb. 4, 5, 6, 8, 19, A. Searle; other dates, L. Waldo.

Other observations by A. Searle.

Auroras noticed.

Feb. 19, 8 P.M. Much auroral light and occasional short streamers, among clouds in the north; shifting patches of light from west to east through Origo; the green line could be seen in the north, with the spectroscope, but not in the southern patches.

9 P.M. Low double arch in the north; no southern aurora.

Zodiacal light.

Feb. 12, 7 to 7½ P.M. Zodiacal light conspicuous to the Pleiades; but separated from the Milky Way by a strip of dark sky from Algol to Aldebaran.

Feb. 13, about 7 P.M. Zodiacal light not apparent; but sky rather hazy.

Feb. 16, 7 P.M. Zodiacal light not distinct beyond Aries.

Feb. 17, 7 P.M. Zodiacal light appears to reach the Milky Way.

Feb. 19, 8 P.M. Little zodiacal light visible, (aurora better bright).

Feb. 20, 7 P.M. Zodiacal light not quite reaching the Pleiades.

Feb. 24, 8 P.M. Zodiacal light nearly to the Pleiades; same yesterday evening.

§ Mercury of attached thermometer sometimes out of sight; the readings marked (?) are estimates.

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March 1876. Meteorological Record of

10 A.M.

Date	Barometer	Attached Thermometer	Castella 3235		No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's Tables	Wind	Clouds
1	30.107	23.3	27.7		28.3	26.8	28.9	25.5	77	4 SW	10 R
2	29.884	30.1	26.0		26.1	25.1	27.0	22.7	65	6 N	10 R
3	30.040	24.6	20.6		20.2	19.5	21.4	16.8	55	7 NW	0
4	30.314	25.6	25.2		24.7	24.1	26.0	20.8	53	3 NW	0 Rs
5	30.386	30.0	33.0		32.4	32.0	33.9	30.4	80	4 SW	0
6	30.263	38.3	41.8		41.2	40.6	42.3	37.3	68	2 SW	10 Pm R
7	30.028	42.0	56.3		55.5	55.2	57.2	50.5	66	7 SW	1 Rs Fm haze
8	29.700	47.4	53.3		53.1	52.0	54.2	51.7	92	10 SE	10 Pm; some rain
9	29.910	42.0	37.0		36.7	36.0	38.0	33.7	73	6 NW	10 Pm
10	30.090	40.6	31.8		31.5	30.8	32.4	27.7	66	4 NW	10 R
11	30.327	35.1	30.3		30.0	29.3	(31.5)	(27.4)	(72)	4 NE	10 Pm
12	30.250	38.6	34.4		33.8	33.4	35.0	31.1	76	4 E	10 Pm
13	†29.840	38.0	36.0		35.7	35.1	36.9	35.1	97	1 N	10 Pm; raining
14	30.014	24.0	20.9		20.2	19.8	21.8	16.9	50	14 NW	0 Fm
15	30.015	20.5	21.8		21.2	20.9	22.4	16.2	33	16 NW	0
16	30.155	27.3	28.5		27.9	27.2	29.2	21.6	30	3 NW	0 R Rs
17	29.315	34.8	34.1		33.8	33.1	35.0	32.9	94	5 NE	10 Pm
18	29.481	32.0	21.9		21.7	20.7	22.7	18.8	66	16 NW	10 R Rs Fm
19	30.034	†15.0(?)	13.4		12.7	12.1	14.0	10.5	62	10 NW	2 Rs
20	30.350	20.1	24.8		23.9	23.8	25.2	20.0	52	4 NE	10 R; thin
21	29.288	33.8	42.6		42.4	41.0	43.7	42.1	97	9 SE	10 Pm; raining
22	29.644	34.8	29.9		29.5	28.5	30.7	26.5	69	9 W	10 R; a little snow
23	30.064	30.7	31.7		31.1	30.6	32.3	25.4	44	4 W	5 Rs Fm
24	30.177	33.0	36.8		36.1	35.7	37.4	30.5	51	3 W	1 Fm
25	30.149	36.7	33.9		33.1	32.6	34.4	32.2	93	6 NE	10 R; snowing
26	29.503	41.0	47.8		47.8	46.6	48.8	46.9	95	2 SW	10 Pm
27	29.635	43.7	41.9		41.7	40.8	42.7	36.7	60	5 W	10 Pm Fm
28	29.904	37.2	38.0		37.4	36.9	38.8	31.8	49	4 NW	1 R Rs Fm
29	29.200	44.9	52.9		53.4	52.9	54.8	49.1	71	6 W	5 M Fm
30	29.523	39.5	41.9		41.3	40.6	42.6	34.0	38	11 S	10 Pm Fm
31	29.735	37.3	38.0		37.4	36.7	38.6	30.9	46	6 W	1 M Fm

4 P.M.

Date	Barometer	Attached Thermometer	Castella 3235		No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's Tables	Wind	Clouds
1	30.004	31.4	33.0		33.3		33.9	29.1	67	6 W	10 R Pm
2	29.824	31.8	30.0		29.7		30.7	24.9	53	13 N	10 R
3	30.050	30.4	25.6		25.1		26.2	20.0	41	11 NW	1 Rs
4	30.268	33.0	36.0		35.7		36.7	28.2	36	4 W	5 Rs Fm
5	(30.347)	(37.0)	(44.9)		(44.5)		(45.4)	(37.8)	(50)	(2 SW)	(6 R Rs)
6	30.170	42.5	56.2		55.7		57.2	48.4	54	3 S	5 Rs Fm haze
7	29.902	48.4	61.1		61.2		61.9	54.0	62	9 SW	1 R Rs Pm haze
8	29.620	49.1	52.7		52.5		53.4	49.5	82	6 S	10 Pm
9	29.898	43.1	39.7		39.3		40.4	35.0	63	7 NW	10 Pm
10	30.080	40.7	34.1		33.8		34.6	29.8	67	4 E	10 Pm
11	30.312	36.8	31.0		30.7		31.8	27.8	73	4 NE	10 Pm
12	30.144	41.4	35.1		34.5		35.7	31.9	76	5 E	5 R Fm haze
13	29.696	38.6	36.7		36.4		37.6	35.7	96	3 W	10 Pm
14	30.044	31.6	27.5		27.0		28.1	21.7	41	11 NW	0
15	30.104	30.0	33.0		32.5		33.4	24.5	25	8 W	0
16											
17	29.117	35.0	29.0		29.0		30.0	28.2	97	8 NW	10 R; snowing
18	29.503	32.9	21.6		21.1		22.3	17.9	58	10 NW	0
19	(30.126)	(26.8)	(21.8)		(21.0)		(22.4)	(17.0)	(44)	(6 W)	(0)
20	30.246	31.1	30.8		29.9		31.0	26.7	69	6 E	10 R
21	29.162	38.1	51.0		50.7		51.9	49.8	94	4 S	10 Pm Fm
22	29.769	39.1	35.2		34.9		36.0	31.7	72	11 W	5 Fm M
23	30.010	37.3	37.0		36.5		37.6	28.8	35	6 NW	8 R Rs Fm
24	30.172	39.1	40.2		39.6		41.0	31.6	34	2 W	2 M Fm
25	29.947	37.3	34.0		33.5		34.7	33.0	98	7 E	10 Pm; raining
26											
27	29.736	48.3	42.8		42.4		43.4	36.9	56	7 W	4 Pm Fm
28	29.848	45.0	44.0		43.6		43.8	36.0	47	6 E	10 Pm Fm
29	29.270	50.5	53.9		53.8		54.7	44.3	42	10 SW	10 Pm M Fm
30	29.470	43.0	40.0		40.1		40.2	34.9	64	8 W	10 R; snowing
31	29.769	45.1	46.2		45.8		47.1	38.5	45	6 NW	8 M Fm Rs

Sums of columns, number of observations, means, and reduction of barometer to the freezing point.

	10 A.M.	4 P.M.
Barometer	927.325	866.608
	31	29
	29.914	29.883
	−.014	−.027
	29.900	29.856
Attached Thermometer	1041.9	1114.4
	31	29
	33.6	38.4
Castella 3235	1054.2	1104.1
	31	29
	34.0	38.1
No. 4	1041.8	1093.8
	31	29
	33.6	37.7
Minimum after setting	1020.4	
	31	
	32.9	
Dry bulb	1079.8	1123.1
	31	29
	34.8	38.7
Relative humidity	2040	1741
	31	29
	66	60
Wind	195	193
	31	29
	6.3	6.7
Clouds	196	190
	31	29
	6.3	6.6

Snow measured March 18 at 10½ A.M. in 10 places; 3½, 4, 3¼, 4, 3½, 3¾, 4, 2¾, 4, 3, 3½ inches; mean 3.475 inches.

15 inches of this snow in cylinder 1.8 inches across weigh 3 ounces. Hence rainfall to 1 inch of snow 0.1362 inches; total 0.473 inches less 0.452 inches March 17; remainder 0.021 inches; but as some rain fell as well as snow on March 16 and 17, the measures by gauge C are preferable to that above.

Snow with high wind after 8 P.M. on March 20; it changed to rain in the night. The rainfall by gauge C is probably too small, the snow being partly blown away; but the rain melted the snow so much that the gauge was the only means left.

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Harvard College Observatory. March 1876.

Date	External Thermometer No. 4 7 A.M.	2 P.M.	9 P.M.	Mean	Casella 3235 7 A.M.	2 P.M.	9 P.M.		Maximum after setting	Extreme temperatures Maximum set at 10 A.M.	Minimum set at 10 A.M.	Rainfall in inches. Gauge C examined at 10 A.M.	Remarks.
1	14.7	34.3	(28.2)	25.7	15.2	33.9	(28.6)		28.0	30.0	11.4	0.000	y A few snowflakes following night.
2	(21.7)	29.4	(24.4)	25.2	(22.2)	29.5	(24.8)		26.6	35.0	21.1	0.011	yc A few snowflakes at times.
3	(16.8)	24.7	18.3	19.6	(16.4)	25.2	19.1		21.0	29.5	15.0	0.000	rl
4	14.5	34.1	28.4	25.7	15.4	34.7	29.3		25.1	25.1	12.8	0.000	rl
5	18.4	45.4	37.6	33.8	19.4	45.4	38.1		32.2	35.4	18.0	0.000	Ryi
6	39.0	52.5	44.4	45.3	39.6	52.0	45.0		41.0	45.8	32.0	0.011	yw Sr A̅2̅.
7	46.4	62.6	49.5	52.8	47.2	62.8	50.0		53.8	56.4	39.4	0.000	Rr w̅
8	51.8	55.0	45.2	50.7	52.1	54.9	45.2		51.6	62.2	46.0	0.055	y Rw A little rain.
9	(34.7)	40.1	(32.7)	35.8	(35.1)	40.4	(33.0)		37.0	57.0	33.7	0.011	y Rl
10	29.7	34.2	28.4	30.8	30.2	34.5	29.0		32.0	39.8	29.0	0.000	y Rl Sr U̅ y T̅0̅.
11	27.9	31.2	29.5	29.5	28.5	31.7	30.2		30.7	34.1	24.4	0.000	y Rl
12	30.8	36.6	33.5	33.6	31.4	37.0	34.2		34.2	34.0	28.7	0.000	y Rc Sr 4̅.
13	34.3	35.5	(27.2)	32.3	35.0	36.0	(27.8)		35.6	37.0	32.4	0.088	ya Showers at times. r U̅.
14	20.2	25.6			20.8	26.0			23.3	36.7	18.2	0.199	rn Rd
15	14.5	30.4	25.9	23.6	15.4	31.0	26.2		22.4	27.3	13.0	0.000	rl
16	(20.3)	(36.5)	30.0	28.9	(20.9)	(37.0)	31.0		28.7	32.4	17.4	0.000	rl y< A T̅0̅. →N̅. Some sleet and rain after 3 P.M.
17	32.8	30.0	26.6	29.8	33.3	30.0	27.2		34.0	37.0	27.3	0.452	ys Snow previous night & after 10 A.M. r U̅. y T̅0̅.
18	20.9	23.0	8.1	17.3	21.5	23.3	8.8		23.0	34.0	20.1	0.331	yl y>A 1̅0̅. rRd N̅.
19	(8.1)	20.0	16.3	14.8	(8.9)	20.7	17.1		14.6	24.5	5.8	*0.000	rd
20	13.3	29.4	27.7	23.5	14.1	30.0	28.4		25.0	24.8	10.3	0.000	y Rd y< N̅. Snow with high wind after 8 P.M.
21	35.4	49.8	34.6	39.9	35.9	50.0	34.8		40.0	42.2	23.8	1.467	ya {Snow changed to rain during previous night. Rain ceased about noon.}
22	27.1	35.4	29.0	30.5	27.9	35.6	29.8		30.0	51.7	26.1	0.419	yl y>N̅. A little snow early
23	25.5	36.2	29.1	30.3	26.7	36.1	30.0		31.4	36.2	23.1	0.000	Ryl
24	26.4	39.5	30.8	32.2	27.3	39.7	31.5		36.2	36.2	23.9	0.000	Rw
25	33.3	33.2	39.9	35.5	33.9	33.9	40.1		34.0	40.4	not recorded	(0.055)	yc. Snow, changing to rain in the afternoon.
26	(45.2)	51.0	42.5	46.2	(45.3)	51.1	43.0		46.3	47.4	32.8	*2.360	w Sr y< 9̅.
27	38.3	44.7	36.0	39.7	39.0	44.8	36.7		41.6	50.8	37.7	0.000	yw y>A 3̅. y<U̅. Rr T̅0̅.
28		47.6	37.4			47.6	38.1		38.0	45.4	29.3	0.000	Rrw y< N̅. Rain following night.
29	49.1	55.7	38.4	47.7	49.6	55.4	39.0		50.6	52.9	35.4	1.047	Ryw y< N̅.
30	30.3	41.8	32.0	34.7	31.2	42.0	31.5		41.3	56.1	28.4	0.000	rw y< N̅9̅. Snow squalls at times.
31		46.0	(40.9)			46.4	(41.4)		37.5	43.0	28.9	0.022	Rrw
Sums	820.4	1191.4	952.5	915.4						1240.3	745.4	6.528	Rainfall for month 6.53 inches.
Means	28.3	38.4	31.7	32.7						40.01	24.85		Mean temperature " " (mean of 3 means for 7, 2, 9) 32.8 Fahrenheit.

Maximum " " " (March 8) 62.2 "
Minimum " " " (March 19) 5.8 "
— " — (reduced to standard of No. 4) 6.5 "

The velocity of the wind is merely estimated in miles per hour. See general remarks on observations of 1873.

Observations in parentheses ( ) were not made at the regular times. The actual times are given below.

Date	Regular times.	Actual times
1	9 P.M.	9 $\frac{1}{2}$ P.M.
2	7 A.M., 9 P.M.	7 $\frac{1}{2}$ A.M., 10 $\frac{1}{2}$ P.M.
3	7 A.M.	7 $\frac{1}{2}$ A.M.
5	4 P.M.	4 $\frac{3}{4}$ P.M.
9	7 A.M., 9 P.M.	7 $\frac{5}{12}$ A.M., 9 $\frac{1}{3}$ P.M.
13	9 P.M.	9 $\frac{2}{3}$ P.M.
16	7 A.M., 2 P.M.	7 $\frac{1}{2}$ A.M., 1 $\frac{1}{4}$ P.M.
19	7 A.M., 4 P.M.	7 $\frac{1}{2}$ A.M., 4 $\frac{1}{2}$ P.M.
25	10 A.M.	10 $\frac{1}{2}$ A.M. (for gauge C)
26	7 A.M.	7 $\frac{1}{2}$ A.M.
31	9 P.M.	8 P.M.

On March 11, the psychrometer had not settled its readings at 10 A.M., and was therefore read at 10 $\frac{1}{2}$ A.M., at which time Casella 3235 stood at 30.8, and No. 4 at 30.4.

† Additional barometer readings March 13. The reading for 10 A.M. was taken at 10 $\frac{4}{60}$; the barometer then seemed to be falling fast; at 10 $\frac{5}{60}$ it read 29.800; a zephyr began blowing at this time; at 10 $\frac{8}{60}$ the barometer read 29.793; at 10 $\frac{1}{3}$ the same; attached thermometer 38.2.

At 8 A.M. March 23, the cloth about the wetted bulb of the psychrometer being apparently dry, the readings were as follows: dry bulb 28.6; wet bulb 27.0; No. 4 27.2. The relative humidity for March has been computed after applying the corrections for error of psychrometer given in the record for September, 1873.

* Gauge C

March 19. A little snow blown into the gauge.

March 25, 5 $\frac{1}{2}$ P.M. 0.463 inches
March 26, 10 A.M. 1.897 "
Total 2.360 "

‡ March 19, 10 A.M. Mercury of attached thermometer out of sight; the reading 15.0 is an estimate.

Auroras noticed.

None this month.

Zodiacal light.

March 17, 8 P.M. Clear for a time; zodiacal light beyond the Pleiades, nearly to the Milky Way.

March 22, 8 P.M. Zodiacal light, hardly reaching the Milky Way. It does not seem to extend farther along the zodiac than it did last month, or even early in the winter.

March 23, 8 P.M. Zodiacal light as yesterday.

Observers; L. Waldo at 7 A.M. and 9 P.M.
A. Searle at 10 A.M., 2 P.M., 4 P.M.

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April 1876. Meteorological Record of

10 A.M.

Date	Barometer	Attached Thermometer	Casella 3235		No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's Tables	Wind	Clouds
1	29.970	41.0	37.6		37.2	36.4	38.4	31.1	49	9 NW	10 Pm M Fm
2	30.386	37.0	39.6		38.9	38.3	40.2	31.9	38	3 NW	0
3	30.126	40.0	40.6		40.4	39.4	41.4	35.2	56	4 SW	10 R Pm
4	29.733	41.0	37.7		37.0	36.8	38.1	36.3	97	11 NE	10 Pm; raining
5	29.842	37.2	33.8		32.8	32.4	34.8	32.8	95	11 N	10 R; a little snow
6	29.899	38.9	41.1		40.9	40.1	42.1	37.0	67	5 S	0 Fm
7	29.856	40.7	46.2		46.1	45.1	47.0	38.5	45	5 SW	9 R Rs
8	29.743	39.7	36.9		36.5	35.8	37.5	30.4	49	13 NW	1 Pm Fm Rs
9	29.843	34.4	31.9		31.4	30.9	32.8	26.1	46	9 NW	0 Rs
10	29.900	37.3	39.9		39.4	38.8	40.7	32.9	43	10 NW	0 Rs
11	29.994	40.8	49.2		48.7	48.2	50.2	40.6	42	7 NW	1 Rs
12	29.953	45.0	55.0		54.4	54.1	56.0	44.1	35	2 W	0 haze
13	29.908	46.5	51.9		51.5	51.0	52.8	42.3	39	4 SE	5 Rs haze
14	29.593	53.0	65.4		65.4	64.9	66.8	59.2	66	2 W	7 Rs Fm
15	29.575	54.0	53.0		52.6	52.0	54.0	42.2	33	9 W	5 R Rm M Fm
16	29.520	49.2	57.8		57.9	56.9	58.6	48.5	47	10 S	10 R Pm
17	29.740	46.8	48.7		48.1	47.7	49.6	40.6	45	4 NW	3 M Fm
18	29.941	43.5	44.5		44.2	43.3	45.2	35.7	35	6 W	5 M Fm
19	30.072	45.8	43.3		43.6	42.0	44.0	35.8	44	4 W	10 Pm M Fm
20	30.140	43.4	47.4		47.0	46.2	48.0	37.0	29	6 W	0 M Fm
21	29.754	48.7	51.0		51.0	50.0	52.0	45.5	64	6 W	9 Pm M Fm
22	30.075	46.0	52.2		51.9	51.2	53.4	42.8	39	5 NW	1 M Fm
23	29.952	48.6	45.6		45.4	44.5	46.5	42.7	80	1 SE	10 Pm
24	30.112	45.0	48.1		48.3	47.1	49.8	44.6	71	1 SE	7 haze M Fm
25	30.214	47.8	43.5		42.9	42.2	43.7	35.9	46	7 E	9 Pm Rs M Fm
26	30.054	42.5	42.4		42.1	41.2	43.9	32.3	18	7 N	10 R M
27	29.927	45.0	54.0		53.7	53.1	55.1	41.6	25	6 NW	0 Rs
28	29.810	46.5	53.6		53.5	53.0	54.4	44.8	46	2 E	9 R Rs Rm
29	29.832	48.3	52.9		52.5	52.0	53.8	39.4	18	8 NW	0
30	29.616	49.2	‡49.9		51.2	‡49.1	51.3	46.0	72	3 W	10 Pm M Fm

4 P.M.

Date	Barometer	Attached Thermometer	Casella 3235		No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's Tables	Wind	Clouds
1	30.058	42.8	39.3		38.9		40.0	32.1	41	6 NW	10 Pm Fm
2	(30.291)	(45.4)	(49.7)		(49.1)		(50.2)	(38.3)	(27)	(4 NW)	(0)
3	30.038	42.5	40.4		40.2		40.6	38.0	88	1 S	10 Pm; fine rain; mist
4	29.589	41.3	33.7		33.0		34.5	32.6	96	10 N	10 R; snowing
5	29.878	39.2	36.1		36.1		37.0	33.4	79	10 N	10 Pm
6	29.848	45.2	45.0		44.7		45.6	35.7	33	9 W	1 Pm M Fm
7	29.620	46.9	50.0		49.8		50.6	40.0	36	10 SW	10 R
8	29.750	42.5	41.0		40.5		42.7	31.9	22	11 NW	0 Rs M Fm
9	29.832	40.9	39.4		38.9		40.0	31.5	38	15 W	0 Rs
10	29.906	43.6	46.4		46.0		47.0	37.6	39	9 NW	0 M Fm Rs
11	29.987	47.4	53.4		53.1		54.1	42.3	33	6 NW	2 Rs
12	29.913	53.4	61.3		61.2		62.1	45.5	19	6 NW	4 R Rs Fm
13	29.784	52.3	61.0		61.0		62.0	50.9	46	4 S	10 Pm Fm haze
14	29.526	56.8	65.5		65.5		65.7	62.0	86	1 S	10 Pm Fm; a little rain
15	29.608	56.9	54.2		54.4		55.0	43.6	37	13 W	9 Pm M Fm
16	29.517	52.7	46.0		46.1		47.0	44.4	89	3 W	10 R Pm Fm Rs
17	29.769	51.8	51.5		51.4		52.3	40.7	32	4 W	8 Fm M Pm
18	29.949	50.4	48.2		48.0		49.0	38.6	35	5 W	10 Pm M Fm
19	30.044	48.8	44.0		43.8		44.8	35.3	35	6 NW	10 Pm M Fm
20	(30.050)	(50.9)	(55.1)		(55.0)		(55.9)	(42.8)	(28)	(3 SW)	(0 Rs)
21	29.818	53.0	53.7		53.4		54.4	42.8	35	20 W	9 Pm M Fm
22	30.028	54.0	58.9		58.7		59.8	46.2	31	3 W	6 M Fm
23	29.928	49.8	49.7		49.5		50.4	44.0	64	8 NW	10 Pm M Fm
24	30.130	52.2	46.1		45.1		46.6	38.8	50	5 E	9 R Rs
25	30.196	50.5	41.5		40.7		41.8	34.1	44	8 E	10 Pm Rs Rm Fm
26	29.986	46.6	45.9		45.6		46.5	36.1	31	7 N	10 R Fm
27	29.912	53.3	51.8		51.2		52.0	40.4	31	4 E	3 R Rs
28	29.650	50.4	56.7		56.8		57.2	51.1	70	1 SE	10 Pm; raining
29	29.838	56.5	57.6		57.5		58.2	42.3	17	1 W	0
30	29.550	52.1	52.0		52.1		53.0	42.7	41	9 NW	10 Pm M Fm

Sums of columns, number of observations, means, and reduction of barometer to the freezing point.

	10 A.M.	4 P.M.
Barometer	897.080 30 29.903 −.042 29.861	895.993 30 29.866 −.055 29.811
Attached Thermometer	1322.8 30 44.1	1470.1 30 49.0
Casella 3235	1394.7 30 46.5	1475.1 30 49.2
No. 4	1386.5 30 46.2	1467.3 30 48.9
Minimum after setting	1363.7 30 45.5	
Dry bulb	1422.1 30 47.4	1496.0 30 49.9
Relative humidity	1479 30 49	1353 30 45
Wind	130 30 6.0	202 30 6.7
Clouds	161 30 5.4	201 30 6.7

Snow measured

April 5, at 11 A.M., in 10 places; depth 6, 8½, 6, 7, 6, 8½, 7½, 8, 8, 6, inches; mean 7.225 inches. 12 inches of this snow in cylinder of 8 inches across weigh 4 ounces. Hence rainfall of 1 inch of snow 0.27 inches; total rainfall due to snow 1.640 inches.

Rain of April 4, by gauge C at 5 P.M., 9 ounces; 0.793 inches. Hence total rainfall 10 A.M. April 4 to 10 A.M. April 5, 2.433 inches; probably not very accurate, but the best measure to be had.

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Harvard College Observatory. April 1876.

Date	External Thermometer No. 4 7 A.M.	2 P.M.	9 P.M.	Mean	Casella 3235 7 A.M.	2 P.M.	9 P.M.	Maximum after setting	Extreme temperatures Maximum set at 10 A.M.	Minimum set at 10 A.M.	Rainfall in inches. Gauge C. Examined at 10 A.M.	Remarks.
1	(36.5)	38.3	33.9	36.2	(37.0)	38.6	34.3	37.5	46.3	33.9	0.000	yl
2	31.3	46.9	39.0	39.1	32.0	47.4	40.0	39.0	40.8	28.0	0.000	rw
3	(35.3)	45.4	(36.4)	39.0	(35.6)	45.0	(37.0)	40.2	49.4	30.7	0.000	y Rain towards night.
4	37.2	36.1	*31.3	34.9	37.8	36.6	*31.7	37.0	47.3	34.9	1.456	y Rain, changing to snow after 2 P.M. {dropped hard following night}
5	31.5	36.9	(32.8)	33.7	32.3	37.0	(33.2)	32.6	37.3	29.4	†2.433	yl A little snow falling.
6	34.2	44.9	39.5	39.5	34.7	45.3	40.2	40.3	40.2	32.0	0.000	rw
7	33.9	52.3	38.4	41.5	34.7	52.6	39.0	45.7	46.0	30.1	0.000	y Rw SrBN Shower in the evening.
8	35.0	39.8	31.3	35.4	35.6	40.0	31.9	37.0	52.4	33.6	0.033	rbn
9	26.4	38.3	34.5	33.1	26.9	38.8	35.0	32.0	40.5	24.1	0.000	r Rl
10	33.3	45.1	38.3	38.9	33.8	45.7	39.0	39.7	40.0	30.2	0.000	r Rw
11	37.9	53.5	45.5	45.6	38.8	53.9	46.2	48.9	49.0	33.8	0.000	rw
12	38.4	61.8	50.9	50.4	39.4	61.9	51.6	54.0	54.6	34.5	0.000	rw
13	38.7	54.9	58.8	50.8	39.2	55.2	59.1	51.5	61.8	35.1	0.000	wz y< A little rain in the evening.
14	50.9	72.3	57.9	60.4	50.7	72.8	57.3	64.1	64.8	46.2	0.011	yw A little rain.
15	50.0	58.0			49.9	58.0	45.1	52.7	73.0	47.2	0.044	w Rr RyN
16	(51.5)	51.9	42.3	48.6	(51.7)	52.0	43.2	56.0	60.4	37.3	0.000	Ryw Showers 1 to 4 P.M., with hail about 3 P.M.
17	(40.8)	51.9	(41.4)	44.7	(41.6)	52.1	(41.2)	48.4	61.4	37.0	0.243	Rrw y< A10.
18	(39.1)	47.7	41.6	42.6	(40.0)	47.8	41.4	44.9	52.9	33.1	0.000	y Rl
19	37.2	(44.5)	40.0	40.6	37.8	(44.7)	40.7	43.3	48.6	36.2	0.000	yl
20	38.7	54.0	47.2	46.6	39.7	54.6	48.0	46.8	46.9	31.8	0.000	rw
21	(43.9)	54.2	(41.9)	46.7	(44.1)	54.3	(42.1)	50.6	55.0	41.4	0.077	y Rrw n<
22	40.1	58.5	50.0	49.5	40.9	58.5	50.2	52.2	55.5	36.0	0.000	Rrw
23	42.9	47.9	41.8	44.2	43.0	48.0	42.0	45.1	59.7	41.0	0.088	y y> A4. {A little rain previous night or early in the day}
24	37.0	45.7	42.3	41.7	37.2	46.2	43.9	48.2	49.1	33.1	0.000	yl
25	41.0	40.5	36.6	39.4	41.3	41.1	37.0	43.2	50.1	37.8	0.000	yl
26	38.2	43.0	42.4	41.2	38.4	43.6	43.0	42.0	43.8	33.9	0.000	yl
27	46.8	55.0	43.0	48.3	46.9	55.4	43.4	53.5	53.9	37.0	0.000	r Rw
28	40.8	55.9	45.3	47.3	41.7	55.8	45.1	53.5	59.6	34.2	0.000	y Rw Occasional showers.
29	44.0	57.8	(46.0)	49.3	45.0	58.0	(46.3)	52.7	58.0	38.1	0.077	Rrw Showers following night.
30	44.0	54.0	42.9	47.0	44.5	‡51.7	43.7	‡48.3	58.0	41.9	0.188	y Rw Occasional showers.
Sums	1176.5	1487.0	1212.6	1256.2					1556.3	1053.5	4.650	Rainfall for month 4.65 inches.
Means	39.2	49.6	41.8	43.3					51.88	35.12		Mean temperature " " {(mean of 3 means for 1, 2, 9)} 43.5 Fahrenheit.

Maximum " " " (April 15) 73.0 — "
Minimum " " " (April 9) 24.9 — " — *
— " — (reduced to standard of No. 4) 25.6 — " —

The velocity of the wind is merely estimated in miles per hour. See general remarks on observations of 1873.

Observations in parenthesis were not made at the regular times. The actual times are given below.

Date	Regular times.	Actual times.
1	7 A.M.	7½ A.M.
2	4 P.M.	3⅔ P.M.
3	7 A.M., 9 P.M.	7¼ A.M., 9¼ P.M.
5	9 P.M.	9½ P.M.
16	7 A.M.	7¼ A.M.
17	7 A.M., 9 P.M.	7¼ A.M., 10 P.M.
18	7 A.M.	7½ A.M.
19	2 P.M.	3¼ P.M.
20	4 P.M.	4½ P.M.
21	7 A.M., 9 P.M.	7½ A.M., 10 P.M.
29	9 P.M.	9⅙ P.M.

* April 4, 9 P.M. Snow on bulbs of thermometers.

† April 5. Rainfall obtained by measuring snow.

‡ April 30, 10 A.M. and 2 P.M. The dampness of the wood-work affects some of the thermometers.

The observations below were made at times when the cloth about the wetted bulb of the psychrometer seemed to be dry.

Date	Time A.M.	Dry bulb	Wet bulb	No. 4
10	9¼	39.1	37.6	38.0
12	7	40.2	38.4	38.4

The relative humidity for April has been computed after applying the corrections for error of the psychrometer given in the record for September, 1873.

It was noticed at 4 P.M. April 23 that the scale of the wet bulb thermometer has become considerably warped; and from subsequent observation it seems to vary in condition to some extent with the weather. This defect must make the instrument inaccurate, but perhaps not wholly useless. A new pair of graduated scales should be obtained to replace those of the present psychrometer, whenever they can be afforded.

Remarks.

Auroras noticed

None this month.

Zodiacal light.

April 11, 8 to 9 P.M. Zodiacal light rather bright, not apparently crossing the Milky Way.

April 12. Evening rather hazy; zodiacal light not noticeable.

* See min. therm. column above. (aug. 1882)

Observers: at 7 A.M. Dr. Waldo, except as follows: April 7, 10, 11, 12, 13, 16, A. Searle; 8, 9, W. C. Winlock; 14, 15, 23, 24, 25, 26, 27, A. P. Gibbs: at 9 P.M., Dr. Waldo except as follows: April 6, 7, 8, 9, 10, 11, 12, 25, 29, A. Searle; 13, 14, 15, 23, 24, 27, A. P. Gibbs: other observations by A. Searle.

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May 1876. Meteorological Record of

10 A.M.

Date	Barometer	Attached Thermometer	Casella 3235	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's Tables see note	Wind	Clouds
1	29.550	45.8	45.1	44.8	44.1	46.0	35.3	32	15 NW	2 M Fm
2	29.788	48.0	52.5	52.1	51.3	53.4	42.2	39	13 NW	2 M Fm
3	30.011	52.9	48.7	48.0	47.5	49.0	40.3	51	4 E	10 Pm M
4	30.106	46.7	49.0	48.7	47.8	50.2	41.9	55	0 SW	1 M Fm Rs
5										
6	30.118	49.8	51.1	50.9	50.1	51.9	49.4	96	3 E	10 Pm; a little rain
7	29.974	53.1	62.7	62.8	62.2	64.1	58.5	78	1 NW	2 haze
8	29.854	58.8	55.7	55.4	55.2	56.5	52.4	85	5 E	9 R M Fm haze
9	29.790	54.7	56.2	56.5	55.3	57.4	55.6	99	0 SE	10 Pm
10	29.770	55.3	56.0	56.7	55.6	57.4	55.2	97	0 W	10 Pm; some rain
11	29.730	55.5	57.0	56.8	56.0	58.1	49.0	56	14 W	9 Pm M Fm
12	30.097	51.9	51.4	51.5	50.3	52.2	46.8	76	1 S	10 Pm Fm; raining
13	29.944	50.5	56.6	56.7	55.6	57.7	48.8	57	4 W	7 M Fm haze
14	30.134	51.4	55.4	55.4	54.3	56.5	45.5	44	5 W	6 M Fm
15	30.238	52.5	54.7	54.8	53.8	55.6	45.9	51	2 S	10 Pm
16	30.361	50.9	55.9	56.0	55.2	57.0	45.0	39	3 NE	5 R Rs
17	30.448	52.9	61.6	61.6	61.0	62.9	49.7	39	3 S	1 haze Rs
18	30.108	53.0	52.5	52.7	51.2	53.4	51.0	97	4 S	10 Pm Fm; raining
19	30.022	56.4	64.8	64.8	64.0	65.8	53.3	44	9 NW	4 M Fm Rs
20	30.200	57.0	63.0	63.2	62.4	64.2	52.0	45	3 E	1 Rs haze
21	29.982	58.8	66.9	67.8	66.0	68.0	60.2	63	3 S	10 Pm
22	29.700	65.8	79.0	79.8	78.3	80.3	69.6	61	4 W	10 Pm Fm haze
23	30.074	57.2	46.8	46.8	45.6	47.6	40.7	62	8 NW	10 Pm Fm
24	30.181	53.8	60.7	60.7	59.9	62.1	51.8	52	1 SW	0
25	29.940	64.1	71.9	72.1	71.2	73.2	58.3	40	5 SW	4 Rs M Fm
26	30.168	55.5	57.9	57.7	57.1	58.9	46.9	41	3 E	0 haze Rs
27	29.956	58.0	72.5	73.0	71.8	73.4	61.2	51	3 SW	0 haze
28	29.942	63.1	76.5	77.1	75.7	77.6	67.1	60	3 SW	2 haze Fm
29	29.798	66.2	75.4	75.8	74.9	76.9	66.2	59	1 SW	7 Pm Fm haze
30	30.067	58.2	56.7	56.4	55.7	57.8	47.0	46	6 NE	4 Fm M
31	30.306	55.0	63.4	63.6	62.8	64.3	52.0	44	4 SE	0 haze Rs Fm

4 P.M.

Date	Barometer	Attached Thermometer	Casella 3235	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's Tables see note	Wind	Clouds
1	29.605	49.9	45.0	44.4		45.7	36.2	40	15 NW	9 Pm M Fm Rs.
2	29.898	53.6	52.0	51.6		52.4	41.0	36	6 E	9 Pm Fm
3	30.031	53.8	41.3	40.7		41.8	36.4	69	5 E	10 Pm Fm
4	30.096	55.0	47.9	46.9		48.5	40.9	57	4 E	10 Pm
5	30.262	52.6	50.0	49.4	48.3	50.3	46.1	83	3 E	10 Pm
6	30.057	52.4	55.6	55.9		56.5	53.2	90	6 NW	10 Pm
7	(29.798)	(59.8)	(71.6)	(71.7)		(73.1)	(64.6)	(67)	(3 E)	(4 R Rs haze)
8	29.783	61.1	54.0	53.6		54.7	51.1	88	5 E	10 Pm
9	29.781	56.0	54.5	54.8		55.6	53.4	97	4 N	10 Pm; raining
10	29.722	58.3	58.0	57.6		58.4	53.9	82	4 E	10 Pm M Fm Rs
11	29.879	57.6	58.0	57.9		58.9	45.9	36	8 NW	10 Pm M Fm
12	29.894	52.8	46.9	46.1		47.3	44.9	97	3 E	10 Pm; fog and fine rain
13	29.902	57.6	60.3	60.4		61.1	46.2	29	9 W	5 M Fm
14	30.080	57.0	59.3	59.4		60.2	46.2	33	6 W	9 R Rs Fm
15	30.196	55.4	53.0	52.8		53.7	46.2	63	2 E	10 Pm; a few drops of rain
16	30.330	58.3	57.8	57.4		58.3	45.3	35	2 E	4 R Rs haze
17	30.363	58.5	58.1	58.2		59.0	46.3	37	6 S	6 Pm Rm Rs Fm
18	29.999	55.0	59.8	60.3		61.0	56.7	84	5 W	10 Pm Fm
19	30.001	62.1	69.2	69.4		70.1	54.7	35	9 NW	1 M Fm
20	30.129	64.0	62.2	62.1		63.0	51.1	45	5 E	8 R Rs haze
21	(29.847)	(63.4)	(69.9)	(70.7)		(70.7)	(63.3)	(70)	(3 S)	(9 R; thin)
22	29.644	70.0	80.7	81.3		81.3	70.2	60	12 SW	7 M Fm Rs
23	30.081	61.1	58.0	57.9		58.9	47.2	43	5 NW	0 Fm
24	30.076	62.4	63.0	63.0		64.0	51.9	45	4 E	1 haze
25	29.900	69.0	73.4	73.8		74.3	56.9	33	7 NW	7 M Fm
26	30.049	62.6	60.0	59.8		61.0	49.4	45	4 E	1 haze
27	29.903	66.4	80.0	80.9		81.0	62.4	33	6 SW	1 M Fm haze
28	29.871	69.2	81.9	82.5		82.6	65.6	39	7 SW	2 M Fm haze
29	29.725	74.0	80.0	81.2		81.0	65.9	45	6 SW	9 Pm M Fm R haze
30	30.163	64.8	55.0	54.0		55.4	44.2	41	6 SE	0 Rs haze
31	30.262	63.0	59.7	59.4		60.5	49.7	49	5 E	0 haze

Sums of columns, number of observations, means, and reduction of barometer to the freezing point.	10 A.M.	4 P.M.
Barometer	900.357	929.327
	30	31
	30.012	29.978
	−.071	−.085
	29.941	29.893
Attached Thermometer	1652.8	1856.7
	30	31
	55.1	59.9
Casella 3235	1777.3	1876.1
	30	31
	59.2	60.5
No. 4	1780.2	1875.1
	30	31
	59.3	60.5
Minimum after setting	1751.9	
	30	
	58.4	
Dry bulb	1809.4	1900.3
	30	31
	60.3	61.3
Relative humidity	1759	1706
	30	31
	59	55
Wind	130	175
	30	31
	4.3	5.6
Clouds	166	202
	30	31
	5.5	6.5

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Harvard College Observatory. May 1876.

Date	External Thermometer No. 4 7 A.M.	2 P.M.	9 P.M.	Mean	Observations for error of psychrometer made at times when both bulbs seemed to be dry. Time	Dry bulb	Wet bulb	No. 4	Maximum after setting	Extreme temperatures Maximum set at 10 A.M.	Minimum set at 10 A.M.	Rainfall in inches. Gauge C. Examined at 10 A.M.	Remarks.
1	40.1	45.4	(41.8)	42.4					45.0	54.0	36.3	0.143	rln y< A g. ny A 10. r ll.
2	46.2	56.7	48.4	50.4					52.1	52.3	40.8	0.000	Rrl yN. yU.
3	44.4	42.9			9 7/12 A.M.	50.3	48.4	48.9	48.4	57.7	42.9	0.000	y Rd
4		49.4	44.2		9 A.M.	46.0	44.7	45.5	48.9	48.8	32.1	0.000	Rrw yl<
5	46.4	51.4	46.6	48.1	9 A.M.	50.0	48.4	49.3	(49.3)	(54.7)	(39.8)	(0.011)	yi
6	(47.2)	59.3	51.4	52.6					50.4	50.4	42.0	0.099	yi A little rain at times.
7	51.3	64.7	52.2	56.1					62.0	62.6	48.0	0.088	vw RrN. yU. {Showers towards night, with a little thunder and lightning.}
8	(53.7)	56.3	48.7	52.9	9 2/3 A.M.	57.4	55.9	56.4	56.0	78.5	50.1	0.077	yz yz Evening rainy.
9	(52.8)	56.4	51.2	53.5					55.1	57.9	47.1	0.287	ya Gentle rain most of the day.
10	52.0	66.0	(51.9)	56.6					55.1	56.2	46.9	0.773	yw Some rain. Sr A 6.
11	51.0	56.3	49.5	52.3	9 5/12 A.M.	57.6	56.1	56.5	56.7	*64.0	47.8	0.044	yw RrE SrB 10½.
12	48.9	48.3	46.0	47.7					51.8	58.6	41.8	0.022	ya Frequent rain
13	46.1	60.1	47.2	51.1	8 11/12 A.M.	55.4	54.0	54.3	55.9	56.2	39.9	0.044	Ryw
14	(49.1)	59.1	51.4	53.2	3 11/12 P.M.	60.4	58.9	59.4	55.0	61.0	42.2	0.000	Rrw y< y> U.
15	47.0	55.3	47.4	49.9	9 2/3 A.M.	55.3	53.7	54.2	54.3	59.0	43.4	0.000	y Rl A little rain after noon.
16	44.3	57.4	48.3	50.0	9 1/2 A.M.	56.0	54.6	55.2	55.8	59.3	37.1	0.011	Rwya
17	47.2	64.8	48.1	53.4	8 5/6 A.M.	60.0	58.5	58.4	60.9	61.2	39.2	0.000	Raz yU.
18	51.6	55.0	56.2	54.3	9 A.M.	54.6	52.9	53.6	51.2	64.1	46.7	0.143	ya Rain beginning about 9 1/12 A.M. r ll.
19	59.6	69.4	60.8	63.3	9 11/12 A.M.	65.5	63.9	64.5	64.0	64.3	51.1	0.221	rw
20	57.0	62.1	56.4	58.5	9 11/12 A.M.	64.5	63.1	63.2	62.5	69.0	48.0	0.000	rw Hy<
21	(57.5)	69.6	60.2	62.4	9 1/2 A.M.	66.5	65.2	66.4	65.7	66.4	52.2	0.000	yw y Shower in the forenoon.
22	(70.8)	82.6	64.9	72.8	9 7/12 A.M.	79.8	78.8	78.8	77.4	78.5	56.1	0.077	y p Slight thunder shower about 5¼ P.M. {Smart thunder & heavy shower about 9 P.M.}
23	42.2	55.2	49.8	49.1	9 3/4 A.M.	46.8	45.1	45.8	46.9	84.0	40.1	0.894	yh y> A 11. rN
24	47.6	66.2	57.2	57.0	8 5/6 A.M.	58.1	57.0	57.6	60.5	60.7	39.7	0.000	rw
25	60.4	74.5	56.1	63.7	9 5/6 A.M.	57.7	56.1	57.2	71.0	71.8	52.2	0.000	w Rr
26	48.6	59.0	52.5	53.4					58.3	76.2	42.0	0.000	wz
27	58.0	81.1	66.8	68.6					71.4	72.1	47.7	0.000	Rhz
28	64.8	83.4	67.0	71.7	9 2/3 A.M.	76.2	75.2	75.9	75.4	80.9	58.3	0.000	Rha
29	66.9	83.6	62.1	70.9	7 3/4 A.M.	67.7	66.1	67.1	74.8	†78.0	59.9	0.000	hyz Thunder shower about 8 P.M.
30	49.3	55.4	46.5	50.4	9 A.M.	56.0	54.8	54.9	56.7	82.9	47.4	0.132	ll
31	50.3	58.2	51.3	53.3	9 5/6 A.M.	64.2	62.7	63.3	62.7	63.0	39.5	0.000	rw Rz
Sums	1552.3	1905.1	1582.1	1619.6						2004.3	1398.0	3.065	Rainfall for month 3.07 inches
Means	51.7	61.5	52.7	55.8						64.66	45.09		Mean temperature " " {mean of 3 times by 7, 2, 9} 53.3 Fahrenheit. Maximum " " " 84.0 " " ; May 23. Minimum " " " 32.1 " " ; May 4. — " — (reduced to standard of Vol.) 33.0 " —

The velocity of the wind is merely estimated in miles per hour. See general remarks on observations of 1873.

The vane and anemometer were taken down from the barn May 27, before 10 A.M., on account of the sale of that building, where they were mounted Jan. 31, 1875.

Observations in parentheses ( ) were not made at the regular times. The actual times are given below.

Date	Regular times	Actual times
1	9 P.M.	9 1/3 P.M.
6	7 A.M.	7 1/2 A.M.
7	4 P.M.	3 1/2 P.M.
8	7 A.M.	7 1/2 A.M.
9	7 A.M.	7 2/3 A.M.
10	9 P.M.	8 A.M.
14	7 A.M.	9 1/4 P.M.
21	7 A.M., 4 P.M.	7 1/4 A.M., 5 P.M.
22	7 A.M.	8 A.M.

May 21. Scale of dry bulb thermometer seems to be very slightly warped. Appearance of wet bulb as last month; see note of April 23, 1876.

Computation of relative humidity deferred until the collection of more data for determining the error of the psychrometer.

Relative humidity computed at the close of the year as explained in the general remarks on the observations of 1876.

Auroras noticed.

None this month.

Zodiacal light

looked for May 11, 8 to 9 P.M.; none visible; but sky hazy.

* May 11. Maximum probably low on account of the dampness (May 10) of the woodwork.

† May 29. Error suspected in reading maximum; (No. 4 at 2 P.M. May 28 was 83.4). Perhaps the true maximum reading was 83.0.

Observers: at 7 A.M. and at 9 P.M. except May 1, L. Waldo or F. Waldo.
Other observations by A. Searle.

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June 1876. Meteorological Record of

10 A.M.

Date	Barometer	Attached Thermometer	Capella 3235	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's Tables (see note)	Wind	Clouds
1	30.114	54.8	65.3	65.6	64.9	66.6	54.2	45	3 E	2 haze
2	(29.901)	(56.0)	(59.6)	(60.3)	(59.2)	(60.0)	(52.2)	(64)	(2 E.)	(10 Pm haze)
3	29.811	63.0	77.0	77.9	76.2	78.2	67.7	60	4 S	1 Rs Rm haze
4	29.855	66.7	73.9	74.7	73.3	75.0	69.8	82	0 S	10 Pm Fm
5	29.846	60.0	53.4	53.6	52.3	54.5	51.8	94	0 W	10 Pm; raining
6	29.893	61.4	67.1	67.8	66.5	68.4	60.9	69	2 W	7 Pm M Fm Rs
7	30.063	62.1	67.1	67.4	66.5	68.2	56.3	49	8 NW	0 haze Fm
8	30.198	63.0	58.6	60.8	59.0	61.2	54.9	73	0 SE	9 Pm M Fm
9	30.101	67.4	78.8	79.2	78.0	79.9	70.0	64	9 S	1 Rs Fm haze
10	30.106	68.2	74.3	75.5	73.3	76.0	69.4	76	4 W	9 Pm Fm haze
11	30.199	71.0	73.6	74.4	73.0	74.3	67.2	74	3 NE	6 Pm Fm M Rs
12	30.311	65.6	59.4	59.5	58.6	60.4	57.6	94	2 NE	10 Pm mist
13	30.270	64.0	70.0	71.4	69.6	71.5	66.2	81	0 calm	10 Pm haze
14	30.204	67.8	78.5	79.0	78.0	79.9	70.3	65	4 SW	4 Pr Rs M Fm
15	30.172	69.0	79.0	79.7	78.4	80.1	71.0	68	5 NW	4 Pr Rs Fm
16	30.246	71.1	81.0	81.6	80.3	82.0	69.5	55	4 SW	0 Rs
17	30.235	72.0	78.2	79.9	77.9	78.8	69.1	64	5 S	10 Pm M Fm
18	30.194	72.7	83.0	83.4	82.2	84.1	71.6	56	7 S	6 M Fm
19	30.103	73.0	74.7	77.3	75.9	77.5	72.2	82	5 SW	10 Pm M Fm Rs
20	30.098	73.7	77.8	79.1	77.0	78.7	67.7	59	9 W	10 Pm Fm Rs M
21	29.965	73.6	75.9	76.7	75.2	76.5	69.6	75	4 S	10 Pm Fm
22	29.943	69.0	70.5	71.2	69.8	71.5	59.9	52	5 W	10 Pm M Fm
23	29.896	67.4	74.9	74.9	74.2	76.0	60.5	40	2 NW	0 M Fm Rs
24	29.743	71.5	80.8	81.6	80.0	81.8	68.8	53	6 NW	9 Pm Fm
25	29.680	74.8	83.2	83.6	82.7	84.0	67.4	42	6 W	4 Rs
26	29.788	73.1	80.2	80.7	79.9	81.2	70.4	61	5 N	0 Rs Fm
27	29.899	74.8	85.7	86.8	85.1	87.0	75.4	60	3 SW	7 Pr Rs Rm
28	29.927	77.0	83.0	83.7	82.7	84.0	72.7	61	4 W	1 M Fog Rs
29	30.046	75.7	78.0	79.7	77.3	79.2	68.6	61	1 SE	10 Pm Fm haze
30	30.050	75.0	77.8	78.8	77.0	78.7	68.2	61	1 NW	10 Pm

4 P.M.

Date	Barometer	Attached Thermometer	Capella 3235	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's Tables (see note)	Wind	Clouds
1	30.034	63.7	61.8	61.6		62.8	48.2	32	5 E	2 Pr Rs haze
2	29.850	65.6	64.6	64.2		65.3	58.5	72	4 E	1 Rs Fm haze
3	29.792	70.7	83.7	84.4		84.3	72.2	58	6 SE	3 Pm M Fm haze
4	29.871	71.4	63.0	63.0		63.3	57.7	77	6 E	9 Pr Rs M
5	29.832	62.1	62.5	63.4		63.7	58.9	82	0 calm	10 Pm fog
6	29.910	67.0	62.7	62.7		63.3	58.8	83	5 E	10 Pm Fm M
7	30.070	67.7	72.7	73.1		73.6	57.5	35	8 NW	6 M Fm
8	30.107	68.7	70.0	70.2		71.0	62.0	63	5 NE	10 Pr Pm M Fm
9	30.054	72.9	83.5	83.8		84.0	69.4	49	10 SW	1 Pr Rs M haze
10	30.069	75.0	81.9	82.7		83.7	71.6	57	4 SW	9 Pm M Fm
11	30.238	73.5	65.8	65.2		66.1	60.0	75	5 E	10 Pm
12	30.292	66.2	60.0	60.7		61.4	58.1	90	0 E	10 Pm; mist and rain
13	30.235	70.2	74.4	75.2		75.2	69.5	80	3 SE	10 Pm M Fm
14	30.140	73.7	78.8	78.9		80.0	70.8	67	2 SE	5 M Fm Rs
15	30.170	77.0	83.0	83.1		84.0	72.6	60	4 SE	7 Pr Rs M Fm
16	30.210	77.0	83.1	83.7		83.9	68.0	45	5 S	1 M Rs
17	30.199	77.2	80.2	81.1		83.2	70.6	56	6 S	5 M Fm
18	30.167	76.7	80.3	81.1		81.0	70.6	62	9 S	10 Pm M Fm
19	30.050	78.3	82.9	83.6		83.7	73.0	62	8 S	7 M Fm Rs
20	29.986	78.6	80.0	80.6		80.8	70.6	63	5 SE	6 Pm M Fm Rs
21	29.856	76.4	74.7	76.1		76.5	70.1	77	4 S	8 Pm M Fm Rs
22	29.880	74.0	73.5	74.2		74.2	58.0	36	7 NW	7 Pm M Fm
23	29.804	74.4	79.0	79.4		79.8	63.4	40	9 W	5 M Fm Rs Rm
24	29.652	77.8	88.2	88.7		88.9	71.1	42	8 SW	5 M Fm
25	29.722	79.8	68.7	71.6		68.2	65.4	94	10 W	10 Pm Fm; raining
26	29.818	80.4	80.5	80.8		80.9	69.3	58	3 SE	2 M Fm
27	29.827	82.2	84.0	84.5		84.5	74.0	64	10 S	6 Pr Rm Fm Rs
28	29.944	82.7	88.2	88.5		89.0	70.0	38	5 NW	6 Rs Fm
29	30.049	79.2	77.5	77.7		77.8	63.1	44	3 SE	10 Pm Fm
30	30.007	80.3	85.9	86.5		86.6	71.8	50	4 SW	6 M Fm Rs

Sums of columns, number of observations, means, and reduction of barometer to the freezing point.

	10 A.M.	4 P.M.
Barometer	900.857 30 30.029	899.835 30 29.995
	— .107 29.922	— .122 29.873
Attached Thermometer	2054.4 30 68.5	2220.4 30 74.0
Capella 3235	2220.3 30 74.0	2275.1 30 75.8
No. 4	2245.8 30 74.9	2290.3 30 76.3
Minimum after setting	2204.0 30 73.5	
Dry bulb	2255.2 30 75.2	2300.7 30 76.7
Relative humidity	1940 30 65	1811 30 60
Wind	113 30 3.8	163 30 5.4
Clouds	190 30 6.3	197 30 6.6

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Harvard College Observatory. June 1876.

Date	External Thermometer No. 4 7 A.M.	2 P.M.	9 P.M.	Mean	Time	Observations for error of psychrometer, made at times when both bulbs second the day: Dry bulb	Wetted bulb	No. 4	Maximum after setting	Extreme temperatures: Maximum set at 10 A.M.	Minimum set at 10 A.M.	Rainfall in inches. Gauge C examined at 10 A.M.	Remarks
1	50.7	60.6	49.8	53.7	9 11/12 A.M.	66.6	65.1	65.6	64.7	65.0	41.0	0.000	wz
2	52.6	65.4	53.6	57.2	8 1/12 "	61.1	59.9	60.2	(59.4)	(65.4)	(43.0)	(0.000)	Hy y > A 3.
3	62.5	80.3	66.4	69.7	8 5/12 "	73.2	72.2	73.5	75.0	76.9	51.6	0.000	h Ry
4	66.1	74.8	51.0	64.0	8 5/6 "	73.1	71.0	73.7	78.0	83.7	61.1	0.143	y s w > A 2. Some showers.
5	50.2	59.2	*52.7	54.0	8 1/2 "	52.9	50.6	51.7	53.0	81.0	47.9	0.177	y Rl Forenoon rainy.
6	59.2	65.2	57.8	60.7	7 1/6 "	60.8	59.2	60.8	67.0	67.2	52.4	0.121	Rys A few drops of rain towards night.
7	(61.7)	72.2	60.9	64.9	7 3/4 "	63.2	61.8	62.5	67.0	72.0	54.0	0.000	w Rr
8	57.6	68.4	(66.8)	64.3	8 1/6 "	64.4	63.0	63.8	57.7	72.2	50.0	0.066	yw Short shower about 9 1/4 A.M.
9	69.7	85.4	68.7	74.6	2 1/12 P.M.	86.2	85.1	85.4	76.9	78.3	59.0	0.000	Rehr
10	65.6	82.9	71.3	73.3	7 1/4 A.M.	67.5	65.8	66.6	72.1	†84.3	61.8	0.044	yrh
11	67.5	65.2	57.7	63.5	9 1/2 "	75.0	73.6	74.9	73.0	83.2	63.4	0.000	Ryh h > y <
12	(57.9)	59.2	57.1	58.1	9 "	60.5	58.9	59.6	59.6	73.6	55.2	0.022	y Rl Some rain.
13	59.3	68.6	(65.8)	64.6	9 3/4 "	71.6	70.6	71.0	69.7	69.8	56.3	0.033	y Rh Frequent showers.
14	68.9	74.4	67.9	70.4	8 1/2 "	75.5	74.6	‡76.2	77.8	78.2	61.5	0.011	Rrh
15	68.9	85.9	71.3	75.4	8 1/8 "	74.0	73.0	74.1	78.0	81.0	61.1	0.000	h Sy
16	70.2	85.3	68.5	74.7	7 1/2 "	73.4	71.9	72.3	80.0	86.3	61.6	0.000	rh
17	69.6	82.2	(69.8)	73.9	7 3/4 "	75.0	73.0	73.7	77.7	85.5	64.1	0.011	y Rh y > A 2.
18	74.1	84.4	71.7	76.7	9 1/2 "	83.3	82.1	82.4	81.0	82.5	67.0	0.011	y Rh
19	68.8	84.5	72.5	75.3	9 3/4 "	78.1	76.6	77.6	73.5	85.0	66.5	0.099	y Rh A little rain early.
20	71.8	84.5	70.8	75.7	8 1/3 "	78.4	77.6	79.9	77.1	83.7	65.0	0.022	y h A little rain
21	75.2	79.9	68.1	74.4	9 11/12 "	77.1	76.0	77.2	75.3	85.0	66.1	0.000	by Rh {showers during the forenoon; heavy shower for about 10 minutes about 2 1/2 P.M.}
22	63.6	74.2	63.9	67.2	8 1/2 "	70.0	68.8	70.0	70.2	76.7	55.6	**0.265	yw
23	63.3	80.3	(69.3)	71.0	8 1/2 "	71.7	70.7	72.2	74.0	75.4	54.3	0.000	Rrh
24	(71.1)	87.3	(75.9)	78.1	7 11/12 "	75.8	74.4	75.3	79.9	80.4	61.5	0.000	h Ra
25	(78.6)	86.8	(68.7)	78.0	9 5/6 "	84.0	82.9	83.5	82.3	88.4	67.6	0.000	Rhr y < {Thunder showers; heaviest about 4 P.M.} {10 1/2 P.M.} Sr 84 9/12.
26	72.0	84.6	(74.0)	76.9	7 7/12 "	75.2	73.8	74.0	78.2	87.0	62.9	0.485	h Rr.
27	71.3	88.4	72.7	77.5	8 "	77.1	76.0	77.5	84.0	85.3	63.2	0.000	h Ry Thunder showers in the evening.
28	76.4	88.3	76.7	80.5	8 7/12 "	82.1	81.1	82.7	81.7	89.8	69.1	0.397	h Rr
29	69.8	79.1	(69.9)	72.9	9 7/12 "	78.8	77.8	79.1	77.5	87.9	67.1	0.011	y h
30	72.5	86.4	73.3	77.4	7 1/4 "	73.3	72.0	73.0	77.2	80.4	65.0	0.000	y h
Sums	1986.7	2323.9	1984.6	2098.6						2391.1	1775.9	1.918	Rainfall for month 1.92 inches
Means	66.2	77.5	66.2	70.0						79.70	59.20		Mean temperature " " 70.0 Fahrenheit
													Maximum " " " 89.8 " ; June 28.
													Minimum " " " 41.0 " ; June 1.
													" (reduced to standard of No. 4) 39.6 " "

The velocity of the wind is merely estimated in miles per hour. See general remarks on observations of 1873.

The vane and anemometer taken down May 27, 1876, were set up on the West Wing between 10 A.M. and 4 P.M. June 9, 1876.

Computations of relative humidity deferred until the collection of more data for determining the error of the psychrometer.

Relative humidity computed at the close of the year as explained in the general remarks on the observations of 1876.

Auroras noticed.

None this month.

Observations in parentheses ( ) were not made at the regular times. The actual times are given below.

Date	Regular times	Actual times
2	10 A.M.	9 A.M.
7/8	7 A.M.	7 1/2 A.M.
12	9 P.M.	9 2/3 P.M.
13	9 A.M.	9 1/4 A.M.
17	9 P.M.	9 3/4 P.M.
23	9 P.M.	10 P.M.
24	9 P.M.	9 1/2 P.M.
25	7 A.M., 9 P.M.	7 1/2 A.M., 9 1/2 P.M.
26	9 P.M.	7 1/2 A.M., 9 1/2 P.M.
29	9 P.M.	9 3/4 P.M.

* June 5, 9 P.M. Original record gives a reading of Casella 3235, 57.6, as well as one of No. 4, 52.7; probably both should be 52 or both 57.

† June 10, 10 A.M. If the reading of the maximum, the tenth is uncertain; perhaps the reading was 84.8

June 3, 9 P.M. Double lunar halo, well developed.

‡ June 14, 8 1/2 A.M. No. 4, being nearest the east side of the shelter, is likely to be warmer than the others in the morning.

§ June 21, 2 P.M., 4 P.M.; readings of Casella 3235 75.0 and 74.7 at these times; day showery, and shelter may be damp.

P June 25, 4 P.M. Thunder shower at this time.

** June 22, 10 A.M. No rain had fallen since 4 P.M. June 21, when the gauge was last examined.

Observers at 7 A.M. and 9 P.M. L. or F. Waldo; at other times, A. Searle.

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July 1876. Meteorological Record of

10 A.M.

Date	Barometer	Attached Thermometer	Casella 3235		No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's Tables (see note)	Wind	Clouds
1	30.100	75.0	77.6		78.6	76.9	78.4	65.3	50	0 N	9 Pr Rs Fm; thin
2	29.945	77.1	86.0		86.9	85.3	86.9	77.1	67	5 SW	9 Pm M Fm Rs haze
3	29.865	80.0	78.2		80.8	77.0	80.7	76.7	89	4 SW	10 Pm Fm; raining
4	30.024	78.0	87.7		88.2	87.1	89.0	74.4	52	6 SW	0 Rs
5	30.066	79.2	82.0		82.8	81.2	83.0	69.0	50	1 N	6 Rs Pm M Fm haze
6	29.874	78.4	78.0		78.6	77.5	79.0	65.0	48	11 NW	6 M Fm
7	30.128	74.7	78.0		78.2	77.5	79.0	64.8	47	2 E	4 M Fm Rs
8	29.940	77.0	84.1		84.3	83.4	85.0	71.6	53	7 N	2 Pr Rs Fm
9	29.902	80.7	74.4		74.3	73.5	75.1	63.6	55	6 NE	5 Pm M Fm Rs
10	30.016	76.6	81.5		83.0	81.1	82.8	71.1	58	4 SW	3 Rs Fm haze
11	30.041	79.4	87.0		87.5	86.6	88.0	77.0	63	1 NW	1 Rs Fm
12	30.042	79.5	81.2		82.6	80.8	82.2	75.6	78	1 N	9 Pm M Fm
13	29.999	80.3	86.5		86.8	86.0	87.5	75.4	59	2 NW	0 Rs Fm
14	29.933	81.0	81.9		82.4	81.7	82.5	72.8	66	3 E	5 Pr Rm Rs Fm
15	29.920	77.9	81.0		81.6	80.5	82.0	69.1	54	6 NE	3 Rs Fm
16	30.169	74.2	79.7		79.9	79.1	80.7	64.4	41	2 NW	0 Rs
17										*6 SW	*0 Rs haze
18	30.061	79.2	84.8		85.2	84.1	85.7	74.5	61	7 SW	4 Pm Fm Rs haze
19	30.055	82.0	86.6		86.6	85.9	87.5	73.4	52	4 NE	1 M Fm Rs
20	29.965	81.1	90.1		90.8	89.9	91.1	74.9	48	8 SW	1 Pm Fm Rs
21	29.915	81.5	82.8		82.9	82.0	83.8	72.4	60	10 N	8 Pr Pm M Fm Rs
22	30.207	74.1	72.2		72.1	71.0	72.1	58.1	43	5 SE	0 Fm Rs haze
23	29.878	70.1	64.6		64.5	63.7	66.4	63.8	94	2 S	10 Pm Fm
24	29.828	68.0	69.1		69.1	68.6	70.3	60.4	59	6 NW	3 M Fm
25	29.978	67.8	70.8		70.7	70.0	71.8	60.3	53	2 W	1 Rs M Fm
26	30.122	67.4	65.3		65.6	64.6	66.6	57.7	61	3 N	4 Pm M Fm
27	30.267	65.8	72.0		72.3	71.3	73.4	61.6	52	1 S	9 Pr Rs M Fm; thin
28	30.088	71.0	76.2		76.8	75.8	77.3	66.0	57	8 SW	4 Pm Fm Rm Rs
29	29.917	74.5	77.8		78.1	76.9	78.6	68.3	62	6 NW	9 Pm M Fm Rs
30	30.087	72.8	72.0		71.9	71.1	72.8	61.8	55	3 E	10 Pm Fm
31	29.955	67.9	59.9		59.8	59.0	61.4	59.0	96	5 NE	10 Pm; raining

4 P.M.

Date	Barometer	Attached Thermometer	Casella 3235		No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's Tables (see note)	Wind	Clouds
1	30.067	80.4	83.0		83.9		83.5	67.7	44	3 SW	7 Pr Rs Fm M
2	29.896	83.7	93.6		94.4		94.4	75.9	43	7 SW	6 Pm M Fm
3	29.843	84.2	87.9		88.2		88.7	72.9	48	9 SW	4 M Fm
4	29.930	83.0	90.2		90.8		90.9	73.2	43	8 SW	1 Rs M Fm
5	29.978	84.3	80.1		80.0		80.9	69.3	58	5 E	5 Rs Pm M Fm
6	29.958	80.6	80.1		80.2		81.0	63.9	38	7 NW	5 M Fm
7	30.102	81.1	79.0		79.5		79.4	66.3	51	3 SE	10 Pm
8	29.916	83.9	91.0		91.8		91.8	73.4	41	2 NW	7 Pr Rs M Fm
9	29.954	84.0	72.8		72.5		73.1	63.5	62	4 E	5 Pr Pm Rs Fm
10	29.956	83.4	87.8		88.3		88.3	74.3	53	12 S	5 Pr Rs M Fm
11	30.090	84.9	74.9		75.5		75.3	73.5	99	0 calm	10 Pm; raining
12	30.000	84.7	82.3		82.4		82.6	73.5	68	5 E	2 M Fm haze
13	29.967	86.1	91.8		92.2		92.5	74.2	42	2 W	1 Rs M Fm
14	29.885	85.8	74.6		75.1		75.4	70.2	83	3 S	8 Pm M Fm
15	29.951	82.7	78.1		78.2		78.7	63.2	42	5 E	0 M Fm
16	30.151	82.1	86.0		86.4		86.9	67.0	34	4 W	1 Rs Fm M
17	30.156	82.8	89.8		90.2	89.2	90.3	70.7	37	10 SW	2 M Fm haze
18	29.994	86.0	92.0		92.6		92.9	77.8	52	6 SW	3 M Fm Rs haze
19	30.065	87.0	82.7		82.4		82.8	70.0	54	4 SE	1 M Fm haze
20	29.836	86.7	90.0		90.6		90.7	79.8	64	11 S	5 Pr M Fm
21	29.995	84.0	83.5		83.7		84.2	66.3	38	11 NW	4 M Fm Rs
22	30.130	79.2	70.2		70.2		70.6	59.5	54	4 E	0 Rs Fm haze
23	29.816	73.0	64.1		64.4		65.4	63.4	98	2 E	10 Pm; raining
24	29.855	73.3	73.7		73.8		74.4	58.5	37	6 NW	6 Pr Rs M Fm
25	30.018	74.0	73.0		73.3		73.8	55.6	28	8 SW	1 M Fm Rs
26	30.140	73.0	70.5		71.0		71.3	59.4	51	3 NW	3 Rs M Fm
27	30.195	73.3	73.8		73.6		74.9	63.3	52	4 E	8 Rs M Fm
28	30.003	76.8	80.3		80.7		81.1	70.3	61	14 S	7 Pr Rs M Fm
29	29.926	79.1	79.6		79.7		80.4	68.0	55	5 NW	9 Pm Pr M Fm Rs
30	(30.052)	(75.8)	(71.1)		(70.8)		(71.5)	(62.3)	(62)	(4 E)	(10 Pm Fm)
31	29.963	68.0	61.9		61.9		63.0	60.2	93	4 NE	10 Pm

Sums of columns, number of observations, means and reduction of barometer to the freezing point

	10 A.M.	4 P.M.
Barometer	900.287	929.788
	30	31
	30.010	29.993
	−.126	−.141
	29.884	29.852
Attached Thermometer	2272.2	2506.9
	30	31
	75.7	80.9
Casella 3235	2349.0	2489.4
	30	31
	78.3	80.3
No. 4	2362.9	2498.3
	30	31
	78.8	80.6
Minimum after setting	2329.1	
	30	
	77.6	
Dry bulb	2380.6	2510.7
	30	31
	79.4	81.0
Relative humidity	1783	1685
	30	31
	59	54
Wind	137	175
	31	31
	4.4	5.6
Clouds	146	156
	31	31
	4.7	5.0

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Harvard College Observatory. July 1876.

Date	External Thermometer No. 4				Observations for error of psychrometer made at times when both bulbs covered dry.				Maximum after setting	Extreme temperatures		Rainfall in inches	Remarks.
	7 A.M.	2 P.M.	9 P.M.	Means	Time	Dry bulb	Wet bulb	No. 4		Maximum set at 10 A.M.	Minimum set at 10 A.M.	Gauge C Rain since at 10 A.M.	
1	71.3	84.8	73.3	76.5	8⅙ A.M.	76.7	75.4	77.2	77.2	85.9	65.3	0.000	y h
2	77.6	92.3	78.2	82.7	9⅔ A.M.	86.5	85.6	86.2	85.9	85.9	69.1	0.000	y h Thunder-shower beginning about 4½ P.M.
3	77.2	88.1	78.6	81.3	1 11/12 P.M.	88.0	87.0	88.0	77.2	93.3	73.0	0.872	y h Thunder-shower between 9 & 10 A.M. y > A 10.
4	76.6	91.3	78.0	82.0	9½ A.M.	88.2	87.1	87.9	86.5	87.9	68.0	0.000	r h
5	76.4	78.6	(74.8)	76.6	7⅔ A.M.	78.8	77.3	78.1	81.9	90.3	71.0	0.000	R h y
6	74.7	80.9	72.5	76.0	7⅔ A.M.	76.1	74.8	75.4	78.0	85.6	72.7	0.000	R h r
7	(70.4)	79.7	72.5	74.2	7¼ A.M.	71.8	70.3	70.4	77.7	81.3	63.0	0.000	R h y < y A 2.
8	73.7	88.6	82.0	81.4	7 1/12 A.M.	75.5	74.0	74.4	83.5	83.8	67.3	0.000	h R r
9	80.4	71.7	67.0	73.0	7⅚ A.M.	83.3	82.3	83.0	74.5	91.1	73.0	0.000	w R r
10	70.9	(89.5)	73.5	78.0	7¾ A.M.	74.8	73.8	75.0	81.1	81.4	64.1	0.000	h y y > A g½ y < A 4. Thunder shower about 6 P.M.
11	77.0	85.6	75.1	79.2	7 1/12 A.M.	78.0	76.5	77.1	86.4	89.0	70.2	0.188	h y y < Thunder showers after 2 P.M.
12	77.0	85.2	78.0	80.1					80.2	91.6	71.1	0.232	h y y > N. R r A 2.
13	77.5	91.4	83.0	84.0	7 A.M.	78.6	77.2	77.5	86.0	86.2	70.4	0.000	r h
14	75.0	82.0	75.2	77.4	7 A.M.	75.3	74.0	75.0	82.0	91.7	71.3	0.000	h R y Thunder shower about 3 P.M.
15	71.9	80.5	70.9	74.4	7 A.M.	72.6	71.1	71.9	80.8	87.4	66.2	0.055	R h y
16	(69.8)	84.6	74.6	76.3	7⅓ A.M.	70.9	69.5	69.8	79.2	84.0	60.8	0.000	r R h y
17	72.3	91.7	75.8	79.9	7 A.M.	73.7	72.2	72.3			(64.0)	*0.000	r h
18	76.5	93.6	78.4	82.8	7 A.M.	77.3	76.1	76.5	84.2	91.0	70.9	0.000	h R r A little rain in the evening.
19	78.9	87.3	75.9	80.7	7 A.M.	79.7	78.1	78.9	86.0	92.9	73.7	0.011	h r
20	78.0	92.0	79.8	83.3	7 A.M.	79.0	77.7	78.0	89.0	90.2	70.2	0.000	h R r {A little rain in the evening, with much lightning & distant thunder.}
21	76.2	84.0	73.0	77.7	7 A.M.	76.7	75.0	76.2	82.0	94.5	70.6	0.088	h y y > A 10.
22	64.8	72.3	64.8	67.3	7 A.M.	66.1	64.3	64.8	72.0	84.6	59.3	0.000	r w
23	62.4	69.9	59.7	64.0					64.4	72.4	60.8	1.103	y w {Thunder showers 5 to 8 A.M.; rainy after 1½ P.M.; some thunder.}
24	61.0	73.8	64.6	66.5	7 A.M.	62.4	60.8	61.0	68.9	69.5	57.5	†1.180	r w
25	61.3	74.8	62.9	66.3	7 A.M.	62.9	61.0	61.3	70.6	73.5	54.7	0.000	r w
26	57.8	68.5	60.9	62.4	7 A.M.	58.6	56.7	57.8	65.6	75.2	53.7	0.000	r w
27	59.0	74.1	65.0	66.0	7 A.M.	60.0	58.0	59.0	71.4	72.5	50.0	0.000	w R y
28	68.3	82.0	71.1	73.8	7 A.M.	69.3	67.4	68.3	75.8	76.6	61.5	0.000	w R y
29	72.6	80.7	72.8	75.4	7 A.M.	73.5	72.0	72.6	77.3	81.7	68.0	0.000	w R y
30	64.6	73.1	61.1	66.3	7 A.M.	65.1	63.6	64.6	71.7	81.9	60.9	0.011	y R w Rain after 3 P.M.
31	58.6	61.5	60.2	60.1					59.4	74.0	55.5	†2.338	y Rain at times.
Sums	2209.7	2534.1	2233.2	2325.6						2536.9	2037.8	6.078	Rainfall for month 6.08 inches.
Means	71.3	81.7	72.0	75.0						84.56	65.74		Mean temperature for " 75.0 Fahrenheit.

Maximum " " " 94.5 " ; July 21.
Minimum " " " 50.0 " ; " 27.
" (reduced to standard of No. 4) 51.2 "

The velocity of the wind is merely estimated in miles per hour. See general remarks on observations of 1873.

Observations in parentheses ( ) were not made at the regular times. The actual times are given below.

Date	Regular times	Actual times
5	9 P.M.	9½ P.M.
7	7 A.M.	7 1/24 A.M.
10	2 P.M.	2 5/24 P.M.
16	7 A.M.	7⅓ A.M.
17	10 A.M. (min.)	10¼ A.M.
30	4 P.M.	3 P.M.

Computation of relative humidity deferred for collection of more data for estimating the error of the psychrometer.

Relative humidity computed at the close of the year, as explained in the general remarks on the observations of 1876.

Auroras noticed.

Auroral light seen some evenings some days before July 22; it escaped record at the time.

* July 17, 10 A.M. Observations of wind, clouds and rainfall were recorded at 2 P.M. from memory. Attention to the time signal sent to Boston at 10 A.M. occasioned the observer to forget that the meteorological observations were incomplete.

† Gauge C examined at

9 P.M. July 23	1.169	inches
10 A.M. " " 24	0.011	"
Total	1.180	"
7½ A.M. " 31	2.206	"
10 A.M. " 31	0.132	"
Total	2.338	"

Observers:
F. Waldo, at 7 A.M. July 1, 2, 3, 4, 5, & 9 P.M. July 1, 2, 3.
J. F. McCormack, at 7 A.M. July 6, & 9 P.M. July 5, 6, 7.
Other observations by A. Searle.

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August 1876. Meteorological Record of

Date	Barometer	Attached Thermometer	Casella 3235	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity by Guyot's Tables (see note)	Wind	Clouds
1	30.136	67.8	71.5	71.6	70.6	72.7	64.3	67	3 E	4 Pr Rs Fm
2	30.346	69.1	73.8	73.9	73.0	75.0	66.5	67	4 E	1 Pr Rs M Fm R
3	30.348	69.4	73.0	73.0	72.1	74.6	63.9	57	0 NE	0 haze Rs
4	30.237	68.8	74.5	74.3	74.0	75.7	62.7	49	3 S	0 haze
5	30.182	71.0	78.2	78.4	77.7	79.4	71.4	72	1 SW	0 haze
6	30.193	75.0	84.0	84.0	83.3	85.0	76.5	71	1 SW	0
7	30.146	79.3	85.9	86.1	85.2	87.0	78.0	70	1 SW	0 Rs Fm
8	30.059	79.8	80.3	80.9	79.4	81.3	69.1	56	4 NW	7 Pr Pm Fm Rs R
9	30.159	76.5	78.2	78.1	*78.5	*79.1	65.0	48	4 NE	0 haze
10	30.249	74.8	79.7	79.3	79.0	79.9	69.1	60	2 SW	0 haze
11	30.224	74.0	79.0	78.9	78.1	79.9	71.5	70	3 S	0 Fm
12	30.268	75.1	77.8	77.7	77.9	79.8	71.5	64	4 SW	0 Fm Pr
13	30.249	76.3	79.9	80.4	79.3	80.8	73.3	74	2 SW	3 Fm haze
14	30.167	76.0	78.0	78.8	77.2	79.2	73.5	82	2 SW	7 Rs Fm haze
15	29.836	77.7	74.9	75.0	74.0	75.9	71.3	86	4 N	10 Pm
16	30.046	76.0	72.1	72.1	71.3	73.1	63.1	60	4 NE	0 M Fm
17	30.085	73.9	73.9	74.2	73.0	75.0	69.8	82	0 SW	10 Pm
18	30.072	71.3	69.0	69.7	68.5	70.4	63.9	75	2 NE	10 Pm
19	29.975	71.5	70.5	70.7	70.1	71.1	63.3	68	2 E	10 Pm Fm
20	29.794	71.0	70.0	71.5	70.1	72.5	66.9	80	3 W	2 Fm
21	30.116	63.6	59.1	58.9	58.1	60.2	49.4	48	7 NW	6 Pr Rs R M Fm
22	29.967	63.9	65.9	66.1	65.2	66.9	54.8	46	5 NW	5 Pr Rs M Fm
23	30.150	67.0	67.8	67.6	67.0	68.8	59.5	61	4 E	2 M Fm
24	30.198	64.5	67.7	68.4	67.0	69.0	62.0	72	5 SW	10 Pm
25										
26	29.937	74.5	72.7	72.6	71.8	73.8	63.0	57	3 W	2 Pm Fm
27	(29.947)	(67.3)	(66.7)	(66.8)	(65.9)	(67.8)	(56.1)	(49)	(11 W)	(2 M Fm haze)
28	30.063	66.6	64.8	64.7	64.0	65.7	53.7	46	8 N	1 M Fm
29	30.050	65.0	67.2	67.2	66.6	68.4	56.7	44	8 NW	0 haze Fm
30	30.012	66.1	71.3	71.0	70.4	72.6	57.9	40	0 W	1 haze Rs
31	29.952	68.2	73.8	73.5	73.0	74.8	61.2	46	0 NW	2 haze
1	30.187	74.4	70.8	70.7		71.7	63.9	69	7 E	1 Rs R M haze
2	(30.350)	(75.6)	(74.8)	(74.8)		(75.3)	(65.7)	(63)	(4 E)	(3 Pr Rs M)
3	30.299	76.1	72.9	72.9		73.8	60.9	48	5 E	2 Pr Pm R Rs M
4	30.192	76.7	79.9	80.1		80.8	67.6	47	3 SW	0 Fm
5	30.165	79.4	84.8	85.1		85.3	71.1	51	2 SE	1 M Fm haze
6	30.151	83.3	89.7	90.1		90.3	77.6	58	4 SW	1 M Fm
7	30.056	86.0	92.0	92.8		92.7	80.4	60	4 S	6 M Pr Rs Fm
8										
9										
10	30.236	82.0	79.6	79.8		80.2	66.1	48	2 SE	0 Fm
11	30.240	81.5	79.3	79.2		79.9	69.1	60	4 E	1 Fm Rs M
12	30.230	81.9	78.9	78.7		78.1	69.6	62	3 E	0 M Pr
13	30.201	82.7	86.0	86.6		86.7	74.9	60	5 SW	4 M Fm haze Rs
14	30.068	83.3	85.0	85.3		85.3	72.1	54	3 S	7 Pr Rs Fm haze
15	29.778	81.7	72.7	73.0		74.5	71.1	91	4 S	10 Pm Fm
16	30.058	79.1	69.0	68.9		69.1	61.0	67	2 SE	5 Pm Fm Pr Rs
17	30.052	74.2	67.0	67.6		67.9	66.2	99	3 SW	10 Pm; raining
18	30.014	76.6	72.9	73.2		73.7	66.0	70	4 SE	2 haze
19	29.930	75.8	68.9	68.7		69.6	63.0	74	7 E	10 Pm Fm
20	29.849	76.2	70.4	70.7		71.3	59.4	51	10 N	3 Fm M
21	30.017	67.3	64.3	64.3		65.2	48.4	25	6 NW	4 M Fm
22	29.933	70.7	72.3	72.3		73.2	55.0	28	7 NW	1 Pr Rs
23	30.152	71.9	65.0	64.9		65.8	56.0	57	4 E	0 Fm
24	30.128	72.1	76.0	76.9		76.6	67.4	65	6 S	7 M Fm Rs haze
25										
26	29.888	77.0	77.0	76.9		77.7	59.8	33	3 SW	0
27	29.954	72.3	69.6	69.5		70.4	55.2	36	6 NW	6 Pm Fm M
28	30.014	71.4	71.8	71.9		72.7	57.3	38	7 NW	0 M Fm
29	30.010	71.9	74.6	74.3		75.2	58.9	32	5 NW	0 M Fm
30	29.917	74.2	80.8	81.0		81.6	65.0	40	1 W	9 Pm M Fm haze
31	29.900	76.3	82.0	82.1		82.8	65.4	38	3 SW	2 haze

10 A.M.

4 P.M.

Sums of columns, number of observations, means, and reduction of barometer to the freezing point.	10 A.M.	4 P.M.
Barometer	903.163	841.969
	30	28
	30.105	30.070
	−.115	−.129
	29.990	29.941
Attached Thermometer	2141.0	2151.6
	30	28
	71.4	76.8
Casella 3235	2201.2	2128.0
	30	28
	73.4	76.0
No. 4	2205.4	2132.3
	30	28
	73.5	76.2
Minimum after setting	2181.3	
	30	
	72.7	
Dry bulb	2235.4	2147.4
	30	28
	74.5	76.7
Relative humidity	1867	1524
	30	28
	62	54
Wind	100	124
	30	28
	3.3	4.4
Clouds	95	95
	30	28
	3.2	3.4

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Harvard College Observatory — August 1876.

Date	External Thermometer No. 4				Observations for error of psychrometer, made at times when both bulbs seemed dry.				Maximum after setting	Extreme temperatures		Rainfall in inches.	Remarks
	7 A.M.	2 P.M.	9 P.M.	Mean	Time	Dry bulb	Wet bulb	No. 4		Maximum set at 10 A.M.	Minimum set at 10 A.M.	Equiv. C Rain gauge at 10 A.M.	
1	61.3	72.8	63.7	65.9	7 A.M.	62.9	59.8	61.3	70.8	70.8	56.6	0.088	Rrw
2	63.1	75.2	65.4	67.9	7 A.M.	64.7	62.5	63.1	73.2	73.8	57.1	0.000	rw
3	60.0	75.0	65.1	66.7	7 A.M.	60.6	59.1	60.0	72.6	76.5	55.3	0.000	rw
4	61.0	79.7	65.9	68.9	7 A.M.	62.8	61.0	61.0	74.0	76.0	55.0	0.000	rw
5	65.0	85.7	75.2	75.3	7 A.M.	66.0	64.4	65.0	77.8	79.1	59.3	0.000	h Rr
6	73.0	90.3	79.6	81.0	7 A.M.	74.0	72.4	73.0	82.9	85.3	67.2	0.000	h r
					2 P.M.	91.0	89.7	90.3					
7	75.7	92.8	78.9	82.5	7 A.M.	76.5	75.6	75.7	85.5	89.9	71.2	0.000	h Rr
					2 P.M.	93.0	91.9	92.8					
8	76.4	(84.1)	74.1	78.2	7 A.M.	77.4	76.0	76.4	80.0	92.2	71.3	0.011	
9	70.9	79.5	70.3	73.6					80.0	84.9	63.0	0.000	
10	66.5	79.6	68.7	71.6					* 80.0	* 81.3	61.5	0.000	
11	66.9	80.7	70.2	72.6					* 78.3	* 83.7	61.2	0.000	
12	69.9	79.9	72.4	74.1					* 78.4	* 83.4	64.8	0.000	
13	71.1	88.0	73.4	77.5	8 A.M.	75.0	73.6	74.0	79.7	84.6	66.1	0.000	Rrh
14	(72.8)	86.6	74.2	77.9	9 A.M.	74.8	73.4	74.6	77.9	88.0	67.0	0.000	h Ryz
15	71.3	85.0	72.7	76.3	7 1/12 A.M.	72.4	70.8	71.5	75.0	85.8	69.0	0.011	hy Thunder shower beginning 2 3/4 P.M.; lasting about 1 hour.
					2 P.M.	85.9	84.0	85.0					
16	69.5	71.1	65.7	68.8	7 1/2 A.M.	71.1	69.7	70.5	72.6	85.2	68.0	0.199	w Rr
17	63.2	(69.2)	65.1	65.8	7 2/3 A.M.	70.9	69.1	70.0	73.6	74.0	63.8	0.000	yw {Rather heavy rain after 11 A.M.}
18	(66.0)	73.9	65.1	68.3					68.0	74.9	63.3	0.905	yuz y > A10.
19	(67.2)	69.6	64.5	67.1	9 A.M.	69.7	68.0	69.2	71.0	72.9	60.2	0.000	yw
20	63.5	(75.6)	(58.1)	65.7	2 1/6 P.M.	76.3	75.0	75.6	69.0	72.1	61.9	0.165	yw {Rain about 7 A.M.} y > rRlU.
21	53.0	63.5	55.7	57.4	2 P.M.	64.4	62.7	63.5	59.0	79.6	49.7	0.000	rl
22	(52.5)	72.1	62.9	62.5	7 3/4 A.M.	60.2	58.3	58.8	65.8	65.9	49.0	0.000	rl yU.
23	59.4	65.9	56.8	60.7	8 3/4 A.M.	65.8	64.0	64.8	68.0	72.0	57.0	0.000	rw
24		76.4	(66.5)		2 P.M.	76.4	75.1	76.4	67.2	68.0	50.5	0.000	ywz
25	69.0	84.4	(73.5)	75.6	2 P.M.	84.9	83.8	84.4					
26	73.6	76.9	67.1	72.5	2 P.M.	77.7	76.1	76.9	72.6	83.9	62.5	0.000	
27	58.4	68.7	62.5	63.2	2 P.M.	69.7	68.1	68.7	(67.0)	(76.7)	(53.9)	(0.000)	Rrw
28	59.7	70.3	61.2	63.7	2 P.M.	71.4	70.0	70.3	64.6	70.2	55.2	0.000	rw
29		73.6	61.3		2 P.M.	74.1	72.6	73.6	67.3	71.3	53.0	0.000	rw
30	58.2	78.8	66.0	67.7	8 1/2 A.M.	64.4	62.6	63.0	70.7	73.8	54.9	0.000	zw yz<
					2 P.M.	79.3	78.0	78.8					
31	(63.2)	81.4	69.0	71.2	7 1/12 A.M.	64.5	63.0	62.8	72.9	80.0	54.0	0.000	z Rh
					2 P.M.	82.1	80.8	81.4					
Sums	1901.3	2406.3	2090.8	2040.2						2355.8	1802.5	1.379	
Means	65.6	77.6	67.4	70.4						78.53	60.08		

Rainfall for month 1.38 inches
Mean temperature " " {Mean of 3 means for (1, 2, 9)} 70.2 Fahrenheit
Maximum " " " (Aug. 8) 92.2 "
Minimum " " " (Aug. 22) 49.0 "
" (reduced to standard of No. 4) 47.8 "

The velocity of the wind is merely estimated in miles per hour. See general remarks on observations of 1873.

Computation of relative humidity deferred for collection of more data for estimating the error of the psychrometer.

Relative humidity computed at the close of the year, as explained in the general remarks on the observations of 1876.

Auroras noticed.
None this month.

Observations in parentheses ( ) were not made at the regular times. The actual times are given below.

Date	Regular times.	Actual times.
2	2 P.M.	1 1/2 P.M.
14	7 A.M.	8 A.M.
17	2 P.M.	2 1/2 P.M.
18	7 A.M.	7 1/2 A.M.
19	7 A.M.	7 1/2 A.M.
20	2 P.M.	2 1/2 P.M.
22	7 A.M.	6 1/2 A.M.
24	9 P.M.	9 1/4 P.M.
25	9 P.M.	9 1/4 P.M.
27	10 A.M.	9 3/4 A.M.
31	7 A.M.	7 2/3 A.M.

Observers: A. Searle up to 1 1/2 P.M. Aug. 8.
J. Smedley 9 P.M. Aug. 8 to 4 P.M. Aug. 12; (see note on these observations).
A. Searle 9 P.M. Aug. 12 & 7 1/2 A.M. Aug. 18.
Other observations at 7 A.M. and 2 P.M. by L. Waldo or J. Smedley; at other times, by A. Searle.

Mr. Smedley's observations were evidently wrong in other respects. He thinks that he read the lower end of the detached portion of the mercury in the maximum thermometer on Aug. 10, 11, and 12, although he had made the reading correctly on Aug. 9. This detached portion was found by numerous careful observations in the last half of August to be 11.1 degrees [illegible]

* Aug. 9, 10 A.M. Original reading of maximum after setting 83.5; of dry bulb 69.1.
Aug. 10, 10 A.M. Original reading of maximum 70.2; " " after setting 68.9.
Aug. 11, 10 A.M. Original reading of maximum 72.6; " " after setting 67.2.
Aug. 12, 10 A.M. Original reading of maximum 72.3; " " after setting 67.3.
These readings have been corrected conjecturally, 11.1 degrees being added to the erroneous maximum reading [illegible]

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September, 1876. Meteorological Record of

10 A.M.

Date	Barometer	Attached thermometer	Casella 3235		No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity by Guyot's tables (see note)	Wind	Clouds
1	29.892	71.5	77.8		78.0	76.9	79.0	69.0	63	2 SW	5 haze Rs Fm
2	29.596	74.7	70.0		70.3	69.4	71.1	61.9	62	18 NW	5 Pm M Fm
3	30.018	64.0	65.1		65.0	64.3	66.1	52.2	38	7 NW	0
4	29.928	61.3	73.0		72.5	72.0	74.2	60.4	45	2 SW	1 Pm Fm
5	29.961	64.0	62.0		61.7	61.2	63.0	50.1	40	7 NW	0 M Fm
6	30.016	59.2	62.5		62.2	61.3	63.5	50.7	41	8 NW	0 M Fm
7	30.096	60.8	63.9		64.8	63.2	65.2	55.9	59	0 NW	10 Pm Fm Rs
8	29.924	64.1	63.8		64.2	63.0	64.9	60.3	83	4 SE	10 Pm M Fm
9	29.954	64.0	58.0		57.9	57.0	58.9	53.6	96	6 NE	10 Pm; a little fine rain
10	30.156	59.0	60.2		59.9	59.3	61.5	50.1	47	6 N	0 Rs
11	30.043	61.8	64.5		65.0	63.8	65.8	56.4	59	0 NW	10 Pm Fm
12	29.958	62.7	65.8		65.4	65.0	67.0	55.2	48	3 NE	1 Pr Rs M
13	30.216	62.0	62.3		62.8	61.8	63.7	57.1	72	2 N	10 Pm Fm
14	30.197	63.7	68.8		68.7	68.0	69.8	58.8	53	5 SW	3 Pm M Fm haze
15	29.918	65.2	70.6		70.7	69.2	72.0	65.9	78	4 SW	10 Pm Fm
16	30.350	64.0	61.2		61.1	60.5	62.5	50.9	46	3 E	3 M Fm Rs
17	30.448	60.5	56.3		56.1	55.2	57.2	52.7	82	3 NE	10 Pm Fm; raining
18	29.955	62.7	62.2		62.6	61.5	63.9	61.5	95	1 N	10 Pm fog
19	29.675	65.0	65.6		66.5	64.9	66.7	61.5	80	2 W	10 Pm M Fm
20	29.868	63.3	58.0		58.1	57.0	59.0	55.9	91	5 N	10 Pm
21	30.200	59.6	54.0		53.7	53.0	55.0	51.3	88	6 NE	10 Pm M Fm
22	30.306	58.8	59.9		59.9	58.9	61.0	48.1	39	9 E	1 Rs Fm
23	30.169	57.6	56.8		56.8	56.0	57.9	53.2	81	1 E	10 Pm
24	30.055	60.0	57.9		57.8	57.0	59.0	54.7	84	6 NE	10 Pm Fm; a little rain
25	30.020	58.3	59.9		59.9	59.0	61.0	50.3	50	6 N	10 Pm
26	29.794	59.5	56.1		55.8	55.1	57.0	51.6	77	6 E	10 Pm
27	29.637	55.7	54.8		54.1	53.8	55.9	48.6	65	11 SW	5 M Fm
28	30.017	55.0	55.1		54.9	54.1	56.1	46.2	50	13 W	0 M Fm Rs
29	30.024	57.3	64.0		64.1	63.2	65.1	57.2	66	9 S	8 M Fm Rs
30	29.862	59.8	62.1		61.8	61.5	63.4	55.7	66	2 NW	6 Pr Pm Rs Fm

4 P.M.

Date	Barometer	Attached thermometer	Casella 3235		No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity by Guyot's tables (see note)	Wind	Clouds
1	29.799	80.4	85.8		86.1		86.4	71.8	50	4 SW	9 Pr Rs haze
2	29.678	74.0	72.9		72.8		73.7	55.9	29	18 NW	1 M Fm
3	29.970	73.0	72.7		72.6		73.4	55.8	30	11 SW	1 M Fm
4	(29.840)	(73.0)	(79.0)		(79.4)		(79.9)	(63.8)	(41)	(4 SW)	(8 Pm Fm)
5	29.951	67.5	62.0		62.1		63.0	48.5	33	11 NW	6 M Fm
6	30.009	66.2	69.7		69.7		70.2	64.4	78	6 NW	5 M Fm
7	30.044	68.9	66.8		66.6		67.3	55.2	47	4 E	9 Pr Rs
8	29.826	65.8	64.2		64.4		65.2	59.8	79	4 S	10 Pm
9	30.056	63.2	54.3		54.1		55.2	52.2	92	4 NE	10 Pm
10	30.113	66.0	64.8		64.9		65.6	53.0	44	4 SE	10 Pr Rs Fm
11	29.932	67.6	68.2		68.7		68.8	57.2	50	4 S	10 Pm Fm Rm
12	30.009	68.7	64.6		64.4		65.0	53.3	46	5 SE	1 M Fm
13	30.183	67.9	65.0		64.9		65.6	58.7	71	3 E	10 Pm Fm
14	30.120	69.0	71.5		71.6		72.4	57.7	40	11 SW	3 Pr Rs M Fm
15	29.866	70.4	74.8		74.8		75.7	63.3	51	5 SW	2 Pr M Fm
16	30.400	68.1	59.0		58.6		59.4	50.5	58	4 E	9 Pr Rs; thin
17	30.313	61.2	56.2		56.0		57.2	54.6	94	10 E	10 Pm
18	29.846	66.6	64.0		64.5		65.4	62.3	92	1 SE	10 Pm; a little rain
19	29.692	68.3	66.4		66.6		67.4	61.3	67	2 NE	9 Pm M Fm
20	29.956	63.1	55.6		56.0		57.1	53.8	90	5 NE	10 Pm
21	30.222	60.4	55.2		55.1		56.2	51.4	80	6 NE	10 Pm Fm
22	30.262	64.7	58.8		58.5		59.6	50.6	57	2 E	0 Rs
23	30.096	63.9	59.8		59.3		60.4	55.1	79	4 E	10 Pm Fm Rs; thin
24	30.024	60.9	58.0		57.9		58.6	54.7	86	5 NE	10 Pm Fm
25	29.986	62.6	59.9		59.8		60.7	55.3	78	5 NE	10 Pm
26	29.699	61.0	55.8		55.2		56.4	53.2	90	5 E	10 Pm; mist
27	29.693	60.5	53.2		53.7		53.8	48.3	76	5 W	9 Pm M Fm; a little rain
28	30.040	61.4	61.0		60.8		61.8	50.0	45	5 SW	0 Rs
29	29.937	62.4	65.6		65.8		66.4	58.2	65	8 S	10 Pm M Fm
30	29.902	63.8	61.3		61.2		62.3	53.3	58	2 W	10 Pm

Sums of columns, number of observations, means, and reduction of barometer to the freezing point.

	10 A.M.	4 P.M.
Barometer	900.253 30 30.008 −.089 29.919	899.464 30 29.982 −.101 29.881
Attached thermometer	1855.1 30 61.8	1990.5 30 66.3
Casella 3235	1872.2 30 62.4	1926.1 30 64.2
No. 4	1872.3 30 62.4	1926.1 30 64.2
Minimum after setting	1846.1 30 61.5	
Dry bulb	1906.4 30 63.5	1950.1 30 65.0
Relative humidity	1944 30 65	1896 30 63
Wind	157 30 5.2	167 30 5.6
Clouds	188 30 6.3	222 30 7.4

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Harvard College Observatory. September 1876.

Date	External Thermometer No. 4				Observations for error of Psychrometer made at times when both bulbs seemed dry				Maximum after setting	Extreme temperatures		Rainfall in inches. Gauge C examined at 10 A.M.	Remarks.
	7 A.M.	2 P.M.	9 P.M.	Mean	Time	Dry bulb	Wetted bulb	No. 4		Maximum set at 10 A.M.	Minimum set at 10 A.M.		
1	(67.8)	88.3	73.0	76.4	8½ A.M. / 2 P.M.	72.2 / 88.7	70.8 / 87.5	71.2 / 88.3	77.0	81.4	63.1	0.000	zh y<
2	69.9	74.3	60.8	68.3	2 P.M.	75.1	73.6	74.3	68.4	88.2	65.5	0.154	Rain before 8 A.M. y> rl A10.
3	56.0	71.6	(60.3)	62.6	2 P.M.	72.5	71.0	71.6	65.1	73.9	51.1	0.000	
4	58.2	79.0	(63.4)	66.9	8 A.M.	64.2	62.4	62.7	72.0	72.1	52.1	0.000	rl Some rain after noon. Ry U.
5	53.8	62.8	52.7	56.4	8 A.M.	57.8	55.8	56.5	62.4	78.7	51.7	0.066	l Rr
6	52.3	68.7	58.9	60.0	8⅓ A.M.	58.0	56.1	56.8	62.0	64.5	45.5	0.000	l Rr
7	53.4	68.1	59.2	60.2	8 A.M.	57.5	55.7	56.6	63.9	69.4	47.5	0.000	
8	58.8	66.5	59.9	61.7	8⅙ A.M.	64.1	62.2	62.8	63.7	70.0	53.5	0.000	y A little rain at times.
9	(58.3)	56.1	53.5	56.0					58.0	66.0	56.0	0.0888	y Rc. A little fine rain.
10	51.8	67.0	54.7	57.8					59.9	59.7	47.0	0.011	Rw
11	55.1	71.2	(55.2)	60.5					64.0	66.6	50.3	0.000	y Rw
12	54.8	65.6	57.0	59.1	7⅚ A.M.	57.9	55.9	56.5	65.3	70.4	52.4	0.000	rw
13	51.8	69.2	56.5	59.2	7⅚ A.M.	54.9	53.1	53.8	62.2	68.0	49.1	0.000	yw
14	57.5	74.7	61.3	64.5					68.0	70.3	51.9	0.000	Ryw
15	62.7	74.7	(63.2)	66.9	7¾ A.M.	65.0	63.3	64.1	69.6	74.0	57.9	0.000	yw y> N.
16	54.0	59.0	53.0	55.3	7⅚ A.M.	56.7	55.0	55.6	61.3	75.7	51.6	0.000	Rrl y<
17	(56.5)	56.4	55.8	56.2					56.7	61.7	46.3	0.022	yl Rain at times, occasionally heavy.
18	59.7	67.2	61.8	62.7					61.6	61.6	54.2	2.184	y Rw A little rain.
19	62.0	67.0	60.5	63.2					64.0	67.9	60.3	0.121	y Rw A little rain.
20	(58.2)	55.9	54.6	56.2	8 A.M.	59.4	57.5	58.2	57.9	67.0	56.0	0.000	y Rl A little rain.
21	52.5	55.3	52.1	53.3					54.2	58.7	51.1	0.055	y Rl A little rain.
22	50.3	60.0	50.4	53.6	2 P.M.	61.0	59.7	60.0	59.1	59.0	48.1	0.000	Rw r
23	47.2	60.9	57.0	55.0					56.7	60.0	43.8	0.000	y
24	54.3	57.6	54.5	55.5					57.6	61.2	51.8	0.000	y A little rain
25	51.9	61.0	54.5	55.8	8 A.M.	55.5	53.8	54.1	59.2	59.2	50.4	0.143	y
26	53.1	56.2	55.2	54.8					56.0	62.6	52.2	0.011	y mN. Evening rainy.
27		57.0	47.4						53.7	57.6	43.8	0.894	Rrf Some short showers.
28	47.1	61.6	(50.1)	52.9					55.0	58.1	43.2	0.022	rl
29	(55.2)	68.2	58.7	60.7	8 A.M.	57.2	55.2	55.2	63.0	63.5	47.9	0.000	Ryw y<
30	51.4	63.8	55.0	56.7	7⅚ A.M.	56.4	54.4	54.8	61.8	67.7	50.2	0.000	Ryw y< N
Sums	1615.0	1964.9	1710.2	1728.4						2014.7	1545.5	3.771	
Means	55.7	65.5	57.0	59.6						67.16	51.52		

Rainfall for month 3.77 inches.

Mean temperature " " (mean of 3 means for 7, 2, 9), 59.4 Fahrenheit

Maximum " " " (Sept. 2) 88.2 "

Minimum " " " (Sept. 28) 43.2 "

" (reduced to standard of No. 4) 44.1 "

The velocity of the wind is merely estimated in miles per hour. See general remarks on observations of 1873.

Observations in parentheses ( ) were not made at the regular times. The actual times are given below.

Date	Regular times	Actual times
1	7 A.M.	7½ A.M.
3	9 P.M.	9½ P.M.
4	4 P.M., 9 P.M.	3 P.M., 9½ P.M.
9	7 A.M.	7½ A.M.
11	9 P.M.	10 P.M.
15	9 P.M.	10 P.M.
17	7 A.M.	7½ A.M.
20	7 A.M.	8 A.M.
28	9 P.M.	8¾ P.M.
29	7 A.M.	8 A.M.

Computation of relative humidity deferred for collection of more data for determining the errs of the psychrometer.

Relative humidity computed at the close of the year as explained in the general remarks on the observations of 1876.

Auroras noticed.

Sept. 13, 7½ to 8 P.M. Auroral arch.

Sept. 22, 9 to 10 P.M. Some aurora.

Observers: at 9 P.M., L. Waldo or A. B. Gibbs.
at 7 (to 8) A.M., A. Searle Sept. 20 & 29, L. Waldo or A. B. Gibbs other days.
at 10 A.M., 2 P.M., 4 P.M., A. Searle.

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October 1876. Meteorological Record of

10 A.M.

Date	Barometer	Attached Thermometer	Castella 3235		No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity (Guyot's tables (see note)	Wind	Clouds
1	29.851	58.0	53.4		53.2	52.3	*53.4	47.6	73	7 NW	10 Pm M Fm
2	29.860	55.0	55.0		54.4	51.1	55.9	46.6	53	3 W	0 Fm
3	29.898	52.1	56.0		55.2	55.1	57.2	49.2	62	7 S	0 haze
4	29.825	58.4	64.2		64.2	63.5	65.5	57.8	67	9 SW	7 Pr Rs M Fm
5	29.968	58.6	53.1		53.3	52.1	53.9	49.2	81	3 NW	10 Pm; raining
6	29.744	54.3	55.9		55.8	55.0	57.2	54.7	95	0 calm	10 Pm fog
7	29.580	58.0	55.9		55.5	55.0	56.8	47.2	52	15 SW	2 M Fm
8	29.980	52.8	49.6		48.7	48.3	50.4	41.0	47	5 SW	0 Rs Fm
9	30.164	49.6	44.2		43.7	43.1	44.8	33.1	23	6 NW	0 Pr Rs
10	29.770	49.0	53.7		53.3	52.6	54.8	48.2	69	6 S	8 Pr Rs; thin
11	29.838	48.5	47.0		46.5	45.9	47.8	37.3	36	11 NW	0 M Fm
12	30.327	46.1	42.7		41.9	41.4	43.4	34.6	42	2 NW	0 Rs
13											
14											
15											
16	29.799	40.3	41.1		40.4	40.1	41.9	33.8	46	8 W	3 Pr Rs Fm
17	29.673	49.0	45.8		45.6	44.7	46.5	39.9	63	10 W	10 Pm
18	30.018	45.8	43.9		43.3						0
19	30.436	45.6	46.2		45.3						
20											
21	29.906	52.4	54.6		54.7						10
22	(29.950)	(53.8)	(57.5)		(57.5)	(56.7)	(58.4)	(55.3)	(91)	(1 NE)	(10 Pm fog)
23	(29.828)	(55.1)	(57.3)		(57.2)	(56.8)	(58.8)	(56.3)	(95)	(1 E)	(10 Pm; raining)
24	29.536	59.2	59.7		59.7	58.0	61.0	57.2	87	6 NW	10 Pm Fm
25	29.572	53.7	56.0		55.3	55.1	57.2	49.7	65	3 W	5 Pm Fm
26	29.849	52.0	48.0		47.4	46.9	48.8	40.6	53	3 W	2 Pm M Fm
27	30.112	47.5	44.2		43.7	43.0	44.9	37.1	52	6 NW	6 Pr Fm
28	30.163	46.5	40.1		39.4	39.0	40.8	33.1	49	3 NW	3 Pr Rs Fm
29	30.022	39.4	36.0		35.2	35.0	36.7	29.0	47	8 NW	6 Pr Rs Fm
30	30.211	40.0	42.6		41.4	41.3	43.4	34.9	45	4 NW	0
31	30.150	43.9	49.7		49.4	48.5	50.6	42.5	57	8 SW	10 Pm

4 P.M.

Date	Barometer	Attached Thermometer	Castella 3235		No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity (Guyot's tables (see note)	Wind	Clouds
1	29.847	62.0	57.2		57.2		58.2	47.7	48	6 W	9 Pm Fm
2	29.828	61.8	59.6		59.5		60.3	48.7	44	4 W	3 M Fm
3	29.783	61.0	62.2		62.1		63.0	52.8	53	5 S	0 haze
4	29.870	63.7	64.8		64.8		65.7	53.6	46	5 SW	7 Pr Fm Pr
5	29.985	58.0	49.9		49.5		50.7	47.5	91	1 W	10 Pm
6	29.518	59.5	68.0		68.2		69.0	62.5	74	12 SW	7 Pm M Fm
7	29.691	60.9	56.0		55.9		56.9	45.7	43	11 W	2 M Fm
8	(29.897)	(58.4)	(53.9)		(53.9)		(54.4)	(43.5)	(43)	(8 SW)	(10 Pm Fm M)
9	30.125	56.0	49.0		48.6		49.7	38.8	36	4 SW	1 Pr Rs
10	29.598	56.3	61.0		61.0		62.0	51.8	52	6 SW	6 Pr Rs Fm; thin
11	29.956	54.3	48.0		47.6		48.8	36.8	28	9 NW	6 M Fm
12	30.198	53.8	50.2		49.8		51.0	39.1	31	6 W	0 Rs
13											
14	29.730	57.2	59.0		59.0	58.1	59.9	52.1	64	5 S	10 Pm Fm
15	29.691	49.0	34.0		33.5	33.2	34.9	28.8	60	7 NW	1 M Fm
16	29.750	49.5	47.1		46.8		48.0	37.8	38	12 W	7 Pr Rs Fm M
17											
18											
19											
20											
21											
22	29.917	56.0	57.0		56.8		57.9	54.9	91	1 E	10 Pm fog
23	29.743	56.1	55.0		54.7		55.9	53.4	95	2 E	10 Pm fog
24	29.543	62.4	62.0		61.9		62.8	53.4	57	4 NW	8 Pm Fm
25	29.613	60.0	53.7		53.2		54.3	42.6	37	5 W	8 Pm Fm
26	29.879	58.0	50.0		49.8		50.8	41.2	46	5 W	10 Pm M Fm
27	30.143	53.0	44.7		44.3		45.3	37.0	49	6 NW	10 Pm Fm
28	30.043	50.9	43.3		43.0		44.0	35.7	47	2 W	10 Pm Fm
29	29.996	48.0	46.9		46.5		47.4	36.1	29	6 N	1 Pr Rs
30	30.198	51.1	51.7		51.0		52.2	38.2	19	1 NW	2 Rs Fm
31	30.043	52.0	56.6		55.4		56.3	49.3	68	5 SW	10 Pm Fm

Sums of columns, number of observations, and reduction of barometer to the freezing point.	10 A.M.	4 P.M.
Barometer	808.030	746.585
	27	25
	29.927	29.863
	−.059	−.075
	29.868	29.788
Attached Thermometer	1364.6	1408.9
	27	25
	50.5	56.4
Castella 3235	1353.4	1339.8
	27	25
	50.1	53.6
No. 4	1341.2	1334.0
	27	25
	49.7	53.4
Minimum after setting	1183.5	
	24	
	49.3	
	Or, by estimate for Oct. 18, 19, 21, 23, mean 49.1	
Dry bulb	1230.1	1359.4
	24	25
	51.3	54.4
	Or, by estimate for Oct. 18, 19, 21, 23, mean 51.0	
Relative humidity	1450	1289
	24	25
	60	52
Wind	135	138
	24	25
	5.6	5.5
Clouds	132	158
	26	25
	5.1	6.3

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Harvard College Observatory. October 1876.

Date	External Thermometer No. 4				Observations for error of psychrometer, made at times when both bulbs seemed dry.				Maximum after setting	Extreme temperatures		Rainfall in inches	Remarks.
	7 A.M.	2 P.M.	9 P.M.	Mean	Time	Drybulb	Wetbulb	No. 4		Maximum set at 10 A.M.	Minimum set at 10 A.M.	Gauge C examined at 10 A.M.	
1	48.0	58.2	45.3	50.5					52.0	67.0	46.8	0.485	
2	(44.8)	60.4	(47.3)	50.8	7¾ A.M.	46.3	44.3	44.8	55.0	58.4	42.1	0.000	r Rw
3	(43.7)	62.8	(52.4)	53.0	8 A.M.	45.6	42.7	43.7	55.6	60.9	38.1	0.000	r Rw
4	(56.5)	(67.4)			8 A.M.	59.8	57.7	58.2	63.3	63.5	50.1	0.000	w Ry
5	52.5	49.3	47.3	49.7					53.3	68.0	51.0	0.011	y Re A little rain.
6	(50.0)	67.4	57.8	58.4					55.4	55.4	42.0	0.066	y Rw A little rain. Sr N. Evening rain
7	(51.5)	58.1	46.1	51.9					56.0	68.3	49.0	0.309	v ly
8	38.9	56.2	43.3	46.1	7 11/12 A.M.	42.8	40.7	41.0	49.6	58.2	35.2	0.000	vl, A few drops of rain about 3½ P.M.
9	(38.4)	48.9	38.8	42.0	8 A.M.	40.0	38.0	38.4	44.0	56.0	33.5	0.000	rl
10	(44.3)	61.4	52.5	52.7	8 A.M.	45.7	42.6	44.3	53.0	52.9	34.2	0.000	Ryl w<
11	(42.5)	48.8			8⅙ A.M.	43.9	42.0	42.5	47.0	61.5	38.1	0.000	l Rsw
12	(36.5)	49.8	41.1	42.5	8½ A.M.	38.1	36.0	36.5	42.9	50.4	29.8	0.000	rl White frost this morning.
13	(39.8)		(41.9)										
14	(40.4)	63.0	(54.5)	52.6					†(58.7)	†(62.4)	†(36.3)		
15	(33.3)	33.1	30.9	32.4					†(35.5)	†(58.7)	†(32.0)	‡(0.353)	Snow last night and early today.
16	33.2	46.4	41.4	40.3					41.1	41.0	30.0	0.000	
17	(43.8)	45.7	38.0	42.5					45.7	46.5	40.1	0.000	
18	34.4	51.8	41.1	42.4									
19	(34.6)	(53.8)	(42.5)	43.6									
20		61.8											
21	46.1	(57.3)	50.5	51.3									
22		59.3	52.1						(57.0)	(60.7)	(32.1)	(0.055)	
23	52.4	55.7	56.0	54.7					(58.4)	(58.2)	(56.0)	(0.055)	
24	60.5	62.5	50.5	57.8					58.0	60.2	53.7	0.485	yw y> A 10.
25		55.4	42.5						56.0	62.0	43.0	0.000	Sw
26		(50.8)	44.3						48.3	57.3	37.8	0.000	Ryl
27	(38.0)	46.2	(36.3)	40.2					44.8	52.0	33.1	0.000	Ryl
28	(31.9)	45.1	33.0	36.7					41.0	46.8	28.3	0.000	Ryl
29	(28.3)	45.7	37.0	37.0	9⅔ A.M.	35.5	33.5	34.2	36.1	45.0	26.1	0.000	Rsl
30	29.5	51.3	38.3	39.7	9¼ A.M.	39.6	37.4	37.2	42.2	46.7	28.8	0.000	r Rw
31	(38.5)	58.0	(51.1)	49.2					49.2	51.6	29.6	0.000	yw
Sums	1132.3	1631.6	1253.8	1118.0						1469.6	996.8	1.819	
Means	41.9	54.4	44.8	46.6						56.52	38.42		

Rainfall for month 1.82 inches.

Mean temperature " " (mean of 3 means for 7½, 2, 9,) 47.0 Fahrenheit.
Maximum — " — " " (Oct. 7) 68.3 "
Minimum — " — " " (Oct. 29) 26.1 "
— " — (reduced to standard of No. 4) 26.7 "

Note. The mean temperature must be too high, owing to the lateness of the morning observations.

The velocity of the wind is merely estimated in miles per hour. See general remarks on observations of 1873.

Computation of relative humidity deferred for collection of more data for determining the error of the psychrometer.

Relative humidity computed at the close of the year as explained in the general remarks on the observations of 1876.

Observations in parentheses ( ) were not made at the regular times. The actual times are given below.

Date	Regular times	Actual times.
2	7 A.M., 9 P.M.	7¾ A.M., 9⅚ P.M.
3	7 A.M., 9 P.M.	8 A.M., 9⅚ P.M.
4	7 A.M., 2 P.M.	7½ A.M., 2⅙ P.M.
6	7 A.M.	7¼ A.M.
7	7 A.M.	7½ A.M.
8	4 P.M.	3⅓ P.M.
9	7 A.M.	8 A.M.
10	7 A.M.	8 A.M.
11	7 A.M.	8⅙ A.M.
12	7 A.M.	8½ A.M.
13	7 A.M., 9 P.M.	7½ A.M., 8⅚ P.M.
14	7 A.M., 9 P.M.	7½ A.M., 10 P.M.
15	7 A.M.	8 A.M.
17	7 A.M.	8 A.M.
19	7 A.M., 2 P.M., 9 P.M.	7½ A.M., 2⅔ P.M., 10 P.M.
21	2 P.M.	1½ P.M.
22	10 A.M.	11 A.M.
23	10 A.M.	10½ and 11 A.M. (see note)
26	2 P.M.	2½ P.M.
27	7 A.M., 9 P.M.	8 A.M., 10 P.M.
28	7 A.M.	7½ A.M.
29	7 A.M.	7½ A.M.
31	7 A.M., 9 P.M.	8 A.M., 9½ P.M.

Auroras noticed.

Oct. 18, between 1 and 2 A.M. Auroral light.

Observers.

Observation at 7 to 8 A.M. usually by L. Waldo; omitted, and inserted by A. Searle at 8 to 8½ A.M., on Oct. 2, 3, 9, 10, 11, 12.
Observation at 9 to 10 P.M. by L. Waldo or A. B. Gibbs.
Observations at 10 A.M., 2 P.M., 4 P.M., usually by A. Searle: omitted several days between Oct. 12 and 22 owing to illness. Oct. 16 and 17, at 11 A.M.; Oct. 14, 15, 16, 17, at 2 P.M.; Oct. 14, 15, 16, at 4 P.M.; the observers were absent a few days from Oct. 12 to 22, by A. B. Gibbs.
Oct. 23, 10½ A.M., A. B. Gibbs observed barometer, other readings, A. Searle observed wind & rainfall. At 11 A.M., A. Searle observed maximum, minimum, and psychrometer.
Oct. 22, 7 to 8 A.M., A. Searle observed wind & rainfall.

* Oct. 1, 10 A.M. Both bulbs of psychrometer wet (rain).
† Oct. 14 and 15. Maximum and minimum read at 4 P.M.
‡ Oct. 15. Rain gauge C examined at 2 P.M.

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November 1876. Meteorological Record of

10 A.M.

Date	Barometer	Attached Thermometer	Casella 3235	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity (Guyot's Tables see note)	Wind	Clouds
1	30.084	51.4	54.5	54.2	53.2	55.5	49.5	73	0 E	1 haze Pr Rs
2	29.794	53.8	59.5	58.9	58.7	61.0	55.5	77	4 SW	2 haze Pr Fm
3	29.627	55.8	62.5	62.3	61.3	63.4	59.0	84	10 S	10 Pm Fm
4	30.059	51.6	46.7	46.0	45.5	47.4	39.6	55	4 NW	0
5	30.303	50.0	46.0	45.5	45.0	46.7	38.1	48	6 N	6 Pr Rs Fm
6	30.406	41.5	39.7	38.6	38.5	40.8	37.2	85	0 NW	3 haze Fm
7	29.900	49.2	48.2	48.0	47.1	49.2	47.2	100	2 SE	10 Pm fog; raining
8	29.699	51.4	48.0	47.8	46.9	49.0	46.7	98	7 N	10 Pm mist; fine rain
9	29.832	53.4	49.8	49.5	48.9	50.8	47.8	93	0 calm	10 Pm
10	29.916	48.0	47.1	46.9	46.1	48.1	45.4	95	5 NE	10 Pm mist; fine rain
11	29.889	48.4	45.8	45.3	44.7	46.8	42.8	84	1 W	8 Pm Fm
12	29.760	49.3	42.7	42.2	41.2	43.5	40.6	92	5 NW	10 Pm Fm; raining
13	29.839	45.5	46.0	45.5	45.0	46.8	40.1	63	6 NW	1 Pm Rs Fm
14	29.973	48.5	41.1	40.8	40.0	42.2	38.8	87	0 W	10 Pm Fm
15	(30.052)	(47.4)	(39.7)	(39.2)	(38.4)	(40.0)	(37.0)	(90)	(5 NE)	(10 Pm Fm)
16	30.238	43.1	36.7	35.9	35.6	37.4	32.0	67	5 NW	0 M Rs
17	30.313	41.0	36.5	36.4	35.3	37.4	33.2	78	1 NW	10 Pm Fm
18	30.373	43.1	41.9	41.6	40.8	42.9	38.2	76	0 calm	10 Pm Fm
19	30.337	46.0	43.0	42.5	41.8	43.7	37.3	62	7 E	10 Pm Fm
20	30.022	45.9	43.0	42.6	41.9	43.8	41.4	96	7 NE	10 Pm Fm; raining
21	29.787	44.0	38.5	38.0	37.6	39.4	37.0	95	17 N	10 Pm; raining
22	29.940	41.9	36.0	35.7	35.1	37.0	34.7	96	7 NE	10 Pm
23	29.988	40.8	40.0	39.6	39.0	41.1	37.8	87	1 W	10 Pm
24	29.773	41.4	39.0	38.6	38.0	39.9	34.6	68	10 NW	10 Pm Fm
25	29.805	37.6	31.8	31.1	30.8	32.5	27.0	63	6 NW	1 Pr Rs
26	29.606	36.0	29.5	29.0	28.3	30.3	26.0	73	1 NW	7 Pm Fm
27	(29.550)	(35.8)	(31.1)	(30.4)	(30.2)	(31.9)	(27.2)	(70)	(4 W)	(0)
28	29.700	38.1	30.7	30.0	29.7	31.5	27.7	79	2 SW	0
29	29.890	39.0	31.7	31.1	30.7	32.3	25.7	51	8 NW	0
30	29.712	35.4	28.5	28.2	27.6	29.1	24.7	71	3 N	6 Rs Fm

4 P.M.

Date	Barometer	Attached Thermometer	Casella 3235	No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity (Guyot's Tables see note)	Wind	Clouds
1	(29.998)	(57.1)	(53.7)	(53.3)		(54.4)	(48.4)	(73)	(1 E)	(10 Pm Pr Fm)
2	29.700	60.6	66.8	66.6		67.4	59.4	66	1 S	7 Pr Rs Fm haze
3	29.697	61.1	58.1	58.0		59.0	49.1	52	8 NW	1 Fm
4	30.114	58.0	54.2	54.0		55.0	42.5	34	3 NW	0 Fm
5	30.317	54.7	48.6	48.2		49.1	38.9	40	3 NE	6 Pm Rm Rs Fm
6	30.361	53.6	46.6	46.0		47.0	39.5	57	6 SE	10 Pm Pr Fm
7	29.837	51.2	51.0	50.8		52.1	50.0	99	0 E	10 Pm fog; raining
8	(29.735)	(53.2)	(51.9)	(51.4)		(52.9)	(49.0)	(86)	(4 NE)	(10 Pm)
9	29.868	53.4	52.1	52.0		53.2	49.0	83	1 SW	10 Pm
10	29.764	49.4	43.6	43.2		44.5	42.8	100	6 N	10 Pm; raining
11	29.858	49.8	43.6	43.2		44.2	42.0	99	2 NE	10 Pm
12	29.767	49.0	46.1	45.8		47.0	40.9	67	8 NW	8 Pm Fm Pr Rs
13	29.815	51.1	49.0	48.7		50.9	42.2	53	13 NW	0 Fm Rs
14	29.995	50.0	46.4	46.0		47.1	42.2	77	0 NE	10 Pm
15	30.058	48.2	39.6	39.1		40.2	35.6	75	6 NE	10 Pm Fm
16	30.234	50.2	39.8	39.0		40.0	34.4	66	2 E	0
17	30.300	45.6	43.9	43.3		44.2	38.6	69	0 E	10 Pm Fm
18	30.347	47.6	43.7	43.0		44.1	38.3	68	3 E	10 Pm Fm
19	30.238	46.3	41.7	41.0		42.2	36.1	64	10 E	10 Pm
20	29.856	46.7	43.4	42.9		44.2	42.2	100	20 NE	10 Pm; raining
21	29.816	43.2	38.4	38.0		39.4	37.0	95	8 N	10 Pm; fine rain
22	29.944	42.2	37.8	37.3		38.5	36.2	96	4 NE	10 Pm; fine rain
23	29.890	43.6	42.6	42.2		43.1	38.9	80	0 calm	10 Pm Fm
24	29.796	47.1	38.1	37.8		38.8	31.8	53	13 NW	4 Pm Fm
25	29.717	45.8	38.1	37.6		38.7	31.0	49	6 N	0 Rs
26	29.491	41.1	34.9	34.2		35.1	31.7	85	0 W	7 Pm Rs Fm
27	29.498	44.3	38.8	38.1		39.1	33.0	62	0 NW	10 Pr Rs
28	29.700	46.0	38.8	38.1		39.2	32.9	60	2 W	9 Pm M Fm
29	29.858	42.1	36.0	35.4		36.5	28.2	42	8 NW	1 Pm Fm
30	29.507	37.2	28.4	28.0		29.0	22.7	49	5 N	10 Pr Rs

Sums of columns, number of observations, means, and reduction of barometer to the freezing point.

	10 A.M.	4 P.M.
Barometer	898.167	897.071
	30	30
	29.939	29.902
	−.044	−.055
	29.895	29.847
Attached thermometer	1354.3	1469.4
	30	30
	45.1	49.0
Casella 3235	1255.2	1335.7
	30	30
	41.8	44.5
No. 4	1241.4	1322.2
	30	30
	41.4	44.1
Minimum after setting	1222.9	
	30	
	40.8	
Dry bulb	1281.4	1356.1
	30	30
	42.7	45.2
Relative humidity	2356	2099
	30	30
	79	70
Wind	134	143
	30	30
	4.5	4.8
Clouds	195	223
	30	30
	6.5	7.4

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Harvard College Observatory. November 1876.

Date	External Thermometer No. 4				Observations for error of psychrometer, made at times when both bulbs seemed dry.				Maximum after setting	Extreme temperatures		Rainfall in inches.	Remarks
	7 A.M.	2 P.M.	9 P.M.	Mean	Time	Dry bulb	Wet bulb	No. 4		Maximum set at 10 A.M.	Minimum set at 10 A.M.	Gauge C measured at 10 A.M.	
1	(44.7)	56.2	(52.2)	51.0					54.0	57.7	42.6	0.000	w Ry Rain, with some thunder, after 4 P.M.
2	52.1	71.1	47.7	57.0					58.4	58.5	50.2	0.066	z h y< N.
3	(59.5)	62.0	47.0	56.2					61.0	70.5	46.7	0.055	y w g Rc N z U.
4	38.4	54.3	(41.9)	44.9					46.5	63.8	37.7	0.000	z w
5	(40.2)	50.4	37.2	42.6					46.0	54.3	45.0	0.000	y Rc
6	(30.0)	46.8	46.5	41.1					40.0	50.0	27.6	0.000	z l y< A z.
7	(43.5)	51.5	(45.2)	46.7					47.5	47.5	38.5	1.048	f Rain previous night & today.
8	(47.0)	51.3	48.0	48.8					47.6	51.0	44.4	0.949	y Mist and fine rain.
9	47.1	51.6	47.3	48.7					49.1	51.0	45.8	0.077	y z B g.
10	39.0	44.4	41.7	41.7					47.0	51.3	36.3	0.000	y f Fine rain, becoming heavier about noon.
11	42.0	44.4	(43.4)	43.3					44.6	47.0	41.0	0.474	y l Middle of the day rainy.
12		45.5	41.8						42.4	46.1	41.1	0.794	y Some rain y> B U.
13	39.4	49.9	38.3	42.5	8 1/6 A.M.	42.0	40.1	40.5	45.7	46.5	37.8	0.011	z l
14		46.3	42.9		9 2/3 A.M.	41.0	39.0	40.1	41.1	50.0	34.9	0.000	y l
15	37.4	40.0							(39.0)	(46.2)	(35.4)	(0.055)	y l Some rain. A few snowflakes early.
16		40.7	32.5		9 1/4 A.M.	35.1	33.3	33.7	37.0	39.4	29.5	0.000	z l
17	31.5	43.7			9 1/4 A.M.	35.8	33.9	34.3	36.8	40.6	27.6	0.000	y l
18		44.3	(41.0)		9 1/6 A.M.	40.6	38.5	39.2	41.7	43.7	34.1	0.000	y l
19	(41.8)	41.9	40.5	41.4					43.2	45.6	40.3	0.000	y l
20	41.8	43.3	43.0	42.7					42.5	43.3	39.7	0.298	y l Rain all day.
21	38.5	37.9	(36.8)	37.7					38.4	43.1	37.2	2.758	y l Fine rain most of the time.
22	35.3	37.7	37.3	36.8					36.4	38.6	34.6	0.088	y l Fine rain at times.
23		42.9	38.2						39.9	39.5	32.1	0.044	y l
24	(36.2)	40.8							39.2	42.2	35.4	0.000	y l y> Rz N. z U.
25	26.2	37.8	30.3	31.4	9 2/3 A.M.	30.8	29.0	29.4	32.0	41.2	25.8	0.000	z l
26	(24.4)	35.3	(28.3)	29.3	8 1/6 A.M.	25.9	24.1	24.4	30.0	38.0	23.0	0.000	Ry l
27	27.6	39.0	33.2	33.3					31.1	35.1	24.9	0.000	z l y< N Snow following night.
28	24.8	(38.7)	32.2	31.9					31.2	39.2	24.4	0.066	z l g B U z A 8.
29	26.4	36.2	27.8	30.1					31.9	39.2	26.0	0.000	z l
30	24.3	29.9	17.3	23.8	8 5/6 A.M.	27.3	25.4	26.0	29.0	36.4	22.9	0.000	Ryd y<
Sums	939.1	1355.8	1059.5	902.9						1396.5	1063.5	6.783	Rainfall for month 6.78 inches.
Means	37.6	45.2	39.2	41.0						46.55	35.45		Mean temperature " " (mean of 3 means for 7, 2, 9) 40.7 Fahr.
													Maximum " " " (Nov. 3) 70.5 Fahrenheit.
													Minimum " " " (Nov. 30) 22.9 "
													— " — (reduced to standard of No. 4) 23.5 "

Note. The mean temperature is probably somewhat higher than it would have been if the morning and evening observations had been made at the regular times.

The velocity of the wind is merely estimated in miles per hour. See general remarks on observations of 1873.

Computation of relative humidity deferred for collection of more data for determining the error of the psychrometer.

Relative humidity computed at the close of the year as explained in the general remarks on the observations of 1876.

Observations in parentheses ( ) were not made at the regular times. The actual times are given below.

Date.	Regular times	Actual times.
1	7 A.M., 4 P.M., 9 P.M.	7 1/4 A.M., 4 1/2 P.M., 9 1/2 P.M.
3	7 P.M.	8 A.M., 7 P.M.
4	9 P.M.	10 P.M.
5	7 A.M.	8 A.M.
6	7 A.M.	8 A.M.
7	7 A.M., 9 P.M.	7 3/4 A.M., 9 1/4 P.M.
8	7 A.M., 4 P.M.	8 A.M., 4 1/2 P.M.
11	9 P.M.	10 P.M.
15	10 A.M.	12 M.
18	9 P.M.	9 1/2 P.M.
19	7 A.M.	8 A.M.
21	9 P.M.	10 3/4 P.M.
24	7 A.M.	7 1/2 A.M.
26	7 A.M., 9 P.M.	8 1/4 A.M., 8 P.M.
27	10 A.M.	9 3/4 A.M.
28	2 P.M.	2 1/4 P.M.

Aurora noticed.

None this month.

Observers.

At 10 A.M., 2 P.M., 4 P.M., A. Searle; also at 9 P.M. Nov. 14 and at 8 1/6 A.M. Nov. 26.

Other observations by L. Waldo or A. B. Gibbs.

November meteors.

Night following Nov. 13 partly cloudy; meteors looked for to some extent by F. E. Seagrave and L. Waldo; none reported.

Night following Nov. 14 cloudy both evening and morning; meteors not looked for.

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December 1876. Meteorological Record of

10 A.M.

Date	Barometer	Attached Thermometer	Casella 3235		No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's tables (see note)	Wind	Clouds
1	29.467	26.0	13.9		13.5	13.0	14.8	11.1	67	7 NW	5 Pr Rs Fm
2	29.563	24.1	13.1		12.5	12.0	14.1	10.9	75	4 NW	0 Rs
3	29.771	32.4	33.4		32.8	32.4	34.0	28.6	66	9 NW	3 Pr Rs
4	30.032	33.2	32.8		32.3	31.8	33.5	27.9	63	6 NW	10 Pr
5	30.006	33.0	31.4		30.7	30.3	32.2	27.1	66	3 NW	6 Pm Fm
6	29.936	32.8	29.6		28.7	28.6	30.3	25.3	66	3 W	0
7	29.608	34.3	32.7		32.2	31.5	33.3	27.3	59	2 SW	10 Pr Pm Fm Rs
8	29.563	35.8	33.0		32.4	32.1	33.7	28.2	65	3 W	0 Rs Fm
9	28.958	37.0	35.2		34.8	34.2	35.9	33.0	91	25 SW	10 Pr
10	29.958	§15.0 (C)	8.1		7.4	7.2	under fastenings			10 W	1 Rs
11	30.165	27.1	6.8		6.6	5.8	7.8	{under fastenings}		3 N	10 Pr; snowing
12	29.578	30.8	18.3		18.0	17.1	19.1	17.1	98	6 N	10 Pr; snowing
13	29.844	31.7	34.3		34.0	33.2	35.0	31.4	83	6 S	10 Pm Fm
14	29.860	36.0	37.9		37.8	37.0	38.4	33.9	75	2 SW	10 Pm Fm
15	29.764	34.8	28.1		27.8	27.1	28.9	21.9	42	20 W	0 Pm Pr Rs Fm
16	29.401	32.4	37.9		37.3	36.9	38.4	30.1	45	25 SW	0 Pm Fm
17	30.536	§10.0 (C)	−3.0		±3.8	−4.1	below graduation			6 N	0 Rs
18	30.043	25.0	10.5		10.1	9.7	11.6	10.0	100	7 N	10 Pr; snowing
19	29.800	19.2	12.8		12.1	12.2	13.8	11.4	90	5 SW	0
20	30.285	§15.0 (C)	6.1		5.6	5.2	7.1	{under fastenings}		1 N	0 Pr Rs
21	30.074	20.2	7.9		8.0	7.0	under fastenings			1 N	10 Pr
22	29.867	23.0	16.4		16.5	15.3	17.1	15.8	100	1 NW	10 Pr
23	29.716	25.7	26.0		25.7	25.1	27.0	24.0	86	2 NW	10 Pr; snowing
24	30.128	§15.0 (C)	13.5		13.0	12.2	14.4	11.0	72	5 NW	0 Rs
25	30.233	§15.0 (C)	15.0		14.8	14.1	16.2	13.2	78	0 SW	9 Pr Rs
26	30.041	23.9	22.1		22.2	21.0	Psychrometer			0 NW	10 Pr; a few snowflakes
27	29.924	29.4	29.0		28.5	28.0	dismounted			1 NW	0 Rs
28	30.096	21.5	19.7		19.3	18.5	for repairs.			0 W	2 haze Rs
29	29.942	25.6	23.2		23.2	22.2				3 N	10 Pr Fm
30	29.044	30.9	25.7		25.3	24.4				11 SW	9 Pr Fm
31	29.728	25.2	23.0		22.5	22.0				6 W	4 Rs Fm

4 P.M.

Date	Barometer	Attached Thermometer	Casella 3235		No. 4	Minimum after setting	Psychrometer Dry bulb	Psychrometer Wet bulb	Relative humidity Guyot's tables (see note)	Wind	Clouds
1	29.445	33.8	18.0		17.5		18.9	14.1	53	7 NW	1 Pr Rs Fm
2	29.546	34.1	25.1		24.6		26.0	20.3	52	4 NW	10 Pr Rs
3	29.815	39.5	35.4		34.8		36.0	28.4	48	7 NW	3 Pr Rs Fm
4	30.003	37.1	35.5		35.1		36.2	30.7	67	3 NW	8 Pr Pm Fm Rs
5	29.957	43.5	39.5		38.8		40.0	32.0	46	2 NW	0 Rs
6	29.780	42.9	38.0		37.4		38.5	30.1	44	4 SW	0 Rs
7	29.499	42.1	38.7		38.0		39.0	30.9	47	4 SW	4 Pr Fm
8	29.580	42.3	33.9		33.3		34.2	26.6	45	4 SW	9 Pr Rs Pm Fm
9	29.156	36.2	15.7		15.1		16.7	13.2	72	25 SW	10 Pr; thin
10	30.070	§17.5 (C)	10.9		10.5		under fastenings			10 W	1 Rs
11	(30.108)	(31.0)	(11.2)		(11.1)		{under fastenings}	(10.2)		(4 N)	(10 Pr Fm; a little snow)
12	29.586	33.7	27.7		27.1		28.3	25.0	83	4 NW	10 Pr; a little snow
13	29.644	37.9	43.0		42.4		43.7	38.0	68	12 S	7 Pr Rs Fm
14	29.764	38.3	41.1		40.7		41.6	36.2	69	1 SW	10 Pm Fm
15	29.850	38.2	25.1		24.6		25.8	19.4	43	9 W	0 Rs
16	(29.844)	(32.1)	(12.0)		(11.4)		(12.9)	(8.7)	(55)	(9 NW)	(9 Pr Fm)
17	30.545	22.0	7.6		7.0		{under fastenings}	{below graduation}		2 NW	0 Pr Rs
18	29.650	25.0	*26.0		27.1		28.7	26.8	100	0 N	10 Pr; rain & sleet
19	29.844	26.1	20.0		19.4		20.9	16.8	66	6 SW	0 Fm
20	30.288	25.5	13.6		13.1		14.3	10.2	59	3 W	9 Pr Rs Fm
21	29.896	22.1	13.0		12.8		14.0	12.0	98	3 N	10 Pr; snowing
22	29.767	25.1	22.0		22.1		23.0	20.7	94	0 calm	10 Pr
23	(29.870)	(29.2)	(26.2)		(25.8)		(27.0)	(22.4)	67	(4 NW)	(5 Pr haze)
24	30.132	22.0	17.4		16.9		18.0	13.9	64	6 NW	1 Pr Rs
25	30.211	23.3	23.9		23.8		24.4	20.0	66	0 SW	10 Pr
26	29.899	27.0	30.0		29.8		Psychrometer			2 NE	10 Pr; a little snow
27	29.914	33.4	29.4		29.0		dismounted			3 W	0 Rs
28	30.069	30.5	24.9		24.5		for repairs.			0 W	10 Pr Fm
29	29.666	29.1	30.0		29.4					9 NE	10 Pr; snowing
30	29.304	33.3	23.6		22.9					12 W	0 Fm
31	29.782	31.0	24.0		23.6					9 W	0 Fm

Sums of columns, number of observations, means, and reduction of barometer to the freezing point.

	10 A.M.	4 P.M.
Barometer	924.931	924.484
	31	31
	29.836	29.822
	+.005	−.009
	29.841	29.813
Attached Thermometer	821.0	984.8
	31	31
	26.5	31.8
Casella 3235	674.4	782.4
	31	31
	21.8	25.2
No. 4	661.8	769.6
	31	31
	21.3	24.8
Minimum after setting	643.0	
	31	
	20.7	
Dry bulb	536.6	608.1
	22	22
	24.4	27.6
	O. adding estimate for Dec. 10, 17, 24, 26, 27, 28, 29, 30, 31,	O. adding estimate for Dec. 10, 11, 17, 26, 27, 28, 29, 30, 31,
	mean 22.6	mean 26.0
Relative humidity	1487	1406
	20	22
	74	64
Wind	183	178
	31	31
	5.9	5.7
Clouds	169	177
	31	31
	5.5	5.7

Measurements of snow and resulting rainfall.

The number of inches weighed is the length of a cylinder $1\frac{12}{16}$ inches in diameter.

Dec. 9, 10 A.M. (beginning to clear off). Snow $3\frac{5}{8}$ inches deep, moist and uniform: $18\frac{1}{8}$ inches weigh $4\frac{1}{2}$ ounces; hence rainfall for 1 inch of snow 0.167 inches; total rainfall 0.605 inches.

Dec. 11, 10 A.M. New snow $1\frac{1}{2}$ inches deep: $18\frac{3}{4}$ inches weigh $1\frac{1}{4}$ ounces; hence rainfall for 1 inch of snow 0.067 inches; total rainfall 0.084 inches. This measure preferred to that by gauge C (0.066 inches).

Continued on opposite page.

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Harvard College Observatory.

December 1876.

Date	External Thermometer No. 4 7 A.M.	2 P.M.	9 P.M.	Mean	Observations for error of psychrometer, made at times when both tubes seemed dry. Time	Dry bulb	Wet bulb	No. 4	Maximum after setting	Extreme temperatures Maximum set at 10 A.M.	Minimum set at 10 A.M.	Rainfall in inches. Gauge C examined at 10 A.M.	Remarks
1	9.7	18.1	11.8	13.2	9¼ A.M.	14.0	12.3	12.8	15.1	30.2	9.0	0.000	rd
2	6.5	21.5	25.4	17.8					15.0	18.7	6.1	0.000	rd y< A2. Snow after 4 P.M.
3	(26.6)	(37.7)	(28.3)	30.9					33.0	32.8	12.0	0.033	Rrl
4	28.3	35.6	31.5	31.8	9⅓ A.M.	32.1	30.2	31.1	32.6	38.2	23.2	0.000	yl Sr U.
5	23.5	38.4	29.4	30.4	9¼ A.M.	29.9	27.9	28.5	31.2	35.6	23.1	0.000	rl
6	21.5	38.5	29.7	29.9	9⅓ A.M.	28.8	26.8	27.1	29.9	39.0	20.3	0.000	rl
7	26.4	39.9	33.5	33.3	9⅓ A.M.	32.4	30.4	31.3	32.6	39.0	25.8	0.000	yl Rw N.
8	31.3	35.2	28.1	31.5					33.0	39.7	29.3	0.000	rl y< Ry U.
9	33.2	17.1	12.7	21.0	9⅓ A.M.	35.5	33.4	34.3	35.4	35.2	27.2	*0.605	y d< {Snow preceding night and in the morning; snow squalls in the day}
10	4.0	11.7	3.7	6.5					10.6	35.6	3.4	0.000	
11	4.5	11.3	10.8	8.9					8.7	12.5	2.7	*0.084	{Snow early, a little continuing to fall throughout the day.}
12	15.7	27.4	26.7	23.3					19.0	18.2	5.6	*0.284	Snow early and a little more later.
13	26.9	(42.9)	39.2	36.3	2⅓ P.M.	44.0	42.1	42.9	33.9	33.8	17.2	0.022	yRw SrBN.
14	34.1	42.7	36.7	37.8	9½ A.M.	38.0	36.1	36.8	37.6	43.0	32.9	0.000	y Rw
15	37.8	26.8	16.8	27.1	9⅓ A.M.	29.8	28.0	28.8	28.3	42.2	27.1	0.000	rh d<
16	34.3	15.6	1.2	17.0	9 A.M.	37.5	35.5	36.3	37.0	37.0	15.5	0.000	{Wind changed to N.W. about 10¾ A.M., and blew hard, with a snow squall about 11 A.M.}
17	‡ −0.6	5.7	3.2	2.8					−1.0	38.0	−5.9	0.000	d Rr
18	5.1	14.1	16.8	12.0					11.5	10.8	−4.1	0.044	ys {Much snow, sometimes mixed with sleet and rain. At 4 h 52 m P.M., bright flash of lightning in the south, followed by a heavy peal of thunder.}
19	4.8	19.8	16.5	13.7					14.7	28.9	3.8	*1.358	rd
20	2.8	14.6	5.2	7.5					8.2	20.0	2.2	0.000	rd Ry N.
21	5.4	13.7	12.8	10.6					9.4	15.0	1.9	0.000	y Rd. Snowing most of the day, but very little.
22	13.9	23.8	21.8	19.8	9⅓ A.M.	17.1	15.4	16.3	17.3	16.8	7.0	0.044	yl. A few snowflakes at times.
23	20.6	29.5	17.4	22.5					25.7	25.5	15.4	*0.927	ly. Sr N. Snow previous night & early today.
24	5.2	17.3	12.8	11.8					14.5	30.9	4.1	0.000	rd
25	5.7	24.0	19.9	16.5					16.0	18.0	2.9	0.000	y Rd
26	17.3	30.3	28.9	25.5					22.3	24.0	14.1	0.000	yl. A little snow and sleet.
27	28.2	31.1	19.2	26.2					28.7	30.1	21.0	0.011	rd
28	13.1	26.0	19.7	19.6					20.2	30.8	10.3	0.000	z Rd y< {Large halo round the moon about 6 P.M.}
29	16.1	30.5	(32.0)	26.2					23.8	26.0	14.4	0.000	y {Snow began falling about noon; in the afternoon it snowed hard, with increasing wind.}
30	30.0	24.0	19.7	24.6					26.0	37.9	22.2	*(1.679)	y y> d< zN.
31	18.9	26.2	21.4	22.2					23.3	27.0	17.7	0.000	rl
Sums	550.8	791.0	632.8	658.2						910.4	407.4	5.091	Rainfall for month 5.09 inches.
Means	17.8	25.5	20.4	21.2						29.37	13.14		Mean temperature " " 21.2 Fahrenheit. Maximum " " " (Dec. 14) 43.0 — " Minimum " " " (Dec. 17) −5.9 — " — (reduced to standard of No. 4) −5.3 "

The velocity of the wind is merely estimated in miles per hour. See general remarks on observations of 1873.

Observations in parentheses ( ) were not made at the regular times. The actual times are given below.

Date	Regular times	Actual times
3	7 A.M., 2 P.M., 9 P.M.	8 A.M. 2½ P.M. 8⅔ P.M.
14	4 P.M.	1¼ P.M.
13	2 P.M.	2⅓ P.M.
16	4 P.M.	3½ P.M.
23	4 P.M.	4⅓ P.M.
29	9 P.M.	9½ P.M.
30	10 A.M. (measurement of rainfall)	4 P.M.

Relative humidity computed as explained in the general remarks on the observations of 1876.

§ Mercury of attached thermometer sometimes out of sight; the readings marked (?) are estimates.

* Dec. 9, 11, 12, 19, 23, 30. Determinations of rainfall for these dates depend on measures of snow, which see. Gauge C on these dates was cleared out without examination except as stated in the record of the measurements of snow.

Aurora noticed. None this month.

Zodiacal light.

Dec. 15 about 7 P.M. Zodiacal light distinct; seemed to extend to Taurus. Still somewhat visible at 9 P.M.

Dec. 16. Zodiacal light as yesterday at 6 and at 9 P.M. (This extension of the zodiacal light to Taurus was noticed last year; see record.)

Measurements of snow and resulting rainfall, continued from opposite page.

Dec. 12, 10 A.M. Snow over old crust measured as follows in ten places: 3½, 3½, 5, 3, 4, 2¼, 4, 2½, 3¼, 3; mean 3.4 inches: 15½ inches weigh 2½ ounces; hence rainfall for 1 inch of snow 0.1883 inches; total rainfall measured today 0.368 inches. Deducting that measured Dec. 11, 0.084 inches, the rainfall since then is 0.284 inches.

Dec. 19, 10 A.M. The snow of the recent storm was at first wet and mixed with rain. Most of this may have melted down into the gauge. The rainfall cannot be well determined. But the estimate adopted is the sum of the amount caught in the bottle of the gauge, (excluding that in the funnel this morning), and the amount of rainfall due to the light snow over the crust, which was measured as follows in 10 places: 3½, 5, 4½, 4¾, 4, 5¼, 6½, 8, 5½, 5½, 6; mean 5.45 inches: 14½ inches weigh 2⅘ ounces; hence rainfall for 1 inch of snow 0.127 inches; for 5.45 inches of snow 0.693 inches. At 4 P.M. Dec. 18, gauge C gave 0.452 inches; at 10 A.M. Dec. 19, 0.243 inches. Total rainfall, estimated as above, 1.358 inches.

Measurements of snow and resulting rainfall, continued.

Dec. 23, 10 A.M.; depth of new snow estimated as follows in ten places; (impossible to distinguish new snow from old except in places which had been cleared, and then the new snow may have drifted); 6, 7, 6, 6, 9, 7, 7, 8, 8, 5; mean 6.9 inches: 15 inches weigh 3 ounces; hence rainfall for 1 inch of snow 0.1343 inches; total rainfall 0.927 inches.

Dec. 30, 4 P.M.; (no snow fell after 10 A.M.); no possibility of correctly distinguishing between old and new snow; new snow estimated 4½ inches; 9 inches weigh 5 ounces; hence rainfall for 1 inch of snow 0.3731 inches; total rainfall 1.679 inches.

Gauge C was cleared out at 9 P.M. Dec. 29, when a little rain was falling. As it caught only 3½ ounces afterwards, it is probable that all the rain was retained by the snow.

Additional readings of barometer and thermometers.

Date	Time	Barometer	Shaded thermometer	Casella 3235	No. 4
9	11½ A.M.	28.998	37.8		
9	2 P.M.	29.083	40.9		
9	9 P.M.	29.376	28.1		
16	7½ A.M.	29.434	31.0		
16	10½ A.M.	29.406	33.1		
16	1½ P.M.	29.666	34.0	19.0	18.6
17	9¾ A.M.			−3.2	−4.1
17	11 A.M.	30.569	{out of sight}	−1.0	−1.8
17	12½ P.M.	30.537	28.0	3.0	2.2
17	2 P.M.	30.518	21.0		
18	11 A.M.	29.904	25.2	18.8	18.2
29	2 P.M.	29.763	28.3		
29	9½ P.M.	29.020	31.0		
30	7¾ A.M.	28.928	31.8		

† Dec. 18, 4 P.M. Bulb of Casella 3235 probably has a mica on it.

‡ Dec. 17. The recorded fall of the temperature between 7 A.M. and 10 A.M. was actual (not due to error of observation). It is confirmed by observations of Dr. Albert Stevens at his house. He says the greatest change was apparently between 8 and 9 A.M., the minimum being reached about 9.

Observers: all the observations made by A. Searle except those at 7 A.M. Dec. 1 to 5 inclusive and those at 9 P.M. Dec. 1 to 4 inclusive, which were made by L. Fields or A. B. Gibbs.

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General remarks on the Observations for 1876.

Range of temperature

Minimum temperature observed in 1876 −5.3 Dec. 17. (This reading is reduced to the standard of thermometer No. 4.)

Maximum temperature observed in 1876 94.5 July 21. (This is the unchanged reading of the maximum thermometer.)

Observers. The names of the observers are given in the record for each month.

Barometer The barometer used throughout the year was Newman 68, in the same place which it occupied last year.

Thermometers C. 3235 and C. 12530 Thermometers Casella 3235 and Casella 12530 were tested to determine their freezing points on Dec. 29, 1872, and Feb. 24, 1876; see record for Dec., 1872, and Feb., 1876. Results; for C. 3235, 32.7 and 32.9; for C. 12530, 32.0 and 32.1. C. 12530 was removed in January, 1876; see record for that month.

Reduction of C. 3235 to No. 4 For the past five years, the thermometers have frequently been compared. The complete reduction of these comparisons, would probably not at present be worth the time it would occupy. A tolerable indication of the relation between Casella 3235 and No. 4, mounted as at present, (No. 4, being near the eastern side of the shelter, is most affected by the morning sun,) may be obtained from the means of the observations at 10 A.M. and 4 P.M. for each month. The result appears to be as follows:

When No. 4 stands below 40,	Casella 3235 stands	0.5	above it	(mean of 41 monthly means).
" " " at or above 40 and below 58,	" " "	0.4	" "	(" " 21 " ").
" " " " " 58 " " 69,	" " "	0.0	" "	(" " 15 " ").
" " " " " 69 " " 74,	" " "	0.2	below "	(" " 12 " ").
" " " " " 74 " ,	" " "	0.4	" "	(" " 12 " ").

There are indications of abrupt changes at about the temperatures first named, although the method employed must mask such changes, and may probably not give the temperatures at which they occur with the accuracy which would under some circumstances be desirable.

Psychrometer It was noticed at 4 P.M., April 23, 1876, that the scale of the wet bulb thermometer had become warped. On the appointment of a Director of the Observatory, the dismounting and refitting of both thermometers of the psychrometer was recommended, and, the recommendation being adopted, they were dismounted and left with Mr. Huddleston Dec. 26. Meanwhile frequent comparisons of both thermometers had been made with No. 4; these will be found in the record. They have been reduced by a rough graphical method only, this being considered as good a course as it was worth while to take. The results are as follows:

Reduction of both thermometers to No. 4

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Psychrometer; discussion of its errors continued.

The dry bulb thermometer stands above No. 4; the wet bulb below it. The differences for different readings of No. 4, which have been adopted, are given below. As the comparisons were mostly made in the morning, they were somewhat influenced by the sun, which affects No. 4, as above stated.

Dry bulb; below 32, 1.3; at or above 32, and below 44, 1.4; at or above 44 and below 51, 1.3; at or above 51 and below 56, 1.2; at or above 56 and below 61, 1.1; at or above 61 and below 65, 1.0;
" " " 65 " " 69, 0.9; " " " 69 " " 73, 0.8; " " " 73 " " 77, 0.7;
" " " 77 " " 81, 0.6; " " " 81 " " 84, 0.5; " " " 84 " " 87, 0.4;
" " " 87 " " 90, 0.3; " " " 90 " " 92, 0.2; " " " 92 0.1.

Wet bulb; below 34, 0.6; at or above 34 and below 40, 0.5; at or above 40 and below 42, 0.6;
at or above 42 and below 52, 0.7; " " " 52 " " 64, 0.6; " " " 64 " " 67, 0.7;
" " " 67 " " 71, 0.8; " " " 71 " " 74, 0.9; " " " 74 " " 88, 1.0;
" " " 88 " " 91, 0.9; " " " 91 0.8.

The collected observations on which these results depend, arranged in order of temperature, will be found on a piece of paper pasted on the back of the title-page of this book. The results are of course inapplicable to readings made before May, 1876, as it is not known that the psychrometer was in the same condition previously as it appeared to be April 23 and later. The psychrometrical observations for May to December inclusive have been reduced by referring both thermometers to No. 4 by the differences given above, before deducing the relative humidity from the tables. For January to April inclusive, the psychrometrical observations were reduced in the manner used in 1875. See also general remarks on observations of 1874.

Maximum

No change has been made in the maximum thermometer or in the manner of reading it. See general remarks on the observations of 1872 and 1873.

Minimum

The means of the observations at 10 A.M. for the past five years show that the minimum thermometer (Green 2205) stands about 0.5° below No. 4 after the minimum has been set. Above 60 the difference becomes larger; but this is presumably due to the fact that the means showing large differences belong to the summer months, when No. 4 is affected by the morning sun, as already stated. The correction, if any, to be applied to the minimum for each month, should be, accordingly, 0.5 in all cases, instead of, as heretofore, the difference between the means of the minimum after setting, and of No. 4, at 10 A.M.

Wind

The vane and anemometer were removed from the barn May 27, and mounted on the West Wing June 9. The letters put up with the vane (N E S W) were insecurely fastened, and after a short time became displaced, so that the letter N stands about NNE of the axis, etc. These letters might be altogether removed with advantage, when the weather is favorable to work upon the vane. No use has been made of the anemometer, except that the apparent rate of its movement has assisted in the estimates of the wind's velocity in miles per hour which have been entered in the record.

Rainfall

Gauge C continues in the same condition as at the close of 1874. Gauge A was removed in January, when the shed on which it stood was pulled down. It has not been used since. Measurements of falls of snow have been made in the manner described in the general remarks on the observations of 1872.

Mean temperature

The mean temperature for each month has been derived, as in 1874 and 1875, from the mean of the three means of the readings of No. 4 at 7 A.M., 2 P.M., 9 P.M.

Phenomena

The summer was hot; more especially, the four weeks following June 24 were remarkable for continuous heat. The lightning and thunder at $4^h 52^m$ P.M. Dec. 17 are noteworthy. The month of December was continuously though not severely cold, so that the mean temperature is unusually low; and the rainfall of 5.09 inches took place almost exclusively in the form of snow, so that the ground was covered to an unusual depth at the close of the year.

Change in hours of observation.

At the close of 1876 it was decided, with the approval of Professor Pickering, to make the meteorological observations of 1877 at 8 A.M., 2 P.M., and 8 P.M.

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Meteorological Record of January 1877.

Date	Barometer 8 A.M.	Barometer 2 P.M.	Barometer 8 P.M.	Thermometer attached to barometer 8 A.M.	Thermometer attached to barometer 2 P.M.	Thermometer attached to barometer 8 P.M.	Dry bulb of psychrometer 8 A.M.	Dry bulb of psychrometer 2 P.M.	Dry bulb of psychrometer 8 P.M.	Wet bulb of psychrometer 8 A.M.	Wet bulb of psychrometer 2 P.M.	Wet bulb of psychrometer 8 P.M.	Relative humidity, Guyot's Tables 8 A.M.	Relative humidity, Guyot's Tables 2 P.M.	Relative humidity, Guyot's Tables 8 P.M.
1	29.940	29.908	29.742	25.0	27.7	28.4	17.5	27.2	24.4	16.7	23.9	23.8	79	55	86
2															
3	29.752	29.774	29.756	15.0(?)	37.3	22.0									
4	29.742	29.746	(29.826)	10.0(?)	32.0	(15.0(?))	3.0	12.6	(9.4)	3.1	10.8	(9.0)	89	56	(89)
5	30.021	30.095	30.187	10.0(?)	36.5	23.4	3.9	18.9	12.4	4.3	16.6	12.0	97	57	82
6	30.215	30.148	30.072	18.2	24.8	26.4	5.9	30.0	29.7	6.6	27.1	28.6	100	64	82
7	29.243	29.000	29.450	32.1	32.2	33.7	37.8	39.8	39.1	38.1	39.1	36.0	98	89	67
8	29.745	29.624	29.406	32.2	34.9	35.0	26.4	42.0	40.4	26.5	39.1	39.9	95	72	92
9	30.026	30.187	30.320	28.5	28.1	19.2	(13.7)	14.7	10.7	(11.5)	12.6	10.0	(50)	53	75
10	30.316	30.161	30.060	15.0(?)	24.1	25.6	3.6	21.1	18.7	3.6	19.0	18.2	87	63	84
11	30.116	30.028	(29.877)	21.4	28.2	(28.9)	13.2	28.2	(29.7)	13.9	25.8	(29.0)	100	67	(86)
12	30.227	30.368	30.244	26.5	39.2	27.1	16.6	12.4	11.9	14.7	10.0	10.3	60	44	59
13	29.750	29.848	29.801	22.0	39.1	17.8	11.6	20.3	10.1	11.8	18.4	10.0	94	65	88
14	29.672	(29.816)	30.066	21.1	(27.7)	20.7	16.6	(26.6)	12.7	16.1	*(25.5)	11.7	83	*(81)	71
15	30.166	30.003	29.876	17.0	21.4	23.1	6.1	16.6	18.5	5.6	16.6	19.0	76	92	100
16	29.562	29.673	30.035	23.8	25.2	28.0	18.1	27.1	24.3	18.2	26.0	22.8	94	81	74
17	30.449	30.486	30.513	24.3	25.6	27.1	8.6	21.7	20.7	8.6	19.0	20.0	89	55	83
18	30.359	30.241	30.211	19.1	27.0	31.7	11.5	31.1	30.3	12.1	28.6	28.0	100	69	70
19	30.106	30.031	29.970	31.1	38.5	36.4	(28.0)	37.2	32.3	(27.2)	33.9	31.4	(85)	63	85
20	29.606	29.319	29.486	34.0	35.9	39.2	36.0	41.9	41.5	35.6	41.4	39.0	91	92	74
21	30.068	(30.135)	30.238	32.6	(34.0)	29.2	20.4	(28.0)	20.9	20.2	*(24.9)	20.0	90	*(59)	79
22	30.260	30.151	30.100	29.1	31.0	32.2	20.9	31.9	27.8	20.2	30.2	25.3	83	77	65
23	30.150	30.134	30.109	30.1	35.8	28.6	24.9	27.5	19.2	23.4	24.0	18.0	75	53	73
24	29.771	29.615	29.748	21.2	27.2	23.6	‡8.2	22.7	15.8	‡9.0	19.8	14.0	‡100	54	60
25	30.011	30.042	30.067	15.0(?)	21.2	21.9	2.0	11.8	13.1	2.0	9.6	12.2	86	47	73
26	30.206	30.134	30.068	18.2	22.8	25.8	6.7	27.0	23.9	7.1	24.0	22.5	98	59	74
27	29.812	29.812	29.952	28.7	37.0	35.7	30.8	41.8	34.8	28.2	35.9	32.0	67	47	68
28	30.294	30.316	30.282	29.0	34.1	32.0	14.1	21.7	21.2	13.5	19.9	20.5	80	67	83
29	30.157	30.150	30.209	29.2	31.0	32.2	25.2	33.7	29.6	25.8	30.8	29.0	100	67	87
30	30.324	30.384	30.420	30.2	38.1	36.0	25.4	37.2	30.2	25.8	34.3	30.0	99	68	92
31	30.350	30.246	30.198	30.7	37.9	37.9	25.3	42.5	37.0	26.0	38.4	35.5	100	62	68
Sums	900.416	899.575	900.289	720.3	935.5	843.8							2545	1878	2269
Means	30.014	29.986	30.010	24.0	31.2	28.1							88	65	78

Barometric means reduced to the freezing point; 8 A.M., 30.026; 2 P.M., 29.979; 8 P.M., 30.011.

Additional barometer reading at 8 5/8 A.M. Jan. 7, 29.150; attached thermometer 31.0; (fall of attached thermometer since 8 A.M. to be accounted for by opening of door between rotunda and West Transit Room.)

Observations in parentheses ( ) were not made at the regular times. The actual times are given below.

Date	Regular time	Actual time	Kind of observations.
3	8 A.M.	2 1/2 P.M.	Breakfast only.
4	8 P.M.	8 1/6 P.M.	All usually made.
9	8 A.M.	8 1/3 A.M.	Psychrometer only.
11	8 P.M.	11 1/3 P.M.	All usually made.
14	2 P.M.	2 1/6 P.M.	" " "
19	8 A.M.	8 5/6 A.M.	Psychrometer only.
21	2 P.M.	2 5/3 P.M.	All usually made.

The thermometers used as a psychrometer for several years past were this month under repair at Mr. Huddleston's. A rag was tied round the bulb of Casella 3235, which was used as a wet bulb thermometer, No. 4 being taken as the dry bulb thermometer. The reduction of C. 3235 to No. 4 is given in the general remarks on the observations of 1876, and has been used in computing the relative humidities above.

*Jan. 14 and Jan. 21, 2 P.M. Wet bulb not wetted since morning.

†Jan. 17. The high maximum reading is apparently due to some accidental disturbance of the instrument.

‡Jan. 24, 8 A.M. Temperature rising pretty fast. As No. 4 is less sensitive than C. 3235 this impairs the value of the psychrometric observation. The same remark applies, to some extent, to most of the psychrometric observations at 8 A.M.

§Jan. 30, 6 1/2 P.M. Distinct zodiacal light; vertex about 3° S.W. of the Pleiades.

Observer, A. Searle (for all observations this month.)

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Harvard College Observatory.

January 1877.

Date	External Thermometer No. 4				Casella 3235			Maximum, 8 A.M.		Minimum, 8 A.M.		Rainfall in inches.	Aurora	Zodiacal light
	8 A.M.	2 P.M.	8 P.M.	Mean, half weight to 2 P.M.	8 A.M.	2 P.M.	8 P.M.	Before setting	After setting	Before setting	After setting	Gauge C examined at 8 A.M.	8 P.M.	8 P.M.
1	17.5	27.2	24.4	22.20				26.0	19.0	16.1	17.2	0.000	Cloudy	Cloudy
2														
3	14.6	19.0	12.7	14.72				27.3	16.3	5.8	13.5	‖(1.017)	None	{Distinct to Aries, not to Taurus}
4	3.0	12.6	(9.4)	7.48				19.2	6.3	1.6	2.9	0.000	(None)	{Distinct to α Arietis, not beyond}
5	3.9	18.9	12.4	10.30				16.2	7.2	2.2	3.7	0.000	None	{Distinct to β Arietis, faint light to the Pleiades}
6	5.9	30.0	29.7	20.24				19.9	9.0	3.8	5.2	0.000	Cloudy	Cloudy
7	37.8	39.8	39.1	38.72				37.6	36.0	5.2	36.9	**1.125	None	Nearly to Pleiades
8	26.4	42.0	40.4	35.12				42.0	27.0	25.8	26.0	0.044	Cloudy	Cloudy
9	14.3	14.7	10.7	12.94				41.4	16.0	13.8	13.8	0.000	None	{To the Pleiades; narrow.}
10	3.6	21.1	18.7	13.14				16.6	6.5	1.4	3.1	0.000	Cloudy	Cloudy.
11	13.2	28.2	(29.7)	22.80				22.9	15.3	3.1	12.9	0.011	(Cloudy)	(Cloudy)
12	16.6	12.4	11.9	13.88				30.0	18.0	12.9	15.9	0.000	Cloudy	Cloudy
13	11.6	20.3	10.1	12.74				18.0	13.0	7.3	11.0	‖0.417	None	{To the Pleiades; not bright anywhere}
14	16.6	(26.6)	12.7	17.04				20.8	18.0	5.3	16.1	0.000	Low arch	To the Pleiades
15	6.1	16.6	18.5	13.16				27.0	9.0	4.6	5.1	0.000	Cloudy	Cloudy
16	18.1	27.1	24.3	22.38				19.9	19.0	5.1	17.2	‖1.158	Cloudy	Cloudy
17	8.6	21.7	20.7	16.06				†35.5	12.3	7.1	7.8	0.000	Cloudy	Cloudy
18	11.5	31.1	30.3	22.94				22.5	14.0	7.6	11.0	0.000	Cloudy	Cloudy
19	27.5	37.2	32.3	31.36				34.0	29.0	11.0	27.0	0.000	Cloudy	Cloudy
20	36.0	41.9	41.5	39.38				37.2	36.9	{accidentally disturbed}	35.4	0.000	Cloudy	Cloudy
21	20.4	(28.0)	20.9	22.12				41.2	22.0	19.8	19.8	0.055	Cloudy	Cloudy
22	20.9	31.9	27.8	26.86				28.0	21.8	19.1	20.1	0.000	Cloudy	Cloudy
23	24.9	27.5	19.2	23.14				31.4	25.7	20.0	24.2	0.000	Moonlight	Moonlight
24	8.2	22.7	15.8	14.14				28.6	11.0	4.9	8.1	0.000	Cloudy	Moonlight
25	2.0	11.8	13.1	8.40				23.7	6.0	1.2	2.0	0.000	Cloudy	Cloudy
26	6.7	27.0	23.9	17.64				15.4	9.3	2.0	5.7	0.000	Cloudy	Cloudy
27	30.8	41.8	34.8	34.60				32.6	30.9	5.2	30.6	0.000	Cloudy	Cloudy
28	14.1	21.7	21.2	18.46				42.4	16.0	13.4	13.4	0.000	Cloudy	Cloudy
29	25.2	33.7	29.6	28.66				26.0	26.9	13.3	24.9	0.044	Cloudy	Cloudy
30	25.4	37.2	30.2	29.68				33.0	26.0	22.5	24.9	0.000	Moonlight	§Moonlight
31	25.3	42.5	37.0	33.42				37.6	26.3	22.5	25.1	0.000	Cloudy	Cloudy
Sums	496.7	814.2	703.0	642.72				853.9		283.6		3.871		
Means	16.56	27.14	23.43	21.42				28.46		9.78				

Mean temperature for month { mean of 3 means for 8, 2, 8, with double weight given to the morning & evening observations } 21.42 Fahrenheit. Rainfall for month 3.871 inches.

Mean of the 3 means for 8, 2, 8, 22.38 "
" " " 2 " " 8, 8, 20.00 "
" " 22.38 and 20.00 21.19 "
} See discussion of mean temperature from observations at 8, 2, 8, in large volume containing meteorological record for 1841 to 1852 inclusive.

Maximum temperature for month (Jan. 8) 42.0 "
Minimum " " " (Jan. 25) 1.2 "
" (reduced to standard of No. 4) 1.7 " See general remarks on observations of 1876.

Measures of snow as follows; the weights given are those of a cylinder of snow $1\frac{13}{16}$ inches in diameter.

Jan. 3, 2 P.M. Little snow fell after 8 A.M. Jan. 2; none fell Jan. 3. At 2 P.M. Jan. 3 snow over old crust measured in 5 places; 4, $5\frac{1}{2}$, $8\frac{3}{4}$, 10, 10; mean 7.65 inches; 12 inches weigh $2\frac{3}{8}$ ounces; hence rainfall for 1 inch of snow 0.1329 inches; total rainfall 1.017 inches. Snow much drifted; measure uncertain.

Jan. 13, 8 A.M. Snow measured in 10 places; $2\frac{1}{4}$, $2\frac{1}{4}$, $2\frac{1}{4}$, $1\frac{3}{4}$, 2, $2\frac{1}{4}$, $2\frac{1}{2}$, 2, $2\frac{1}{4}$, $2\frac{1}{4}$; mean 2.175 inches; 14 inches weigh 4 ounces; hence rainfall for 1 inch of snow 0.1919 inches; total rainfall 0.417 inches. Weight of snow confirmed by repetition of measure at noon, when 14 inches weighed $4\frac{1}{8}$ ounces. Result preferred to measure by raingauge C (0.243 inches).

Jan. 16, 8 A.M. New snow heavy though not wet; not much drifted; measures taken partly in paths and partly on flat tin roof at house of A. Searle; 4, 4, 4, $3\frac{3}{4}$, $3\frac{1}{2}$, $3\frac{1}{4}$, $3\frac{1}{2}$, $3\frac{3}{4}$, $3\frac{3}{4}$, $4\frac{1}{2}$; mean 3.8 inches. (When the new snow lay on the old snow its depth could not be determined). $13\frac{1}{2}$ inches weigh $6\frac{1}{2}$ ounces; hence rainfall for 1 inch of snow 0.3047 inches; total rainfall 1.158 inches.

‖ Rainfall determined by measuring snow on Jan. 3, 13, 16. ** Jan. 7, 8 A.M. The recorded rainfall includes $0\frac{3}{4}$ ounces of ice left in the bottle, deducted from the next day's measure.

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Meteorological Record of January 1877.

Date	Wind: Estimated velocity in miles per hour, and direction (of approach) 8 A.M.	2 P.M.	8 P.M.	Clouds: Amount on scale of 10, and kind (on Poey's system). Arrow heads show the course of any kind of clouds the motion of which is observed; see note. 8 A.M.	2 P.M.	8 P.M.	Remarks.
1	4 SW	2 W	0 calm	4 Pm Fm ↑ Pr Rs	10 Pr	10 Pr	
2	12 N			10 Pr; snowing			Snow storm last night and early today.
3	5 WSW	11 WSW	10 WSW	2 Pr Rs	1 M Fm	0	
4	5 WSW	8 WNW	(2 W)	1 Pr Rs Fm	0 Rs	(0)	
5	3 W	2 W	1 W	0 Rs Fm	0	0	
6	1 SW	1 S	0 SE	1 Rs	10 Pr Rs; thin	10 Pr	
7	4 E	12 SW	8 W	10 Pm; raining	10 Pm	0	Rain; mostly before 8 A.M.
8	4 S	2 S	6 SSW	4 Rs haze	10 Pr Fm; thin	10 Pm	
9	6 NW	4 NW	1 NW	6 Pm ↑ Rs	0 Rs R	0	
10	3 N	2 NW	2 NW	10 Pr Rs Fm; thin	10 Pr Pm Fm	10 Pr	
11	0 SW	2 SW	(4 SSW)	1 Pr Fm →	10 Pr Rs	(10 Pr; a few stars visible)	y/ A few snowflakes in the evening.
12	5 N	4 N	3 N	0	0 Rs	10 Pr Fm; a few stars visible	rl y< BU Snow late in the evening.
13	3 NW	4 WNW	1 SW	6 {Pr Rs Pm → Fm ↘ Fm ⇒}	0 Rs	0	y Rd y> rN
14	4 SW	(7 WNW)	1 N	0 Pr Rs Pm ↑ Fm ↘	(2 M Fm →)	0	r Rd
15	2 N	1 N	6 N	10 Pr	10 Pr; snowing	10 Pr; snowing	y Rd Began snowing about 11 A.M.
16	3 NW	0 S	6 NW	10 Pr	10 Pr; thin	8 Pr	{A few snowflakes about noon.} r Ry. SyU RyU.
17	2 NW	2 NW	0 SW	8 Pr Rs →	8 Pr haze	10 Pr	yl
18	1 SW	1 SW	2 SW	0	0 Rs	10 Pm	
19	0 calm	0 SW	0 calm	0 Rs	1 Rs haze	10 Pm	y< U
20	4 SSW	5 SW	6 SW	10 Pm Rs/Fm ↑	10 Pm; raining	9 Pm Fm ↑	A little rain in the middle of the day.
21	0 SW	(4 SW)	2 SW	8 Pr Rs	(10 Pr Rs)	10 Pm Fm ↑	lRy
22	0 SW	1 SW	1 SW	10 Pr fog	10 Pr	9 Pr Fm ↑	
23	1 WSW	4 W	0 W	10 Pr Fm ↑	1 Pm M Fm →	0	
24	2 SSW	4 W	7 W	4 Pr Rs Fm →	5 Pr Rs Fm → M	6 Pr Fm →	
25	4 WNW	5 NW	5 SW	0 Pr Fm	0 Rs Fm	8 Pr Rs	rd y< BU. At 8 P.M. halo round the moon.
26	0 SW	4 SW	4 SSW	1 Pm Fm Rs haze	10 Pr Pm	10 Pm Fm →	
27	6 SW	5 WSW	4 WNW	0 Rs	1 Rs Pm Fm →	9 Pm Fm ↘	
28	4 N	2 NNE	5 SE	0 Fm	1 M Fm	10 Pr	A little snow during following night.
29	2 SSE	0 S	0 calm	10 Pr	10 Pr	10 Pr	
30	0 calm	0 NW	0 calm	9 Pr Pm Fm ↓	0	0	
31	2 SW	2 SW	4 SSW	6 Pr Rs Fm	7 Pr Rs Fm	9 Pr; many stars somewhat visible.	
Sums	92	101	91	154	157	198	Ground covered through the entire month (and since the middle of December) with several inches of snow.
Means	3.0	3.4	3.0	5.0	5.2	6.6	

Clouds. For an account of Poey's system of nomenclature, see the first pages of this book. An arrow head after the letters denoting any kind of clouds shows the observed direction of the movement of the clouds of that kind; ↑ signifying that the clouds were moving towards the north; ↗ towards the northeast, and so on. The rate of the motion will be indicated by the repetition of the mark one or more times; thus ↘↘ will denote rapid motion towards the southeast; ⇐ will denote extremely rapid motion towards the west. The relative height of two kinds of cloud, when it is distinctly evident, will be denoted by a line passing under the symbol of the highest and over that of the lowest kind; Rm ↑ Fm ↘ on Jan. 14, means that fracto-cumulus clouds moved towards the southeast below cirro-cumulus clouds which were moving towards the northeast; a current of air from the northwest was therefore interposed between two currents from the southwest, one at the earth's surface, another at a considerable height.

These observations are intended to include only such movements as are readily discernible. The omission of any record of movement, therefore, does not show that the clouds seemed all to be stationary, but only that their movement was not conspicuous, or that its direction was not evident (as often happens, for instance, with clouds near the horizon).

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Harvard College Observatory.

February 1877.

Date	Barometer 8 A.M.	Barometer 2 P.M.	Barometer 8 P.M.	Thermometer attached to barometer 8 A.M.	Thermometer attached to barometer 2 P.M.	Thermometer attached to barometer 8 P.M.	Psychrometer Dry bulb 8 A.M.	Psychrometer Dry bulb 2 P.M.	Psychrometer Dry bulb 8 P.M.	Psychrometer Wet bulb 8 A.M.	Psychrometer Wet bulb 2 P.M.	Psychrometer Wet bulb 8 P.M.	Relative humidity Guyot's Tables 8 A.M.	Relative humidity Guyot's Tables 2 P.M.	Relative humidity Guyot's Tables 8 P.M.
1	30.029	29.899	29.868	36.3	41.2	42.0	39.5	46.9	43.4	38.9	43.0	41.0	90	67	77
2	29.989	(29.992)	30.012	39.2	(44.9)	33.2	36.8	(44.9)	39.3	35.0	(41.0)	38.0	77	(66)	83
3	30.035	30.040	30.071	39.5	46.2	41.7	33.6	43.8	36.2	33.2	40.0	35.3	90	66	86
4	30.204	30.241	30.237	39.1	41.3	40.0	35.3	40.7	34.1	33.2	36.0	32.0	74	56	74
5	30.068	29.951	29.874	35.0	42.4	38.3	27.8	41.5	32.9	*26.7	37.2	32.0	81	60	85
6	29.822	29.882	29.911	33.7	39.2	38.6	29.6	38.1	32.5	*27.8	33.8	*30.8	74	55	77
7	29.823	29.768	29.779	32.8	42.0	41.7	26.1	40.5	37.9	*26.0	36.0	35.3	92	56	71
8	29.900	29.945	29.974	35.9	37.8	34.0	30.8	33.8	27.1	*27.2	*29.8	*24.2	57	57	60
9	29.980	29.996	30.070	26.6	37.2	34.6	17.4	31.4	25.2	17.7	27.1	23.1	97	50	68
10	30.039	30.082	30.036	29.4	37.6	33.5	16.1	34.4	29.4	15.9	32.7	27.6	88	77	74
11	30.199	30.265	30.235	33.0	40.6	37.5	25.4	38.4	31.2	24.7	34.6	30.5	84	60	87
12	30.020	29.848	29.858	34.5	39.8	42.8	31.9	45.9	35.4	31.2	40.4	32.0	87	55	63
13	29.956	30.000	30.146	24.0	30.4	24.6	16.3	19.0	16.4	14.3	15.9	14.2	58	45	54
14	30.273	30.280	30.317	23.4	31.1	31.8	16.7	29.9	26.6	13.8	24.5	22.8	44	37	49
15	30.291	30.218	30.163	27.9	36.0	36.8	22.6	44.9	34.6	20.6	37.0	*30.0	66	36	52
16	30.045	29.950	29.865	34.9	43.3	43.2	33.7	45.4	37.3	*31.0	39.5	35.7	69	51	80
17	29.536	29.546	29.603	38.3	39.0	35.9	33.2	29.6	23.8	29.9	25.5	21.1	63	50	58
18	29.555	29.535	29.612	27.1	33.7	33.2	17.8	30.5	23.5	15.7	26.6	21.0	59	53	60
19	29.548	29.455	29.643	28.1	35.0	31.3	16.0	31.1	16.3	16.0	26.0	14.7	91	42	64
20	29.700	29.719	29.713	19.4	26.9	29.4	15.8	26.3	23.6	14.8	22.8	22.3	74	52	76
21	29.645	29.646	(29.714)	27.4	36.0	(37.8)	22.8	38.3	(33.4)	21.8	33.0	(32.9)	80	47	(89)
22	29.797	29.810	29.884	31.5	39.8	42.8	26.4	52.0	37.6	†27.9	44.2	36.3	100	46	83
23	29.964	29.943	29.950	36.0	36.9	38.0	27.7	36.7	33.2	28.3	35.9	33.0	100	87	93
24	29.698	29.544	29.513	36.1	37.1	36.7	35.6	33.0	33.2	34.6	33.4	33.3	85	99	96
25	29.499	29.553	29.704	35.4	36.3	37.0	32.9	35.2	35.6	32.9	34.4	33.2	95	87	71
26	29.888	29.907	29.997	34.5	39.0	40.3	31.3	39.4	35.9	*29.2	34.8	33.3	73	54	70
27	30.204	30.200	(30.145)	33.7	40.1	(37.1)	27.2	35.0	(28.8)	*24.3	*31.0	(27.9)	60	58	(84)
28	30.056	30.000	29.961	30.3	37.8	39.0	21.9	37.5	31.9	20.4	*32.4	28.0	72	50	55
Sums	837.763	837.215	837.855	903.0	1068.6	1032.8							2180	1619	2039
Means	29.920	29.901	29.923	32.2	38.2	36.9							78	58	73

Barometric means reduced to the freezing point: 8 A.M., 29.910; 2 P.M., 29.875; 9 P.M., 29.900.

Observations in parentheses ( ) were not made at the regular times. The actual times are given below.

Date	Regular time	Actual time	Kind of observations.
2	2 P.M.	2 1/6 P.M.	All usually made.
21	8 P.M.	7 1/2 P.M.	— " — " — " —
27	8 P.M.	7 1/2 P.M.	— " — " — " — " —

The psychrometrical observations this month were made, as in January, with the thermometers No. 4 and C. 3235.

† Feb. 22. 8 A.M. C. 3235 rose again to 27.9 when replaced after being swung in the air outside and thus brought down to 27.5.

* Occasional notes were made this month of the common occurrence of the failure of the wet bulb of the psychrometer to freeze at temperatures below the freezing point. They are as follows:

Feb. 5. 8 A.M. Wet bulb not frozen; at 8 1/4 A.M., No. 4 about 27.5, C. 3235 about 26.5; rag still flexible below the bulb, and seems not to have frozen at all.

Feb. 6. 8 A.M. & 8 P.M. Wet bulb apparently not frozen; in the evening it was wetted about 6 1/2 P.M.

Feb. 7. 8 A.M. Not frozen; wet 15 minutes before reading; still at 26 5 minutes after reading.

Feb. 8. 8 A.M. Not frozen. {2 P.M. Not frozen. 8 P.M. Wetted at about 6 P.M. Not frozen.}

Feb. 15. 8 P.M. Not frozen; wetted about 6 P.M. (Not frozen.)

Feb. 16. 8 A.M. Not frozen.

Feb. 26. 8 A.M. Not frozen.

Feb. 27. 8 A.M. Not frozen; at 8 1/2 A.M. (frozen) No. 4 28.8; C. 3235 25.8; relative humidity 61.

Feb. 27. 2 P.M. Frozen; wet at 1 P.M.

Feb. 28. 2 P.M. Frozen.

The relative humidity has been computed as usual when the wet bulb stood below the freezing point without freezing.

Observer A. Searle, for all observations this month.

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Meteorological Record of February 1877.

Date	External Thermometer No. 4				Casella 3235			Extreme temperatures				Rainfall in inches	Aurora	Zodiacal light
								Maximum, 8 A.M.		Minimum, 8 A.M.				
	8 A.M.	2 P.M.	8 P.M.	Mean, half weight to 2 P.M.	8 A.M.	2 P.M.	8 P.M.	Before setting	After setting	Before setting	After setting	Gauge C examined at 8 A.M.	8 P.M.	8 P.M.
1	39.5	46.9	43.4	42.54				43.0	39.0	25.0	38.9	0.066	‡ Cloudy	‡ Cloudy
2	36.8	(44.9)	39.3	39.42				46.5	37.0	35.7	36.3	0.000	Cloudy	Cloudy
3	33.6	43.8	36.2	36.68				44.4	34.0	33.1	33.1	0.000	None	To the Pleiades
4	35.3	40.7	34.1	35.90				44.2	35.8	32.9	34.8	0.000	None	To the Pleiades
5	27.8	41.5	32.9	32.58				40.4	29.8	25.9	27.0	0.000	Cloudy	Cloudy
6	29.6	38.1	32.5	32.46				41.5	31.0	26.6	29.1	0.000	None	To the Pleiades
7	26.1	40.5	37.9	33.70				38.1	28.0	24.4	25.5	0.000	Cloudy	‡ Cloudy
8	30.8	33.8	27.1	29.92				41.0	31.6	25.4	30.2	0.000	Somewhat cloudy	‡ Rather cloudy
9	17.4	31.4	25.2	23.32				34.0	19.8	16.2	16.8	0.000	None	To the Pleiades
10	16.1	34.4	29.4	25.08				31.5	19.0	13.1	15.8	0.000	Cloudy	‡ Cloudy
11	25.4	38.4	31.2	30.32				35.0	27.0	15.5	25.0	0.000	None	To the Pleiades
12	31.9	45.9	35.4	36.10				38.6	33.0	25.0	31.6	0.000	Cloudy	Cloudy
13	16.3	19.0	16.4	16.88				47.0	19.0	15.6	15.6	0.000	None	To the Pleiades
14	16.7	29.9	26.6	23.30				19.6	18.0	13.9	16.2	0.000	None	To the Pleiades
15	22.6	44.9	34.6	31.86				30.4	24.0	16.2	22.3	0.000	Clouds and haze	Clouds and haze
16	33.7	45.4	37.3	37.48				44.6	34.0	22.2	33.3	0.000	‡ None	‡ Traces
17	33.2	29.6	23.8	28.72				46.4	34.0	32.5	32.5	0.000	Moon and clouds	Moon and clouds
18	17.8	30.5	23.5	22.62				34.1	19.4	13.7	17.0	0.000	‡ Moonlight	‡ Moonlight
19	16.0	31.1	16.3	19.14				31.4	18.0	13.2	15.5	0.000	Moonlight	Moonlight
20	15.8	26.3	23.6	21.02				31.0	18.0	11.7	15.4	0.000	Moonlight	Moonlight
21	22.8	38.3	(33.4)	30.14				27.0	25.0	15.4	22.4	0.000	(Moonlight)	(Moonlight)
22	26.4	52.0	37.6	36.00				39.1	28.0	22.6	26.0	0.000	Cloudy	Moon and clouds
23	27.7	36.7	33.2	31.70				51.3	28.9	25.1	26.9	0.000	Cloudy	Cloudy
24	35.6	33.0	33.2	34.12				36.7	36.0	26.9	35.1	0.000	Cloudy	Cloudy
25	32.9	35.2	35.6	34.44				36.0	33.0	32.0	32.2	0.758	Cloudy	Cloudy
26	31.3	39.4	35.9	34.76				36.0	31.9	29.8	30.8	0.066	Cloudy	Cloudy
27	27.2	35.0	(28.8)	29.40				39.7	28.2	25.7	26.9	0.000	(Moonlight)	(Moonlight)
28	21.9	37.5	31.9	29.02				35.6	24.0	20.1	21.6	0.000	Moonlight	Moonlight
Sums	748.2	1044.1	876.3	858.62				1064.1		635.4		0.890		
Means	26.72	37.29	31.30	30.67				38.0		22.69				

Mean temperature for month { mean of 3 means for 8, 2, 8, with double weight given to the morning and evening observations } 30.67 Fahrenheit. Rainfall for month 0.89 inches.

{ Mean of the three means for 8, 2, 8, 31.77 "
" " " two " " 8, 8, 29.03 "
" " 31.77 and 29.03 30.39 " } See discussion of mean temperature from observations at 8, 2, 8, in large volume containing meteorological record for 1841 to 1852 inclusive.

Maximum temperature for month (Feb. 23) 51.3 "
Minimum — " — — " — — " — (Feb. 20) 11.7 "
— " — (reduced to standard of No. 4) 12.2 " See general remarks on observations of 1876.

Measures of snow as follows; the weight given is that of a cylinder of snow $1\frac{13}{16}$ inches in diameter.
Feb. 25, 8 A.M. Snow 3 inches deep, moist and uniform; 13 inches weigh $4\frac{1}{2}$ ounces.
Hence rainfall to 1 inch of snow 0.2325 inches; total rainfall 0.697 inches.
Gauge C had $3\frac{1}{2}$ ounces of water in the bottle and $3\frac{3}{8}$ ounces of snow in the funnel.
This makes in all 0.758 inches; and as some of the rain and melting snow must have soaked into the ground yesterday, the gauge measure is preferred to the snow measurement.

‡ Additional notes on observations of aurora and zodiacal light.
Feb. 1. Clear at $8\frac{1}{2}$ P.M., but hazy; zodiacal light seen, but no aurora. This note entered Feb. 3, from memory.
Feb. 7. Some zodiacal light seen at $8\frac{1}{2}$ P.M.; apparently a little among the clouds at 8 P.M.
Feb. 8. Zodiacal light to the Pleiades at $8\frac{1}{4}$ P.M.
Feb. 10. Zodiacal light conspicuous at 8 P.M., wide and bright; the brighter portion ends before reaching the altitude of γ Aquilæ; the fainter portion continues to the Pleiades.
Feb. 16. At 8 P.M. moonlight and clouds.
Feb. 18. Record made from memory Feb. 20.

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February 1877.

Date	Wind: Estimated velocity in miles per hour, and direction (of approach) 8 A.M.	2 P.M.	8 P.M.	Clouds: Amount, on scale of 10; kind, on Poey's system; movement indicated by arrow-heads as explained in record for January, 1877. 8 A.M.	2 P.M.	8 P.M.	Remarks
1	4 SW	5 SW	4 SW	10 Pm Fm ↑	6 Pr R Rs Fm	9 Pr; {many stars somewhat visible}	gw Sr BN z z 8¼.
2	4 W	(4 SW)	0 calm	8 Pr Rs Fm →	(5 Pr Rs Fm →)	10 Pr; {stars near the zenith visible}	w Ry
3	1 WSW	0 WNW	1 NW	5 Pr Rs Fm ↘	1 Rs Fm	0	z w
4	3 N	0 WNW	0 SW	10 Pr	8 Pm Fm	0	w Ry A very little sleet or snow early.
5	3 SW	5 SW	4 SW	7 Pr Rs R Fm ↑	1 Rs	10 P; some stars visible	
6	5 WNW	6 NW	2 SW	0 P	0 Fm Rs	0	
7	2 SW	4 W	2 SW	0 Pr Rs	0 Fm haze	8 P Rs	
8	6 NW	7 NW	4 NW	0 Fm	0 Fm Rs	3 P Rs haze	
9	1 SW	5 NW	1 NW	0 Rs	0 Fm	0	
10	0 calm	2 SSW	5 SSW	0 Pr Rs	2 Pm Fm Rs	10 P	
11	1 NNW	0 E	1 S	1 Rs	0 Rs	0	
12	6 S	6 SW	12 W	10 Pr	9 Pr Rs	10 P	gw n< A8. A few drops of rain about 5 P.M.
13	20 NW	23 NNW	14 NNW	2 Fm ↘	0 Rs Fm	0	rdw
14	11 NW	11 NW	2 W	0 Rs	0 Rs	0	
15	3 SW	7 SSW	6 SW	4 Pr Rs Fm →	10 Pr Rs; thin	4 P Rs haze	
16	4 SSW	7 SSW	4 S	10 Pm Fm ↑ Rs	1 haze Rs	2 P haze	
17	20 NW	18 WNW	10 WNW	8 Pm Fm ↑	2 Fm ↘	5 P Fm ↘	
18	15 WNW	15 NW	10 SW	10 Pr Rs Fm	0 Fm	0 Rs	y> rRd.
19	1 SSW	5 NW	10 NW	3 Pr Rs Rm Fm →	0 Rs	0 Fm	
20	3 NW	11 NW	1 SSW	4 Pr Rs Fm ↘	6 Pm Fm > M Rs	0 P Fm	
21	2 SSW	1 W	(1 S)	2 Pr Rs Fm ↘	0 Pr Rs Fm	(0 haze)	
22	2 S	2 SSW	0 calm	3 Pr Rs Fm → haze	9 Pr Rs Fm	3 P Rs haze	
23	4 NE	3 NE	2 NE	10 fog	10 Pm fog	10 Pm	
24	11 NE	8 NE	7 NE	10 Pm	10 P; snowing	10 P; snowing	Rain began about 10 A.M.; soon changed to snow.
25	7 NNE	6 N	6 NNW	10 P; snowing	10 P; snowing	10 P	Melting snow falling most of the day, but slowly.
26	4 NW	4 NW	3 NW	2 Rs Fm ↘	6 Pr Rs Fm ↓	10 P	
27	4 N	3 SE	(1 SE)	0 Rs	2 Pr Rs	(1 Rs)	
28	1 NW	2 NW	1 SW	1 Rs	5 Pr Rs Rm	0 Rs	
							Thawing weather almost the whole month. No sleighing after the middle of the month, and little snow remaining at the end of it.
Sums	148	170	114	130	103	115	
Means	5.3	6.1	4.1	4.6	3.7	4.1	

The distinction between Pm and Pr clouds cannot always be made in the day and can seldom be made in the evening. Clouds which may belong to either class are marked simply P in the above record.

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Meteorological Record of March 1877.

Date	Barometer 8 A.M.	Barometer 2 P.M.	Barometer 8 P.M.	Thermometer attached to barometer 8 A.M.	Thermometer attached to barometer 2 P.M.	Thermometer attached to barometer 8 P.M.	Psychrometer Dry bulb 8 A.M.	Psychrometer Dry bulb 2 P.M.	Psychrometer Dry bulb 8 P.M.	Psychrometer Wet bulb 8 A.M.	Psychrometer Wet bulb 2 P.M.	Psychrometer Wet bulb 8 P.M.	Relative humidity Guyot's Tables 8 A.M.	Relative humidity Guyot's Tables 2 P.M.	Relative humidity Guyot's Tables 8 P.M.
1	29.972	30.013	30.127	32.8	40.3	41.0	29.4	41.4	34.9	26.4	35.0	32.0	62	43	67
2	30.079	29.842	29.462	35.0	37.3	39.2	31.9	41.0	46.0	30.4	39.0	46.0	79	79	97
3	29.606	29.772	29.879	42.0	46.0	44.5	40.2	45.0	35.9	37.3	38.9	33.8	70	50	74
4	29.713	29.595	29.834	39.6	41.0	40.1	38.9	45.5	34.0	38.7	44.6	30.5	94	89	62
5	30.100	30.026	29.992	34.2	39.6	39.0	25.3	35.0	30.9	24.5	29.9	27.4	84	48	58
6	30.042	30.056	30.079	29.0	35.4	31.0	23.2	28.2	22.2	20.8	24.0	20.0	61	47	63
7	29.907	29.965	30.172	32.3	39.9	38.1	34.1	42.1	30.9	32.8	36.1	26.0	81	47	44
8	30.192	29.946	29.762	34.7	38.6	40.9	34.3	41.7	47.4	31.8	39.1	46.3	71	74	89
9	29.352	29.116	29.464	46.0	48.6	45.0	52.5	54.7	32.6	52.3	52.0	30.0	96	80	69
10	30.022	30.136	30.260	35.9	38.0	34.8	22.6	30.8	23.6	19.9	25.7	21.3	57	42	63
11	30.417	30.352	30.344	30.3	36.0	36.5	19.7	33.1	28.0	18.9	28.1	26.9	80	46	81
12	30.304	30.230	30.132	35.1	37.2	38.2	33.0	37.4	36.1	32.8	36.4	36.0	93	86	94
13	29.983	30.031	30.172	37.2	37.1	35.6	33.3	29.5	29.9	33.6	28.9	28.4	98	87	78
14	30.130	29.957	29.824	31.7	34.1	36.4	21.1	32.8	32.0	20.2	31.7	32.8	80	84	100
15	29.613	29.556	29.633	35.5	37.7	33.9	32.1	32.0	25.3	31.7	27.8	23.4	90	52	70
16	29.855	29.901	29.953	30.8	34.9	35.4	21.8	28.6	26.5	20.0	23.5	25.5	68	38	82
17	29.950	30.038	30.109	32.8	34.3	34.0	24.6	29.7	25.0	24.3	26.9	23.9	89	64	79
18	29.950	29.790	29.796	29.0	28.6	27.1	15.0	18.8	17.8	14.9	18.0	16.4	89	80	69
19	29.951	29.916	29.948	23.4	28.0	27.7	11.6	24.0	20.7	10.7	20.4	18.5	72	47	61
20	30.127	30.188	30.178	26.2	32.1	32.4	16.7	29.8	24.5	14.9	25.0	23.3	61	43	78
21	30.010	29.795	29.756	30.1	34.4	37.7	30.6	48.2	45.0	30.0	46.2	45.2	88	82	98
22	29.864	29.906	29.950	39.2	41.2	42.8	41.3	49.8	42.8	41.6	44.8	41.7	99	62	87
23	29.739	29.753	29.842	39.9	41.2	44.3	37.6	48.4	41.9	38.1	44.8	41.0	100	71	89
24	29.952	30.040	(30.228)	40.1	43.6	(43.5)	39.5	49.6	(39.9)	39.2	44.5	(36.7)	93	61	(67)
25	30.421	30.398	30.371	39.3	42.6	42.3	36.5	37.7	37.2	34.1	35.8	37.2	72	77	95
26	30.150	29.952	29.778	39.3	39.8	40.3	35.3	38.4	39.1	35.7	38.6	39.7	99	97	100
27	29.462	29.370	29.281	42.4	45.7	46.2	48.5	48.6	43.7	48.9	48.6	44.1	100	99	100
28	29.110	29.084	29.099	44.2	46.9	46.4	42.7	44.7	39.9	43.2	44.9	40.0	100	98	96
29	29.248	29.369	29.562	41.1	44.0	42.9	36.5	42.8	32.7	34.5	37.8	29.4	76	55	62
30	29.776	29.878	30.089	36.1	39.0	40.3	30.2	38.2	37.2	26.6	32.3	33.4	56	45	59
31	30.334	30.346	30.360	37.5	43.9	45.3	37.8	43.5	41.3	33.7	37.1	37.8	57	46	66
Sums	927.331	926.317	927.436	1102.7	1207.0	1202.8							2515	2017	2397
Means	29.914	29.881	29.917	35.6	38.9	38.8							81	65	77

Barometric means reduced to the freezing point: 8 A.M., 29.895; 2 P.M., 29.853; 8 P.M., 29.889.

Observations in parentheses, made in the evening of March 24, were made at $8\frac{3}{4}$ instead of at 8 P.M.

The psychrometrical observations this month were made, as in January and February, with the thermometers No. 4 and C. 3235.

The following notes were made on the freezing, or failing to freeze, of the wet bulb at temperatures near the freezing point.

March 2, 8 A.M. Not frozen.
4, 8 P.M. Not frozen; wetted about 7 P.M.
5, 8 A.M., 2 P.M. Frozen.
9, 8 P.M. Not frozen; wetted at 7 P.M.
10, 2 P.M. Frozen.
14, 8 P.M. Wetted about $6\frac{1}{2}$ P.M.
15, 8 A.M., 2 P.M. Frozen.
21, 8 A.M. Frozen.
29, 8 P.M. Frozen; wetted at 6 P.M.
30, 8 A.M. Frozen.
30, 2 P.M. Not frozen.

The relative humidity has been computed, where the wet bulb stood below the freezing point without freezing, in the usual way, as if the wet bulb had been frozen.

Additional barometer readings on March 9.

Time	Barometer	Attached thermometer
$9\frac{7}{12}$ A.M.	29.303	47.0
$9\frac{11}{12}$ A.M.	29.264	47.2
11 A.M.	29.180	47.4
$11\frac{7}{12}$ A.M.	29.160	47.8
$12\frac{3}{4}$ P.M.	29.147	48.0
$1\frac{5}{12}$ P.M.	29.120	48.4

The thermometers composing the psychrometer used in 1876 and previous years were received from Mr. Hudellston, with new scales, during the month, and were remounted in their former places on March 31. The following readings were taken, both bulbs being dry.

Time	Uncovered bulb	Covered bulb.
8 A.M.	36.9	37.5
2 P.M.	43.6	43.9
8 P.M.	40.9	41.2

Observer A. Searle for all observations made this month.

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Harvard College Observatory.

March 1877.

Date	External Thermometer No. 4							Extreme temperatures.				Rainfall in inches	Aurora	Zodiacal light
								Maximum, 8 A.M.		Minimum, 8 A.M.				
	8 A.M.	2 P.M.	8 P.M.	Mean (half weight to 2 P.M.)				Before setting	After setting	Before setting	After setting	Gauge C. examined at 8 A.M.	8 P.M.	8 P.M.
1	29.4	41.4	34.9	34.00				37.6	30.7	21.4	29.1	0.000	Low arch	† To the Milky Way
2	31.9	41.0	46.0	39.36				42.3	32.6	25.2	31.3	0.000	Cloudy	Cloudy
3	40.2	45.0	35.9	39.44				47.4	40.8	31.5	39.8	0.640	None	To the Milky Way
4	38.9	45.5	34.0	38.26					40.0	31.2	38.2	0.000	None	To the Milky Way
5	25.3	35.0	30.9	29.48				46.4	27.7	22.5	25.4	0.077	Cloudy	Cloudy
6	23.2	28.2	22.2	23.80				35.8	27.7	21.1	22.4	0.000	None	To the Milky Way
7	34.1	42.1	30.9	34.42				35.5	34.4	19.0	33.8	0.000	‡ None	‡ Traces
8	34.3	41.7	47.4	41.02				44.3	34.9	25.1	33.8	0.000	Cloudy	Cloudy
9	52.5	54.7	32.6	44.98				52.0	49.8	33.8	51.2	0.210	§ None	To the Milky Way
10	22.6	30.8	23.6	24.64				54.3	25.6	21.3	22.1	0.474	None	To the Milky Way
11	19.7	33.1	28.0	25.70				31.3	22.0		19.2	0.000	None	To the Milky Way
12	33.0	37.4	36.1	35.12				34.0	33.1	19.1	32.1	0.000	Cloudy	Cloudy
13	33.3	29.5	29.9	31.18				38.7	33.6	32.1	32.7	0.541	Cloudy	Cloudy
14	21.1	32.8	32.0	27.80				33.7	22.5	17.4	20.3	0.033	Cloudy	Cloudy
15	32.1	32.0	25.3	29.36				34.7	32.7	20.4	31.3	* 0.898	None	To the Milky Way
16	21.8	28.6	26.5	25.04				32.7	24.0	16.3	21.1	0.000	Cloudy	Cloudy
17	24.6	29.7	25.0	25.78				31.0	25.4	21.2	24.0	* 0.237	Cloudy	Cloudy
18	15.0	18.8	17.8	16.88				30.9	17.0	14.1	14.1	* 0.198	Cloudy	Moon and clouds
19	11.6	24.6	20.7	17.72				20.3	14.3	8.0	11.0	* 0.096	Cloudy	Cloudy
20	16.7	29.8	24.5	22.44				24.8	18.1	11.0	16.0	0.000	Moonlight	Moonlight
21	30.6	48.2	45.0	39.88				31.7	30.9	16.0	30.0	0.000	Cloudy	Cloudy
22	41.3	49.8	42.8	43.60				‖ 46.5	40.7	30.0	40.3	0.838	Cloudy	Cloudy
23	37.6	48.4	41.9	41.48				48.8	37.6	35.7	37.1	0.949	Moon and clouds	Moon and clouds
24	39.5	49.6	(39.9)	41.68				49.6	39.5	34.9	38.7	0.000	(Moonlight)	(Moonlight)
25	36.5	37.7	37.2	37.02				49.6	37.0	34.3	35.9	0.000	Cloudy	Cloudy
26	35.3	38.4	39.1	37.44				40.1	36.0	34.0	34.8	0.044	Cloudy	Cloudy
27	48.5	48.6	43.7	46.60				48.3	47.2	34.7	48.0	1.853	Cloudy	Cloudy
28	42.7	44.7	39.9	41.98				50.7	43.3	41.0	42.1	0.241	Cloudy	Cloudy
29	36.5	42.8	32.7	36.24				46.4	37.0	34.2	36.0	0.132	Cloudy	Cloudy
30	30.2	38.2	37.2	34.60				42.8	30.6	29.2	29.7	0.000	None	To the Milky Way
31	37.8	43.5	41.3	40.34				39.3	38.0	29.7	36.9	0.000	Cloudy	Cloudy
Sums	977.8	1191.0	1044.9	1047.28				1241.5		765.4		7.461		
Means	31.54	38.42	33.71	33.78				40.05		25.51				

Mean temperature for month {mean of 3 means for 8, 2, 8, with double weight given to the morning and evening observations} 33.78 Fahrenheit. Rainfall for month 7.46 inches.

Mean of the three means for 8, 2, 8, 34.56 — " —
" " " two " " 8, 8, 32.62 — " —
" " 34.56 and 32.62 33.59 — " —
} See discussion of mean temperature from observations at 8, 2, 8, in large volume containing meteorological record for 1841 to 1862 inclusive.

Maximum temperature for month (March 10) 54.3 — " —
Minimum — " — " " (March 19) 8.0 — " —
— " — (reduced to standard of No. 4) 8.5 — " — See general remarks on observations of 1876.

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* Measures of snow as follows: the weight given is that of a cylinder of snow $1\frac{13}{16}$ inches in diameter.

March 15, 8 A.M. 10 measures of depth of snow: 10, 11, 11, 11, $9\frac{1}{2}$, 11, $10\frac{3}{4}$, 11, $10\frac{3}{4}$, 11; mean 10.7 inches; 15 inches weigh $1\frac{7}{8}$ ounces; hence rainfall to 1 inch of snow 0.0839 inches; total rainfall 0.898 inches. No deduction was made for snow already fallen at 8 A.M. March 14, as much snow melted during March 14, and as the measure by the raingauge on March 14 was probably too small owing to the failure of the gauge to catch all the snow. Gauge cleared out at 8 A.M. March 15.

March 17, 8 A.M. 10 measures of depth of snow: $2\frac{1}{4}$, $2\frac{1}{4}$, $2\frac{1}{2}$, 2, $2\frac{1}{4}$, $2\frac{3}{4}$, $2\frac{1}{2}$, $2\frac{1}{2}$, $2\frac{1}{2}$; mean 2.375 inches. 16 inches weigh $2\frac{1}{2}$ ounces; hence rainfall to 1 inch of snow 0.0997 inches; total rainfall 0.237 inches. Raingauge cleared out.

March 18, 8 A.M. New snow lying entirely in drifts, and undistinguishable from the last snow: estimated depth of new snow 2 inches. 14 inches weigh $1\frac{5}{8}$ ounces; hence rainfall to 1 inch of snow 0.0992 inches; total rainfall 0.198 inches. Raingauge cleared out.

March 19, 8 A.M. No means of estimating depth of new snow except very roughly; apparently about 1 inch more since 8 A.M. March 18; 14 inches weigh 2 ounces; hence rainfall to 1 inch of snow 0.096 inches; total rainfall same; raingauge cleared out.

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† March 1, 8 P.M. Pleiades in northern edge of rather faint zodiacal light.
‡ March 7, 8 P.M. Observation of aurora and zodiacal light impeded by clouds and haze.
§ March 9, 10½ P.M. Double auroral arch.

‖ March 22, 8 A.M. The maximum is 1.7 degrees lower than the reading of No. 4 at 2 P.M. March 21, but the maximum thermometer was probably wet all day.

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Meteorological Record of March, 1877.

Date	Wind: Estimated velocity in miles per hour, and direction (of approach)			Clouds: Amount on scale of 10, and kind (on Poëy's system). For explanations, see note in record for January, 1877.			Remarks.
	8 A.M.	2 P.M.	8 P.M.	8 A.M.	2 P.M.	8 P.M.	
1	2 WSW	10 WSW	0 calm	0 Rs	0	0	
2	2 SE	7 SE	14 S	10 P fog	10 Pn Fm ↖; raining	10 P; raining	
3	4 WNW	7 W	2 SW	0 Rs	1 Rs Fm →	0	
4	6 SSE	6 SW	10 WSW	10 Pn	10 Pn Fm ↑	0 Rs	
5	1 W	5 SSW	1 SSW	5 Pr Rs Fm ↑	7 Pr Rs M Fm ↑	10 P	
6	4 W	4 W	3 SSW	0 Rs	0 Fm	0	
7	7 SW	15 WNW	2 WNW	10 P; a few snowflakes	5 M Fm →	3 Pr Rs haze	
8	4 E	3 E	16 S	4 Pr Rs	10 P haze	8 P	
9	25 S	25 S	7 SW	10 Pn Fm ↑↑; raining	10 Pn Fm ↑; a little rain	0	Wind began to abate soon after 2 P.M.
10	9 NW	8 W	3 NW	0 Fm	9 Pn Fm → M	0	
11	3 WSW	5 WSW	0 S	0	1 Fm M	0	
12	2 SW	9 SSW	2 SSW	10 P; snowing	10 P Fm ↑; snowing	10 P; gentle rain	
13	5 NE	10 NE	6 N	10 P; snowing	10 P	10 P	
14	3 N	2 E	6 E	10 P	10 P	10 P	Much snow following night.
15	5 NW	12 NW	4 NW	10 P	0	0	
16	7 WSW	7 WSW	1 WSW	0	4 Pr Rs Fm	10 P	Snow falling at 9 P.M.
17	6 N	5 NE	5 N	10 Pr; a little snow	10 P M Fm	10 P	
18	8 NNE	8 N	2 W	10 Pr; snowing	10 Pr; snowing	9 P Fm	
19	6 WNW	5 W	3 SW	0	5 Pr Rs	10 P	
20	4 NW	6 SW	1 S	0	0	0	
21	5 SE	12 S	7 S	10 P	10 Pn M Fm ↑↑	10 P	Showers after 10 A.M., with thunder and lightning in the afternoon.
22	1 WNW	0 W	0 calm	10 Pn	10 P	10 P	
23	6 N	3 N	0 NW	10 Pn; a little rain	10 P Rs	5 Pr Rs Fm ↑	
24	0 NW	3 N	(4 NW)	7 Pn Fm	10 P	(0 haze)	
25	5 E	8 E	5 E	5 P haze Fm ←	10 Pn	10 P; mist	
26	11 ENE	11 NE	4 NE	10 P; fine rain	10 P; fine rain	10 Pn; raining	
27	3 E	6 E	2 NE	10 P mist	10 P fog	10 P mist	
28	1 E	4 E	6 NNE	10 P mist	10 P mist	10 P	
29	7 N	7 NW	11 NW	10 P	10 P Fm	10 P	
30	15 N	6 N	1 NW	6 Pr Rs Fm ↓	7 Pr Rs M Fm ↘	1 P Fm	
31	1 NNW	3 ESE	2 SE	8 Pn Pm Fm Rs	1 Pr Rs	7 P	
Sums	168	222	130	205	220	183	
Means	5.4	7.2	4.2	6.6	7.1	5.9	

See notes on clouds in records for January and February, 1877.

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April 1877.

Date	Barometer 8 A.M.	Barometer 2 P.M.	Barometer 8 P.M.	Thermometer attached to barometer 8 A.M.	Thermometer attached to barometer 2 P.M.	Thermometer attached to barometer 8 P.M.	Psychrometer Dry bulb 8 A.M.	Psychrometer Dry bulb 2 P.M.	Psychrometer Dry bulb 8 P.M.	Psychrometer Wet bulb 8 A.M.	Psychrometer Wet bulb 2 P.M.	Psychrometer Wet bulb 8 P.M.	Relative humidity ‡ Guyot's Tables 8 A.M.	Relative humidity ‡ Guyot's Tables 2 P.M.	Relative humidity ‡ Guyot's Tables 8 P.M.
1	30.428	30.379	30.290	41.8	43.9	44.1	43.8	44.1	41.0	39.0	38.9	37.1	59	56	64
2	30.019	29.957	29.980	42.1	43.0	43.6	40.0	41.9	41.4	39.8	42.2	41.3	95	100	96
3	30.118	30.136	30.167	41.0	43.8	44.5	37.3	45.9	37.5	35.4	40.2	35.2	79	53	75
4	30.182	30.110	30.080	38.8	44.1	45.9	32.9	39.4	35.8	*29.6	35.4	34.9	64	61	88
5	29.853	29.679	29.552	41.2	40.8	39.3	35.8	32.3	32.5	35.7	32.3	32.9	96	97	100
6	29.388	29.453	29.612	39.0	42.6	44.0	38.0	46.9	42.0	37.0	40.6	38.6	87	51	68
7	29.732	29.734	29.848	41.2	45.0	45.8	41.5	49.4	38.2	34.9	39.6	33.7	42	31	55
8	29.876	29.900	30.020	40.0	45.7	47.9	38.3	47.4	41.6	33.7	41.8	38.9	54	56	74
9	30.002	29.971	29.973	43.8	48.0	46.5	41.3	46.9	37.8	37.5	39.3	35.5	65	42	76
10	29.944	29.874	29.898	42.0	47.1	48.2	40.2	49.2	42.0	35.9	41.1	37.9	60	42	64
11	29.837	29.802	(29.830)	44.4	49.1	(50.2)	45.4	47.9	(43.7)	38.9	41.0	(39.9)	49	49	(67)
12	29.871	29.924	30.085	44.1	44.8	42.7	33.0	41.6	34.9	†32.0	32.9	32.5	86	26	73
13	30.176	30.136	30.128	38.7	47.2	49.4	38.6	48.9	40.5	34.6	38.8	35.9	60	28	58
14	30.084	30.057	30.030	42.1	46.9	48.2	39.7	45.2	38.0	35.4	38.3	34.8	60	45	68
15	30.000	29.978	30.003	40.2	47.0	49.7	38.3	53.3	44.0	35.3	43.3	38.7	70	36	56
16	30.017	30.006	30.033	43.4	51.1	52.3	46.6	55.0	48.1	38.7	41.9	40.2	40	21	42
17	30.015	30.029	30.067	46.4	48.8	49.2	43.9	51.4	46.3	41.5	47.1	43.2	79	69	74
18	30.097	30.105	30.098	46.6	49.6	50.8	43.3	49.4	41.5	39.3	42.6	38.9	65	51	76
19	29.960	29.829	29.665	48.1	46.8	46.2	40.0	40.9	41.1	39.8	41.0	41.4	96	99	100
20	29.530	29.483	29.452	45.6	47.6	47.0	41.8	41.6	41.2	41.7	41.2	41.6	97	95	100
21	29.656	29.719	29.850	45.0	49.5	49.7	46.1	52.4	44.3	42.9	46.6	40.6	74	60	69
22	30.109	30.143	30.208	36.1	47.9	49.9	42.3	48.7	44.8	41.7	43.3	42.2	93	60	78
23	30.198	30.150	(30.110)	44.7	52.5	(56.5)	53.2	61.5	(52.7)	46.4	51.0	(46.1)	55	42	(55)
24	29.940	29.912	29.874	49.7	58.6	54.9	51.5	55.6	47.2	46.1	47.0	45.5	63	46	85
25	29.782	29.752	29.864	49.8	56.3	58.8	54.3	69.3	55.5	51.1	53.0	46.9	78	25	46
26	29.928	29.870	29.970	51.8	54.9	57.0	51.4	61.3	54.2	42.3	45.4	42.3	38	16	26
27	30.050	30.030	30.032	50.1	57.9	58.9	53.8	60.6	53.6	44.3	45.8	44.7	39	20	42
28	30.064	30.056	30.001	51.3	55.1	53.6	47.8	46.2	43.0	41.7	41.4	41.5	53	62	85
29	29.897	29.934	29.950	50.0	50.8	50.7	44.0	44.8	42.3	44.2	44.4	42.1	100	95	96
30	29.795	29.796	29.800	47.8	51.0	55.2	41.7	55.3	50.1	41.5	51.3	48.8	96	72	89
Sums	898.548	897.904	898.470	1326.8	1457.4	1479.7	1285.8	1474.3	1296.8				2092	1606	2145
Means	29.952	29.930	29.949	44.2	48.6	49.3	42.9	49.1	43.2				70	54	71

Barometric means reduced to the freezing point: 8 A.M., 29.910; 2 P.M., 29.876; 8 P.M., 29.893.

Observations in parentheses made in the evening of April 11 were made at 8¼ P.M., and in the evening of April 23 at 7⅞ P.M.

Observations for comparison of thermometers, made at times when all the bulbs seemed dry.

Date	Time	Psychrometer Uncovered bulb	Psychrometer Covered bulb	No. 4	C. 3235	Date	Time	Psychrometer Uncovered bulb	Psychrometer Covered bulb	No. 4	C. 3235
1	1 5/6 P.M.	44.3	44.6	45.0	45.9	16	7 3/4 A.M.	45.3	45.4		
1	7 11/12 P.M.	40.9	41.2			16	1 5/8 P.M.	56.0	56.2		
2	7 1/2 A.M.	40.0	40.3			18	7 1/8 A.M.	42.4	42.6		
3	7 1/2 A.M.	36.6	36.9			18	1 5/8 P.M.	48.7	48.9		
3	1 5/8 P.M.	46.1	46.4	46.4	46.8	23	1 5/8 P.M.	64.7	64.8	65.0	66.0
5	7 1/4 A.M.	35.7	36.1			24	7 1/8 A.M.	49.3	49.5	49.7	49.8
7	7 7/12 A.M.	41.2	41.5	41.7	42.2	24	2 P.M.	55.8	55.9	55.8	56.2
7	1 1/2 P.M.	49.3	49.5	49.9	50.2	24	7 1/2 P.M.	47.0	47.4	47.9	49.0
9	7 1/2 A.M.	40.9	41.1			25	1 5/6 P.M.	69.5	69.7	69.9	70.0
10	7 1/7 A.M.	38.5	38.8			26	7 1/6 A.M.	50.8	50.9	51.1	51.4
10	1 5/6 P.M.	49.8	49.9			26	1 5/6 P.M.	60.9	60.9	61.0	61.3
11	7 5/6 A.M.	44.3	44.5			26	7 5/6 P.M.	54.9	55.0	55.2	55.7
11	1 3/4 P.M.	48.9	49.1			27	7 5/6 A.M.	52.7	52.7	52.4	53.0
12	7 1/2 A.M.	33.4	33.7			27	7 11/12 P.M.	53.5	53.6	54.2	54.9
13	1 1/2 P.M.	48.9	49.1			28	7 11/12 A.M.	47.7	48.0	48.2	48.8
14	7 1/2 A.M.	38.7	39.1			28	1 11/12 P.M.	46.5	46.8	47.2	48.0
15	7 5/6 A.M.	36.8	36.9			28	7 5/8 P.M.	42.9	43.4	43.7	44.1
15	1 5/6 P.M.	53.4	53.6								

* Not frozen.
† Frozen thoroughly for several minutes.

‡ Relative humidity computed after reduction of wet bulb to dry bulb by subtracting the following quantities from the readings of the wet bulb: April 1 to 8 inclusive, April 12, and April 13, 8 P.M., the amount subtracted was 0.3°, at other times 0.2°. For additional data see next page.

All observations this month made by A. Searle

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Meteorological Record of April 1877.

Date	External Thermometer No. 4				Casella 3235 (wet)			Extreme temperatures. Maximum, 8 A.M.		Minimum, 8 A.M.		Rainfall in inches.	Aurora	Zodiacal light
	8 A.M.	2 P.M.	8 P.M.	Mean (half weight to 2 P.M.)	8 A.M.	2 P.M.	8 P.M.	Before setting	After setting	Before setting	After setting	Gauge C exposed since at 8 A.M.	8 P.M.	8 P.M.
1	44.5	44.9	41.7	43.46	40.0	40.0	38.5	45.9	43.8	36.9	43.2	0.000	Cloudy	Cloudy
2	40.7	42.7	42.1	41.66	40.8	43.0	42.0	48.0		39.0	40.1	0.110	Cloudy	Cloudy
3	37.7	46.6	38.1	39.64	36.1	41.2	38.0	43.0	38.0	34.8	37.0	0.298	None; some clouds	In the Milky Way
4	33.7	39.7	36.6	36.06	30.2	36.3	36.0	46.9	34.0	28.4	32.0	0.000	Cloudy	Cloudy
5	36.4	33.1	33.3	34.50	36.3	33.1	33.8	41.7	37.0	33.1	36.0	0.033	Cloudy	Cloudy
6	38.6	47.5	42.6	41.98	37.9	41.3	39.2	38.0	38.0	32.2	37.9	1.015	Cloudy	In the Milky Way
7	41.9	50.0	39.0	42.36	35.6	40.0*		48.0	42.0	37.3	41.2	0.022	†Cloudy	Cloudy
8	38.8	47.8	42.0	41.88				50.4	39.0	33.1	38.2	0.000	Cloudy	Cloudy
9	42.0	47.6	38.5	41.72				50.3	42.0	37.0	41.1	0.000	Cloudy	Twilight
10	40.6	49.7	42.7	43.26				49.0	40.8	36.1	39.9	0.000	Cloudy	Cloudy
11	46.7	48.2	(44.7)	46.20				50.7	45.7	39.2	44.9	0.000	(Cloudy)	(Cloudy)
12	33.7	42.5	35.4	36.14				51.9	34.6	32.5	33.0	0.000	None	Faint; some beyond the Milky Way
13	38.6	49.4	41.4	41.88				43.8	39.0	30.0	38.2	0.000	None	Twilight
14	40.4	45.5	38.9	40.82				50.4	40.2	30.8	39.6	0.000	‡Suspicion among clouds	Doubtful; not beyond Milky Way
15	37.7	53.6	44.6	43.64				47.6	38.5	28.3	37.8	0.000	Moon and clouds	Moonlight
16	46.7	55.8	48.7	49.32				53.8	46.8	35.4	46.1	0.000	Moon and clouds	Moon and clouds
17	44.3	52.0	47.1	46.96				58.3	45.0	39.1	43.9	0.000	Cloudy	Cloudy
18	43.8	49.4	42.6	44.44				54.6	43.5	40.2	43.1	0.121	Cloudy	Cloudy
19	40.5	41.4	41.9	41.24				50.0	40.6	39.9	40.0	0.165	Cloudy	Cloudy
20	42.5	42.2	42.2	42.32				42.0	42.0	39.8	41.4	0.971	Cloudy	Cloudy
21	46.3	53.1	45.0	47.14			41.4	46.5	45.5	40.0	45.9	0.309	Cloudy	Cloudy
22	42.9	49.3	45.2	45.10	42.5	44.1	43.0	52.7	43.0	39.9	42.1	0.044	Moon and clouds	Moon and clouds
23	52.9	62.0	(53.1)	54.80	47.1	51.1	(47.7)	52.6	52.3	38.9	52.2	0.011	(Twilight)	(Twilight)
24	51.7	56.0	48.0	51.08	47.0	47.8	46.8	66.2	51.4	39.2	50.7	0.000	Moonlight	Moonlight
25	53.6	69.8	56.0	57.80	50.9	53.3	48.0	63.4	53.7	39.7	53.2	0.000	Moon and clouds	Moon and clouds
26	51.6	61.7	54.8	54.90	43.1	46.2	44.2	69.8	52.0	43.1	50.9	0.000	Moonlight	Moonlight
27	53.7	60.9	54.4	55.42	45.9	47.8	48.0	62.4	54.0	41.1	53.1	0.000	Cloudy	Cloudy
28	48.4	46.9	43.7	46.22	42.9	42.6	42.4	64.4	49.0	38.9	47.9	0.000	Cloudy	Cloudy
29	44.7	45.8	43.0	44.24	45.0	45.0	43.0	51.6	44.8	43.0	44.1	0.276	Cloudy	Cloudy
30	42.2	55.9	50.6	48.30	42.3	51.9	50.0	46.3	42.3	40.3	41.3	0.287	Cloudy	Cloudy
Sums	1297.8	1491.0	1317.9	134448				1540.2		1107.2		3.662		
Means	43.26	49.70	43.93	44.82				51.34		36.91				

Mean temperature for month { mean of 3 means for 8, 2, 8, with double weight given to the morning and evening observations } 44.82 Fahrenheit. Rainfall for month 3.66 inches.

Mean of the 3 means for 8, 2, 8, 45.63 — " —
" " " 2 " " 8, 8, 43.60 — " —
" " 45.63 and 43.60 44.61 — " —
} See discussion of mean temperature from observations at 8, 2, 8, in large volume containing meteorological record for 1841 to 1852 inclusive.

Maximum temperature for month (April 26) 69.8 — " —
Minimum — " — " " (April 15) 28.3 — " —
— " — (reduced to standard of No. 4) 28.8 — " — See general remarks on observations of 1876.

Relative humidity from No. 4 and C. 3235, computed as in March, 1877.

Date	8 A.M.	2 P.M.	8 P.M.	Date	8 A.M.	2 P.M.	8 P.M.
1	61	58	69	23	59	42	62
2	97	99	96	24	65	47	87
3	80	57	94	25	79	26	48
4	63	65	89	26	40	17	33
5	94	95	100	27	47	30	57
6	88	51	68	28	57	64	85
7	44	30		29	96	90	96
21			68	30	97	72	93
22	93	61	80				

† Some aurora at 10½ P.M.
‡ Conspicuous arch afterwards; some appearance of streamers about 11 P.M.

For additional data relating to relative humidity see preceding and following pages. The comparisons on the preceding page indicate larger corrections for C. 3235 than those employed in reducing the observations made with it this month, but the difference is small (0.15) and the comparisons not numerous enough to be very trustworthy. The corrections of 0.5 which they indicate would make the relative humidity agree well, however, with that deduced from the psychrometer.

* Casella 3235 removed April 7 for use in closet built for clocks; replaced April 21.

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April 1877.

Date	Wind. Estimated velocity in miles per hour, and direction (4 affixed)			Clouds. Amount on scale of 10, and kind (on Bey's system). For explanations, see notes in record for January and February, 1877.			Remarks.
	8 A.M.	2 P.M.	8 P.M.	8 A.M.	2 P.M.	8 P.M.	
1	1 S	3 SE	5 SE	10 Pm Fm	10 P	10 P	
2	1 SSE	2 N	3 N	10 P fog	10 P; raining	10 P	
3	3 N	4 NE	0 calm	10 Fm L	10 Pm M Fm L	1 P Fm	
4	6 NE	6 E	4 ENE	4 Pr Rs Fm	4 Pm M Fm Rs Pr	10 P	
5	5 NE	10 NE	6 N	10 P; fine rain	10 P; snowing	10 P; snowing	Snow mostly melting as it fell.
6	7 WNW	14 NW	8 SW	10 Pm Fm ≡; raining	10 Pm Fm ↘	4 P Fm	
7	15 NW	11 NW	12 NW	0 Rs	0 Fm	6 P	
8	4 N	4 SE	0 calm	0 Pm Rs	3 M Fm ↓	10 Pm; a few stars visible	
9	8 NE	10 E	0 NE	8 Pr Rs Fm →	8 Pr Rs Fm	1 P	
10	13 NE	3 NE	1 NE	8 Pm M Fm L	3 M Fm	9 Pm Fm	
11	6 NE	10 ESE	(0 calm)	2 Pm M Fm ↓	6 Pm Fm ↘	(10 Pm Fm)	
12	10 NE	11 N	0 NW	10 Pm M Fm L	10 P M Fm ↓	1 Pm Fm	Occasional snow squalls.
13	1 NW	4 E	2 S	0	0	0	
14	1 WSW	6 ESE	0 calm	10 P Rs	9 P Rs	1 haze P	
15	0 NW	3 E	3 S	0 haze Rs	0 M Fm	0 Fm	
16	2 N	4 E	3 SE	2 Pr Rs	9 Pr M Fm	1 P Fm	
17	2 ESE	3 S	2 SE	10 Pm Fm	10 Pm Fm ↑	10 Pm	
18	4 ESE	6 E	6 E	10 Pm	10 P Fm	10 P	
19	5 E	9 NE	1 NE	10 Pm; raining	10 Pm Fm M; raining	10 Pm; raining	
20	0 NE	5 E	2 NW	10 Pm mist	10 Pm; fine rain	10 Pm; raining	
21	3 W	5 SW	3 NW	7 Pm Fm → M	10 Pm	10 Pm	
22	8 N	4 ENE	0 E	10 Pm Fm ↓ mist	10 Pm	5 Fm	
23	6 NNE	3 NE	(0 E)	0 Rs Fm	0	(0 Fm)	
24	2 NE	2 E	0 E	9 Pr Pm Fm L	0 Pm Fm	1 Pm haze	
25	0 calm	4 N	7 NW	0 haze	0	1 Pm Fm	
26	9 NW	10 NNW	1 W	0	0	0 Fm →	
27	0 NW	5 ESE	2 S	0 Rs	5 Pr Rs haze	10 P	
28	11 ENE	9 E	6 E	10 Pm Fm →	10 Pm	10 Pm; a little rain	
29	7 NE	7 NE	7 NE	10 P; raining	10 Pm	10 P mist	Some thunder early.
30	6 N	2 NW	0 calm	10 P	10 Pm	10 Pm	
Sums	146	179	84	190	197	181	
Means	4.9	6.0	2.8	6.3	6.6	6.0	

Notes on the psychrometric observations for April, 1877.

The thermometers the readings of which are entered in the record for this month under the heading "Psychrometer" are those in use as a psychrometer in 1876 and several previous years, provided in 1877 with new scales and a new covering for the wet bulb. They were mounted March 31 as stated in the record for March. Comparisons between them made when both bulbs were dry are given on the last page but one, where also are stated the corrections derived from these comparisons and used in the computation of the relative humidity. The table below gives the differences between the relative humidities entered in the record, and those obtained, first, from the uncorrected readings of the psychrometer, and secondly, from No. 4 and Casella 3235, with the corrections used for the same purpose in January, February, and March. The covering of the bulb of Casella 3235 is thicker than that of the wet bulb of the repaired psychrometer; and considering this, the agreement of the observations is closer than might have been expected. In the table, the first column gives the difference obtained by subtracting the relative humidity given in the record from that obtained from the uncorrected readings of the psychrometer; the second gives the difference obtained by subtracting the relative humidity deduced from No. 4 and Casella 3235 from that deduced from the uncorrected readings of the psychrometer.

Date	8 A.M. 1	8 A.M. 2	2 P.M. 1	2 P.M. 2	8 P.M. 1	8 P.M. 2	Date	8 A.M. 1	8 A.M. 2	2 P.M. 1	2 P.M. 2	8 P.M. 1	8 P.M. 2	Date	8 A.M. 1	8 A.M. 2	2 P.M. 1	2 P.M. 2	8 P.M. 1	8 P.M. 2
1	2	0	2	0	2	−3	11	1		1		2		21	1		2		1	2
2	3	1	0	1	3	3	12	3		2		3		22	2	2	1	0	1	−1
3	2	1	3	−1	3	−16	13	3		2		2		23	0	−4	1	1	1	−6
4	3	4	3	−1	3	2	14	1		2		2		24	0	−2	1	0	1	−1
5	3	5	3	5	0	0	15	2		1		2		25	1	0	1	0	1	−1
6	3	2	2	2	3	3	16	2		1		1		26	1	−1	1	0	1	−6
7	3	1	2	3	3		17	1		1		2		27	1	−7	2	−8	1	−14
8	4		3		2		18	2		1		1		28	3	−1	1	−1	2	2
9	2		1		2		19	2		1		0		29	0	1	2	1	3	3
10	2		1		2		20	2		1		0		30	2	1	2	2	2	−2

Mean of column 1, 1.7. Mean of the 48 differences in column 2 −0.5. If the observations of 8 P.M. April 3 and 27 are rejected as evidently affected by some special cause (for instance, too little time allowed between wetting and reading), the mean is +0.2

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Meteorological Record of May 1877.

Date	Barometer 8 A.M.	Barometer 2 P.M.	Barometer 8 P.M.	Thermometer attached to barometer 8 A.M.	Thermometer attached to barometer 2 P.M.	Thermometer attached to barometer 8 P.M.	Psychrometer Dry bulb 8 A.M.	Psychrometer Dry bulb 2 P.M.	Psychrometer Dry bulb 8 P.M.	Psychrometer Wet bulb 8 A.M.	Psychrometer Wet bulb 2 P.M.	Psychrometer Wet bulb 8 P.M.	Relative humidity* Guyot's Tables 8 A.M.	Relative humidity* Guyot's Tables 2 P.M.	Relative humidity* Guyot's Tables 8 P.M.
1	29.750	29.716	29.728	52.0	52.2	52.7	48.5	48.7	46.4	48.2	48.0	45.6	96	93	92
2	29.646	29.623	29.630	50.2	48.0	47.9	41.2	39.7	44.0	41.2	39.8	39.1	98	99	59
3	29.607	29.560	29.600	43.1	48.7	52.0	40.7	51.8	48.8	35.0	43.1	41.9	49	41	50
4	29.680	29.692	29.816	46.8	51.0	52.7	48.6	52.3	46.0	42.4	46.1	42.1	54	57	68
5	29.991	29.992	30.012	46.0	52.5	54.5	47.5	60.3	48.9	41.0	46.9	42.5	51	27	52
6	29.986	29.938	29.904	48.8	53.8	51.7	46.6	52.4	44.4	41.4	45.4	42.0	59	52	79
7	29.894	29.850	(29.852)	46.8	53.1	(53.3)	50.5	52.1	(48.9)	43.9	44.9	(44.9)	53	51	(69)
8	29.827	29.815	29.835	48.1	54.3	56.0	47.6	49.8	44.0	43.4	44.6	42.1	66	62	83
9	29.795	29.737	29.758	48.0	49.2	49.1	41.3	46.3	39.9	38.1	41.4	39.4	71	61	94
10	29.788	29.857	(30.024)	47.1	47.2	(49.6)	39.4	40.6	(41.3)	38.6	40.6	(41.0)	91	98	(96)
11	30.159	30.179	30.259	47.0	52.0	54.5	45.2	54.8	46.6	40.7	48.1	43.4	63	56	74
12	30.302	30.271	30.275	48.7	55.0	58.0	51.7	65.6	52.7	47.7	52.9	48.2	71	36	68
13	30.258	30.202	30.197	52.0	58.8	62.7	50.6	72.3	61.1	49.8	56.2	51.5	44	32	49
14	30.221	30.137	30.102	55.8	61.7	67.9	60.3	75.7	†66.8	51.8	56.9	†55.6	51	24	†44
15	30.114	30.051	30.050	60.5	66.2	67.4	64.9	79.9	69.0	55.0	62.3	57.8	47	31	46
16	30.056	29.977	29.915	62.4	68.0	70.9	61.1	75.0	69.6	55.1	65.4	62.5	64	56	64
17	29.895	29.950	29.991	65.0	71.0	67.0	69.4	66.5	54.7	64.9	60.2	51.5	77	66	78
18	30.012	29.900	29.756	60.8	66.4	66.1	57.0	65.7	67.6	54.2	59.4	65.9	81	66	90
19	29.856	29.919	29.936	66.5	72.1	71.9	72.8	70.5	65.6	63.4	61.2	59.7	55	55	68
20	29.859	29.821	29.828	65.7	68.1	69.4	69.4	70.0	65.2	63.1	63.9	60.4	68	69	73
21	29.928	29.822	29.750	62.3	65.0	64.9	52.4	59.8	56.0	49.2	52.8	53.6	77	58	83
22	29.554	29.480	29.594	60.4	63.6	60.1	58.2	57.1	49.9	56.9	57.2	48.2	85	99	86
23	29.631	29.674	29.730	56.4	62.7	60.8	57.3	59.3	54.0	49.4	51.4	51.2	51	53	80
24	29.730	29.750	29.801	56.0	55.2	54.8	45.9	45.2	47.6	45.8	45.0	46.2	98	97	87
25	29.832	29.820	29.858	53.0	56.0	57.3	46.7	54.5	48.2	45.2	49.7	48.2	86	68	98
26	29.951	29.987	30.034	52.8	55.5	58.2	50.4	57.8	51.4	47.4	52.6	49.7	77	67	87
27	30.165	30.199	30.215	54.2	59.1	60.7	50.2	56.1	51.3	46.7	50.4	47.4	73	63	66
28	30.258	30.212	30.200	54.0	63.7	66.4	58.5	73.8	62.7	52.4	60.8	57.9	63	43	72
29	30.246	30.203	30.157	60.2	70.5	70.6	67.1	77.9	66.7	60.0	61.6	60.2	63	34	66
30	30.114	30.058	29.994	63.1	72.7	73.2	67.6	80.9	69.0	60.2	65.7	61.6	62	40	62
31	29.991	30.000	30.012	66.0	74.9	76.0	71.2	82.9	71.6	62.5	66.6	64.4	58	38	63
Sums	928.096	927.392	927.813	1699.7	1848.2	1880.3	1688.8	1895.3	1699.9				2102	1792	2246
Means	29.939	29.916	29.929	54.8	59.6	60.7	54.5	61.1	54.8				68	58	72

Barometric means reduced to the freezing point: 8 A.M., 29.868; 2 P.M., 29.833; 8 P.M., 29.843.

The evening observations of May 7 (included in parentheses) were made at 7 P.M., and those of May 10 at 11 P.M.

Observations for comparison of thermometers, made at times when all the bulbs seemed dry.

Date	Time	Psychrometer Uncovered bulb	Psychrometer Covered bulb	No. 4	C. 3235	Date	Time	Psychrometer Uncovered bulb	Psychrometer Covered bulb	No. 4	C. 3236
4	7 5/6 A.M.	47.6	47.9	48.3	48.3	17	1 11/12 P.M.	63.6	63.6	64.3	65.7
4	1 11/12 P.M.	53.3	53.4	53.9	53.9	18	7 5/6 A.M.	55.0	55.3	56.3	53.0 (rain falling, damp).
5	7 11/12 A.M.	46.9	47.1	47.1	47.2	18	1 11/12 P.M.	66.0	66.3	66.9	67.5
5	1 5/6 P.M.	59.9	59.9	60.2	60.0	19	7 3/4 A.M.	72.2	72.4	72.8	72.8
7	7 5/6 A.M.	49.4	49.6			19	1 3/4 P.M.	70.3	70.5	70.8	71.0
8	1 11/12 P.M.	50.2	50.3	50.0	51.1	29	1 5/6 P.M.	78.4	78.5	79.1	78.8
15	1 11/12 P.M.	79.9	80.1	80.7	80.1						

* Relative humidity computed after subtracting 0.2 from each reading of the wet bulb. The corresponding diminution in the relative humidity is from 0 to 2.

Relative humidity computed from No. 4 and C. 3235, as in March, 1877; observations on opposite page.

Date	8 A.M.	2 P.M.	8 P.M.	Date	8 A.M.	2 P.M.	8 P.M.	Date	8 A.M.	2 P.M.	8 P.M.	Date	8 A.M.	2 P.M.	8 P.M.
1	96	95	95	9	73	63	92	17	76	70	78	25	86	69	93
2	96	100	60	10	93	95	(97)	18	71	69	90	26	74	65	93
3	50		47	11	68	60	92	19	58	60	77	27	71	62	81
4	56	57	71	12	74	42	71	20	70	71	85	28	57	47	74
5	60	36	67	13	48	27	59	21	79	58	87	29	64	34	74
6	62	56	84	14	53	24	†35	22	91	98	85	30	59	48	69
7	59	54	(76)	15	47	33	47	23	53	57	85	31	57	43	72
8	70	69	84	16	64	56	75	24	95	96	89	Means	69	60	77

† May 14, 8 P.M. Thermometers carefully read; relative differences of the psychrometer bulbs and of No. 4 and C. 3235 noticed as unusual.

All observations this month made by A. Searle.

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Harvard College Observatory

May 1877.

Date	External Thermometer No. 4				Casella 3235 (wet)			Extreme temperatures. Maximum, 8 A.M.		Minimum, 8 A.M.		Rainfall in inches.	Aurora	Zodiacal light
	8 A.M.	2 P.M.	8 P.M.	Mean, half weight to 2 P.M.	8 A.M.	2 P.M.	8 P.M.	Before setting	After setting	Before setting	After setting	Gauge C examined at 8 A.M.	8 P.M.	8 P.M.
1	49.1	49.3	47.0	48.30	49.0	49.0	46.7	59.5	48.9	41.2	48.1	0.177	Cloudy	Cloudy
2	42.0	40.2	44.7	42.72	42.0	40.6	40.0	51.0	42.0	41.1	41.1	0.276	‡Cloudy	Cloudy
3	41.2	52.1	49.2	46.58	35.8		42.1	44.6	41.3	34.0	40.3	0.463	‡Cloudy	‡Twilight
4	49.1	53.2	46.7	48.96	43.3	47.0	43.2	54.4	49.0	37.5	48.1	0.000	Twilight and clouds	‡Twilight and clouds
5	47.7	60.7	49.6	51.06	42.7	49.0	45.4	58.0	47.8	35.1	47.0	0.000	Twilight and clouds	Twilight and clouds
6	47.3	52.6	45.3	47.56	42.6	46.4	43.7	61.2	47.4	40.1	46.3	0.000	Twilight and clouds	‡Twilight and clouds
7	50.5	52.7	(49.3)	50.46	45.0	46.1	(46.2)	53.4	50.7	37.3	49.9	0.000	(Daylight)	(Daylight)
8	48.1	49.9	44.7	47.10	44.4	46.0	43.1	57.9	48.4	36.5	47.3	0.000	Twilight and clouds	‡Twilight and clouds
9	41.9	46.8	40.7	42.40	39.1	42.3	40.2	53.5	42.2	39.9	41.1	0.000	Cloudy	Cloudy
10	39.8	41.5	(41.9)	40.98	39.4	41.3	(42.0)	47.2	39.9	37.3	39.2	0.177	(Cloudy)	(Cloudy)
11	45.9	54.9	47.4	48.30	42.2	49.0	46.8	44.8	44.8	39.1	45.1	0.254	Twilight and clouds	‡Twilight and clouds
12	51.8	65.8	53.8	55.40	48.5	54.7	49.8	57.2	51.4	39.7	50.8	0.000	Twilight	Twilight
13	59.6	72.3	61.1	62.94	50.8	56.0	54.0	66.6	58.8	47.0	58.8	0.000	Twilight and clouds	Twilight and clouds
14	60.6	75.3	†67.1	66.14	52.6	57.0	†54.0	71.6	59.7	49.9	59.4	0.000	Cloudy	Cloudy
15	65.6	80.6	69.4	70.12	55.5	63.2	58.2	75.8	64.5	58.2	64.2	0.000	Cloudy	Cloudy
16	61.9	76.0	70.7	68.24	56.0	65.7	65.8	80.4	61.2	57.4	60.9	0.000	Cloudy	Moon and clouds
17	70.0	66.8	55.2	63.44	65.2	61.0	53.0	78.0	69.0	59.4	68.7	0.066	Cloudy	Cloudy
18	57.9	66.5	68.1	63.70	54.6	60.6	66.4	80.8	57.4	48.3	55.9	0.000	Moon and twilight	Moon and twilight
19	73.3	71.0	66.1	69.96	64.2	62.5	61.8	72.6	72.1	55.9	72.2	0.022	Moonlight	Moonlight
20	70.1	70.8	65.8	68.52	64.0	65.0	63.1	76.1	68.8	59.6	68.4	0.000	Cloudy	Cloudy
21	53.3	60.3	56.7	56.06	50.6	54.1	55.0	75.0	54.0	49.7	52.5	0.000	Cloudy	Cloudy
22	58.7	57.7	50.7	55.30	57.7	57.8	49.0	63.0	58.5	52.2	57.8	0.088	Cloudy	Cloudy
23	57.6	59.8	54.8	56.92	50.1	52.9	53.0	66.8	57.0	46.3	56.6	0.298	Cloudy	Cloudy
24	47.3	46.1	48.0	47.34	47.0	46.0	47.0	62.1	47.4	46.0	46.6	0.794	Cloudy	Cloudy
25	47.5	55.2	49.7	49.92	46.0	50.7	49.0	48.3	47.1	43.4	46.6	0.507	Cloudy	Cloudy
26	51.3	59.5	52.0	53.22	48.0	54.0	51.3	55.0	50.2	42.4	50.0	0.344	Cloudy	Cloudy
27	50.7	56.8	52.4	52.60	47.0	51.0	50.0	60.9	50.8	46.8	50.0	0.110	Twilight	Twilight
28	59.8	74.0	63.7	64.20	53.0	62.1	59.0	60.6	58.0	43.2	57.4	0.000	‡Twilight	Twilight
29	68.1	78.8	67.0	69.80	60.3	63.0	62.0	76.0	65.8	51.4	66.0	0.000	Twilight	Twilight
30	69.0	81.1	69.8	71.74	60.7	68.0	63.7	78.9	66.2	55.6	66.2	0.000	‡Twilight	Twilight
31	72.6	84.0	72.7	74.92	63.4	68.8	67.0	82.0	70.1	57.6	70.2	0.000	Cloudy	Cloudy
Sums	1709.3	1912.3	1721.3	1754.90				1973.2		1429.1		3.576		
Means	55.14	61.69	55.53	56.61				63.65		46.10				

Mean temperature for month {mean of 3 means for 8, 2, 8, with double weight given to the morning and evening observations} 56.61 Fahrenheit. Rainfall for month 3.58 inches.

Mean of the 3 means for 8, 2, 8, 57.45 — " —
" " " 2 " " 8, 8, 55.34 — " —
" " 57.45 and 55.34 56.39 — " — } See discussion of mean temperature from observations at 8, 2, 8, in large volume containing meteorological record for 1841 to 1852 inclusive.

Maximum temperature for month (May 31) 82.0 — " —
Minimum — " — " — " — (May 3) 34.0 — " —
— " — (reduced to standard of No. 4) 34.5 — " — See general remarks on observations of 1876.

‡ Additional notes on aurora and zodiacal light.

May 2, 10¼ P.M. Broken aurora over dark clouds, with some streamers.
May 3, after 8 P.M. Some aurora. A few faint streamers about 11 P.M. No zodiacal light visible at 10 P.M.
May 4, about 7 P.M. Zodiacal light suspected; not apparently crossing the Milky Way.
May 6, 9 P.M. Zodiacal light suspected.
May 8, 9¼ P.M. Zodiacal light suspected; but certainly not beyond Gemini.
May 11, about 9 P.M. Zodiacal light suspected; at least, the lighter part of the western sky reached higher south of Auriga than in Auriga.
May 28, 10½ P.M. Brilliant aurora in flashes, forming a corona and appearing half way to the southern horizon from the zenith. Color only white. It ~~avoa~~ disappeared.
May 30, about 10 P.M. Horizontal cloud of auroral light above and west of Cassiopeia.

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Meteorological Record of May 1877.

Date	Wind: Estimated velocity in miles per hour, and direction (of approach). 8 A.M.	2 P.M.	8 P.M.	Clouds: Amount on scale of 10 and kind, on Poey's system. For explanations, see notes in record for January and February 1877. 8 A.M.	2 P.M.	8 P.M.	Remarks.
1	0 calm	2 E	1 E	10 Pm fog	10 Pm fog	10 P	
2	4 NNW	6 N	11 NW	10 Pm Fm↓; raining	10 Pm; raining	9 Pm Fm	
3	15 NW	10 NW	4 SSW	1 M Fm	1 M Fm↘	2 Pm Fm	
4	2 WSW	10 WNW	1 NW	10 Pm Fm	8 Pm R M Fm→	3 Pm Fm	
5	0 W	0 W	3 S	0	5 Pr Rs	3 P Rs	
6	1 ENE	1 E	0 E	10 P	10 P	6 P Rs	
7	3 N	5 E	(1 E)	0 Pm Fm Rs	10 Pm M Fm	(10 Pm Fm)	
8	3 NE	6 SE	3 E	4 Pr Fm haze Rs	0 Pr Rs M Fm	6 P Rs Fm	
9	4 NE	8 NNE	10 NNE	10 Pm	10 Pm	10 Pm; raining	
10	4 N	6 N	(0 calm)	10 Pm Fm↓; raining	10 Pm Fm↓; raining	(10 Pm)	
11	2 NE	2 SE	2 SE	10 Pm	7 Pm M Fm Rs	2 Pm Fm Rs	
12	0 calm	4 SSE	5 S	4 Pr Pm Rs	5 Pm M Fm	0 P Fm	
13	0 WNW	4 SW	4 SSE	1 haze	3 haze Fm	2 P haze	
14	1 SW	6 W	5 WSW	8 haze	8 haze	10 haze	
15	0 W	5 WNW	2 NW	9 haze	9 haze	10 haze	
16	2 WNW	5 SW	2 W	10 haze P; raining	7 haze	4 haze P	
17	4 W	4 ESE	0 ENE	5 Pr Pm Rs Fm	10 Pm M Pr	9 P Fm→	Rain beginning about 7½ A.M., ending soon after 8.
18	0 calm	0 E	7 SW	5 haze Pr	10 P M↘ Fm↘	3 P M Fm	A little rain, thunder, and lightning, at times.
19	9 N	4 E	5 S	1 haze Fm↓ Rs	5 Pr Rs Fm	1 P Fm	
20	1 NNE	0 E	0 calm	10 Pm	10 Pm	10 Pm	
21	3 NE	4 E	5 SE	10 Pm	10 Pm	10 Pm; raining	
22	5 S	3 E	4 N	10 Pm	10 Pm Fm↓; raining	10 Pm	Rain with thunder in the middle of the day.
23	5 N	4 SE	0 calm	0	5 Pm M Fm haze	10 Pm Fm	
24	3 ESE	4 NE	6 NW	10 Pm Fm↖; raining	10 Pm Fm↙; raining	10 Pm Fm	Rather clear at 10 P.M.
25	2 N	3 WNW	1 E	10 Pm Fm↓	9 Pm Fm	10 Pm Fm↓; a little rain.	Showers at times.
26	4 N	1 SE	2 E	10 Pm Fm↓	10 Pm Fm	10 Pm Fm	Showers about 5½ P.M., and in the evening.
27	4 NE	3 E	2 SE	10 Pm Fm↙	10 Pm Fm	0 Pm Fm Rs	
28	4 W	4 WSW	4 SSW	0 Rs Fm haze	1 M Fm Rs	0 Fm Rs	
29	0 WSW	4 SW	5 SSW	0 haze	2 M Fm	0 haze P Fm	
30	1 WSW	0 W	5 SSW	1 hazy	4 M Fm haze	1 P Fm haze	
31	1 NW	0 S	3 S	5 Pr haze	5 P Fm haze	5 P Fm haze	
Sums	87	118	103	194	224	186	
Means	2.8	3.8	3.3	6.3	7.2	6.0	

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Harvard College Observatory. June 1877.

Date	Barometer 8 A.M.	Barometer 2 P.M.	Barometer 8 P.M.	Thermometer attached to barometer 8 A.M.	Thermometer attached to barometer 2 P.M.	Thermometer attached to barometer 8 P.M.	Psychrometer Dry bulb 8 A.M.	Psychrometer Dry bulb 2 P.M.	Psychrometer Dry bulb 8 P.M.	Psychrometer Wet bulb 8 A.M.	Psychrometer Wet bulb 2 P.M.	Psychrometer Wet bulb 8 P.M.	*Relative humidity Guyot's Tables 8 A.M.	*Relative humidity Guyot's Tables 2 P.M.	*Relative humidity Guyot's Tables 8 P.M.
1	30.124	30.139	30.132	68.2	80.3	79.4	73.4	85.9	71.2	66.0	70.7	65.9	65	43	73
2	30.130	30.054	30.027	71.0	77.0	78.7	72.9	86.8	72.9	67.2	70.5	63.1	72	41	54
3	29.970	29.913	29.840	69.4	76.9	77.0	71.9	79.7	70.0	63.8	67.7	63.8	61	50	68
4	29.809	29.800	29.828	71.0	76.3	75.0	70.7	76.4	69.3	63.3	59.9	58.8	64	32	49
5	29.884	29.870	29.864	66.6	72.6	72.6	66.4	73.5	65.0	58.0	64.5	60.2	56	58	73
6	29.850	29.809	29.872	67.8	68.2	66.3	60.4	68.8	55.7	58.4	65.9	56.0	87	84	100
7	29.933	29.928	29.948	62.5	64.2	64.4	55.8	57.8	57.4	55.7	57.5	57.2	98	97	97
8	29.992	30.020	30.054	61.5	64.7	66.4	57.5	66.4	59.3	57.3	64.3	58.1	97	87	91
9	30.050	30.000	29.948	63.3	68.8	71.2	60.6	72.0	69.0	59.4	67.0	67.0	91	75	88
10	29.812	29.760	29.840	67.9	72.9	73.6	71.8	78.6	71.3	69.6	73.2	67.7	88	75	81
11	30.110	30.130	30.121	66.2	68.4	68.9	61.3	67.6	61.3	54.5	60.2	57.8	61	62	79
12	30.250	30.281	30.252	62.9	68.6	69.0	64.2	67.2	62.8	60.2	58.5	61.2	77	55	90
13	30.268	30.230	30.200	65.1	70.8	73.1	64.0	77.0	67.8	61.3	†71.3	63.9	84	73	79
14	30.147	30.078	30.197	67.9	74.8	74.7	72.5	82.6	69.8	‡67.7	71.0	65.0	76	53	75
15	30.227	30.169	30.112	69.7	75.2	76.5	73.5	76.2	73.0	69.9	63.6	68.9	48	45	79
16	29.955	29.836	29.808	71.0	73.4	74.9	69.3	77.9	72.9	67.6	72.2	70.6	90	74	88
17	29.928	29.954	30.050	70.4	72.9	73.7	71.0	76.4	67.7	61.8	60.6	56.8	56	34	46
18	30.169	30.104	30.032	66.1	72.8	74.2	70.7	80.3	67.6	60.3	64.6	59.4	50	38	58
19	29.877	29.806	29.888	69.0	75.0	81.1	74.4	84.8	77.2	68.8	75.7	65.2	73	63	49
20	30.194	30.175	30.126	68.9	72.0	72.9	63.6	73.9	64.2	53.2	57.3	58.2	45	29	66
21	30.028	29.873	29.718	65.8	70.3	72.0	67.5	72.7	68.4	60.1	63.3	64.5	62	55	79
22	29.632	29.717	29.898	70.2	71.0	68.8	68.5	69.5	60.0	63.4	56.0	51.5	73	37	51
23	30.106	30.016	29.982	61.1	66.8	70.7	61.2	72.0	63.7	51.2	56.1	53.6	44	30	45
24	29.940	29.850	29.824	64.4	69.6	72.0	65.4	76.8	67.4	57.6	65.4	62.7	58	50	74
25	29.753	29.736	29.798	68.2	73.9	79.5	74.0	83.2	78.2	68.8	70.8	65.7	75	51	47
26	29.949	29.918	29.914	71.8	73.0	70.3	67.5	62.9	60.4	58.4	57.1	58.4	53	67	87
27	29.988	30.047	30.058	65.8	70.0	70.2	60.9	66.8	60.0	54.9	57.5	54.5	65	52	66
28	30.100	30.090	30.110	63.7	69.8	70.7	65.2	71.1	64.5	59.8	61.6	56.1	70	54	55
29	30.143	30.098	30.140	66.0	70.8	72.2	70.4	78.5	60.8	60.0	63.3	53.3	50	38	56
30	(30.136)			(65.1)			(62.6)			(56.2)			(64)		
Sums	900.454	869.401	869.581	2008.5	2081.0	2110.0	2009.1	2163.3	1928.8				2053	1602	2043
Means	30.015	29.979	29.986	67.0	71.8	72.8	67.0	74.6	66.5				68	55	70

Barometric means reduced to the freezing point: 8 A.M., 29.912; 2 P.M., 29.863; 8 P.M., 29.867.

The morning observations of June 30 (included in parentheses) were made at $8\frac{1}{6}$ A.M.

Observations for comparison of thermometers, made at times when all the bulbs seemed dry.

Date	Time	Psychrometer Uncovered bulb	Psychrometer Covered bulb	No. 4	C.3235
1	$7\frac{11}{12}$ A.M.	72.8	73.3	73.8	72.6
2	$1\frac{11}{12}$ P.M.	86.9	87.1	88.1	87.2
27	$1\frac{5}{6}$ P.M.	66.5	66.7	67.2	67.8

* Relative humidity computed after subtracting 0.2 from each reading of the wet bulb. The corresponding diminution in the relative humidity is from 0 to 2.

Additional observations, for comparison with others made on Mt. Washburn.

	June 22 11 A.M.	June 22 5 P.M.	June 23 11 A.M.	June 23 5 P.M.
Barometer	29.694	29.782	30.072	29.994
Attached thermometer	70.5	71.3	62.0	70.9
Psychrometer Dry bulb	69.8	67.3	69.0	72.2
Psychrometer Wet bulb	58.4	54.9	53.8	56.2
No. 4	70.3	67.8	68.6	72.8
C.3235 (wet)	59.2	55.8	55.0	57.3
Wind	17 NW	13 NNW	1 WNW	4 WSW
Clouds	4 N Fm —	1 N Fm Ra	0 Rs	5 Rs Ra N Fm

† June 13, 2 P.M. Wet bulb of psychrometer appeared damp but not wet. Probably too nearly dry from evaporation, although wetted only 5 minutes before reading.

‡ June 14, 8 A.M. The morning sun probably makes both No. 4 and the wet bulb of the psychrometer stand too high. They are both near the eastern side of the shelter. Possibly the wet bulb may not have been wet enough, but this is not likely.

All observations this month by A. Searle, except those of June 30, which were made by E. C. Pickering.

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Meteorological Record of June 1877.

Date	External Thermometer No. 4				Casella 3235 (wet)			Extreme temperatures. Maximum, 8 A.M.		Minimum, 8 A.M.		Rainfall in inches.	*Aurora	*Zodiacal light.
	8 A.M.	2 P.M.	8 P.M.	Mean, half weight to 2 P.M.	8 A.M.	2 P.M.	8 P.M.	Before setting	After setting	Before setting	After setting	Gauge C examined at 8 A.M.	8 P.M.	8 P.M.
1	74.7	86.9	73.0	76.46	66.6	72.0	67.3	83.2	72.1	60.6	72.0	0.000		
2	74.1	87.8	74.0	76.80	68.2	72.0	66.0	86.3	72.5	63.4	72.1	0.000		
3	73.6	80.2	70.9	73.84	64.5	68.9	65.4	87.1	71.5	61.1	71.1	0.000		
4	71.3	77.1	69.8	71.86	63.9	60.5	60.3	81.6	70.7	65.4	70.0	0.000		
5	68.3	74.8	66.0	68.68	58.8	66.0	62.0	77.8	66.3	56.5	65.6	0.000		
6	60.8	69.5	56.2	60.70	59.0	66.6	56.6	76.0	61.0	58.8	60.3	0.110		
7	56.1	58.5	58.0	57.34	56.1	58.0	58.0	69.7	56.0	54.2	55.2	1.632		
8	58.1	67.1	59.9	60.62	57.9	65.0	59.2	59.6	57.4	54.7	57.1	0.254		
9	61.0	72.8	70.0	66.96	60.0	68.0	67.9	67.0	61.0	57.0	60.4	0.022		
10	72.0	80.2	71.8	73.56	69.7	74.7	68.2	76.0	71.0	60.3	70.9	0.000		
11	62.7	68.7	62.3	63.74	55.8	60.9	59.0	79.8	61.9	55.8	60.9	0.000		
12	65.5	67.7	63.4	65.10	60.8	59.6	62.4	69.2	64.0	53.8	63.9	0.000		
13	64.8	77.6	68.7	68.92	61.0	69.4	64.9	70.7	64.0	58.8	63.4	0.000		
14	†74.1	83.8	70.7	74.68	67.9	71.7	66.0	77.4	71.4	60.6	71.2	0.000		
15	74.4	76.7	74.0	74.70	63.1	64.5	70.0	83.9	73.0	63.4	73.2	0.011		
16	70.1	79.4	73.9	73.48	68.0	72.8	71.1	80.4	69.5	66.3	69.0	0.055		
17	72.4	76.8	68.4	71.68	62.4	61.7	57.8	79.2	70.6	64.1	70.1	0.000		
18	72.9	79.9	68.7	72.62	61.4	66.0	61.9	77.0	69.6	53.2	69.2	0.000		
19	76.0	85.7	78.0	78.74	69.0	76.0	66.1	79.4	73.5	61.8	73.2	0.000		
20	65.8	74.4	65.3	67.32	53.9	58.9	59.7	86.3	63.3	55.2	62.8	0.000		
21	69.6	73.9	69.2	70.30	60.5	63.5	65.1	75.6	67.0	52.2	66.1	0.000		
22	69.1	70.0	60.2	65.72	62.7	57.0	52.6	76.9	68.9	65.2	68.0	0.177		
23	62.4	72.6	64.4	65.24	51.9	57.0	55.0	71.3	61.0	47.3	60.3	0.000		
24	66.6	77.8	68.4	69.56	58.1	66.5	64.2	73.2	64.9	54.1	64.1	0.000		
25	75.1	84.0	78.9	78.40	69.0	71.2	66.8	78.5	73.3	62.9	73.2	0.000		
26	68.0	63.5	60.9	64.26	59.6	58.0	59.3	86.0	68.0	63.0	67.3	0.000		
27	61.4	67.1	60.4	62.14	56.0	58.8	56.5	70.6	61.6	54.2	60.9	0.000		
28	66.7	71.9	65.1	67.10	60.0	63.0	57.3	68.9	64.2	50.8	63.8	0.000		
29	72.5	79.0	61.7	69.48	60.5	65.0	56.4	‡81.0	69.0	55.7	69.0	0.000		
30	(61.8)				(58.0)			(78.9)	(55.2)	(54.2)	(61.2)			
Sums	2041.9	2185.4	1952.2	2010.00				2308.5		1744.6		2.261		
Means	68.06	75.36	67.32	69.31				76.95		58.15				

Mean temperature for month { mean of 3 means for 8, 2, 8, with double weight given to the morning and evening observations } 69.22 Fahrenheit. Rainfall for month 2.26 inches.

Mean of the 3 means for 8, 2, 8, 70.25 — " —
" " " 2 " " 8, 8, 67.69 — " —
" " 70.25 and 67.69 68.97 — " —

} See discussion of mean temperature from observations at 8, 2, 8, in large volume containing meteorological record for 1841 to 1852 inclusive.

Maximum temperature for month (June 3) 87.1 — " —
Minimum " " " (June 23) 47.3 — " —
— " — (reduced to standard of No. 4) 47.8 — " — See general remarks on observations of 1876.

*Aurora and zodiacal light not specially looked for at 8 P.M. this month, and none seen then or at other times.

†June 14, 8 A.M. See note on last page. ‡June 29. Maximum reading 81.0 perhaps an error for 71.0; see record for June 28.

Relative humidity computed as in March 1877 from No. 4 and C. 3235; observations on this page.

Date	8 A.M.	2 P.M.	8 P.M.	Date	8 A.M.	2 P.M.	8 P.M.	Date	8 A.M.	2 P.M.	8 P.M.	Date	8 A.M.	2 P.M.	8 P.M.
1	63	46	72	9	94	77	89	17	54	38	47	25	72	51	50
2	73	44	63	10	88	77	82	18	48	44	66	26	58	70	90
3	58	54	73	11	59	61	81	19	68	63	50	27	67	58	75
4	64	33	55	12	75	59	94	20	39	34	70	28	66	58	57
5	53	60	79	13	79	64	80	21	56	53	79	29	46	43	67
6	89	86	100	14	71	53	77	22	68	39	55	30	(78)		
7	97	97	97	15	50	48	81	23	43	31	49	Sums	2018	1653	2167
8	96	89	95	16	89	71	86	24	57	52	78	Means	67	57	74

A comparison of these relative humidities with those obtained by the psychrometer will show the effect of the morning sun on the woodwork; see note on observation at 8 A.M. June 14. The thickness of the rag upon the bulb of C. 3235 probably makes it less sensitive than the wet bulb of the psychrometer; so that, other things being equal, the psychrometer should give the least relative humidity.

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Harvard College Observatory.

June 1877.

Date	Wind. Estimated velocity in miles per hour, and direction (of approach). 8 A.M.	2 P.M.	8 P.M.	Clouds. Amount on scale of 10, and kind, on Rây's system. For explanations see notes in record for January and February, 1877. 8 A.M.	2 P.M.	8 P.M.	Remarks.
1	1 SW	1 WSW	0 calm	4 haze Fm	4 haze	5 Pr Rs haze	
2	0 W	3 SW	10 SSW	5 haze	5 P Fm haze	4 P Fm haze	
3	4 NW	1 ESE	1 E	5 P Rs haze	4 haze	10 Pm Fm	
4	5 W	15 W	2 W	10 P Fm	5 haze Fm	2 P haze	
5	4 NW	0 WSW	1 NW	2 P Rs	10 Pm	10 Pm	
6	2 E	6 SSE	4 NE	10 Pm	10 Pm	10 Pm; heavy rain	{Shower about 5½ P.M.; others at about 7 P.M. and later; some thunder & lightning.}
7	5 NE	6 ENE	3 NE	10 Pm mist	10 Pm mist	10 Pm mist, raining.	Much rain about noon.
8	1 N	0 NE	0 E	10 Pm mist	10 Pm fog	10 Pm Fm —	
9	1 E	4 E	4 S	10 Pm fog	10 Pm M Fm	10 Pm Fm	
10	4 SSW	6 SSW	4 SW	10 Pm Fm	10 Pm M Fm	10 Pm Fm →	
11	0 calm	0 SE	1 SSE	10 Pm Fm	10 Pm Fm	9 Pm Fm Rs	
12	2 SE	5 SE	1 ESE	8 P Fm	9 P Fm	10 Pm	A few drops of rain in the evening.
13	1 SW	5 S	7 SW	10 Pm	0 P M Fm	0 Rs	
14	8 SW	4 WSW	8 SW	0 P M Fm Rs	10 Pm M Fm	10 Pm M Fm	{A little rain and thunder about 4 P.M. Cleared off soon after 8 P.M.}
15	1 E	6 E	4 S	9 Pm Fm	7 Pm Fm	10 Pm Fm	Clear part of the evening.
16	7 S	6 SW	3 SW	10 Pm Fm s; raining	10 Pm Fm →	9 Pm M Fm	
17	6 NNW	11 NW	0 calm	0 Fm	0 Fm	0 Fm	
18	0 WNW	7 SW	4 SSW	0 Rs Fm	0 Rs Fm	0 P Rs	
19	6 SW	6 W	4 WNW	9 Pm Fm	4 M Fm	2 Fm	
20	3 N	0 W	7 SSW	0 P Rs	0	0 Rs Fm	
21	4 SW	6 SW	4 SW	0 Rs Fm	10 Pm Fm	10 Pm Fm →; {a few drops of rain}	A little rain in the evening.
22	11 NNW	15 NNW	6 NW	8 Pm M Fm Pr Rs	3 M Fm Pr	1 P Fm	
23	8 NW	3 W	7 SW	0	1 P Rs Fm	1 P Rs Fm	
24	5 SW	6 SW	6 SSW	9 Pr Rs	8 Pr Rm Rs M Fm	1 Pr Rs	
25	8 SW	5 WSW	6 WSW	10 Pm Fm	8 Pm Pr M Fm	5 Pm M Fm →	
26	4 ENE	5 NE	3 NE	10 Pm Fm	10 Pm	10 Pm Fm →	
27	2 E	3 E	2 SE	10 Pm	9 Pm Fm	1 Pm Fm	
28	1 S	4 E	6 S	9 P Rs Fm	10 Pm M Fm	10 Pm Fm	
29	4 S	6 SW	4 S	7 Pm Fm	1 Pm Pr Fm	1 P Rs	
30	(1)			(8)			
Sums	109	145	112	203	188	171	
Means	3.6	5.0	3.9	6.8	6.5	5.9	

June 22, 5 to 6 P.M. North meridian mark examined with telescopes in the principal dome. The monument was visible in the East Equatorial, just east of the upper part of the house lately built a little east of the West Medford flagstaff and on the same hill with the flagstaff; the lower part of this house was hidden by the houses on the northwest spur of College Hill. The comet-seeker showed that from the floor of the dome the monument was entirely hidden by these houses on College Hill, although the small pole on the monument could still be seen. Nothing can now be seen of the mark through the East Transit Circle or from any part of the lower story of the Observatory.

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Meteorological Record of July 1877.

Date	Barometer 8 A.M.	Barometer 2 P.M.	Barometer 8 P.M.	Thermometer attached to barometer 8 A.M.	Thermometer attached to barometer 2 P.M.	Thermometer attached to barometer 8 P.M.	Psychrometer Dry bulb 8 A.M.	Psychrometer Dry bulb 2 P.M.	Psychrometer Dry bulb 8 P.M.	Psychrometer Wet bulb 8 A.M.	Psychrometer Wet bulb 2 P.M.	Psychrometer Wet bulb 8 P.M.	Relative humidity Guyot's Tables 8 A.M.	Relative humidity Guyot's Tables 2 P.M.	Relative humidity Guyot's Tables 8 P.M.
1	29.871	29.806	29.726	67.8	69.7	73.0	67.8	76.9	70.4	64.4	71.5	68.4	81	75	89
2	29.728	29.807	29.890	69.7	73.7	72.4	74.7	72.6	66.1	66.0	61.6	60.0	60	49	67
3	29.994	29.941	29.900	67.5	73.1	75.4	70.0	82.0	70.5	62.6	68.7	64.8	63	47	71
4	29.918	29.942	29.978	69.8	72.0	73.8	62.1	75.6	66.2	58.0	62.9	61.3	76	45	73
5	30.010	29.956	29.900	66.0	73.1	76.8	70.8	82.9	71.5	60.2	65.5	65.9	50	34	72
6	29.906	29.920	29.965	69.7	72.2	71.0	61.3	71.2	64.3	60.7	62.3	61.8	95	57	85
7	30.073	30.093	30.104	67.3	73.0	72.2	67.9	71.6	63.3	62.1	63.9	59.7	69	63	79
8	30.062	29.992	29.943	67.0	72.2	74.0	71.1	79.6	70.6	65.5	67.5	63.3	71	50	64
9	29.811	29.736	29.667	70.2	74.7	74.1	71.2	78.5	69.4	67.6	73.7	69.0	81	77	97
10	29.718	29.762	29.809	71.7	77.0	75.9	74.1	74.2	68.2	70.8	71.0	66.0	83	84	87
11	29.924	29.933	29.958	71.2	75.7	78.4	70.8	83.0	74.2	64.9	72.8	65.5	70	59	60
12	30.032	30.031	30.031	72.4	76.2	79.1	70.2	78.3	71.4	59.6	63.3	63.0	49	39	59
13	30.002	29.950	29.954	71.5	75.8	77.0	68.5	75.5	68.2	61.1	64.2	60.8	62	57	62
14	29.984	29.980	29.992	70.0	73.0	73.6	64.7	74.5	66.4	57.0	63.5	60.1	58	51	66
15	30.035	30.006	29.976	66.8	74.3	77.8	70.4	78.8	74.6	62.0	64.4	66.4	59	41	62
16	29.968	29.981	29.953	73.0	75.1	76.9	73.9	75.8	72.5	68.9	70.3	69.3	75	74	83
17	29.970	29.909	29.886	73.7	75.9	77.4	72.4	82.9	73.6	70.8	77.2	71.9	91	75	91
18	29.997	29.962	29.956	72.9	78.3	80.2	75.1	87.0	75.7	68.9	74.8	72.0	71	54	82
19	29.869	29.771	29.836	75.7	77.8	78.3	76.6	81.7	70.7	72.4	74.7	69.0	79	69	90
20	29.864	29.885	29.913	74.6	77.2	77.4	72.7	81.2	72.7	70.3	73.4	70.8	87	67	90
21	30.006	30.049	30.099	74.4	77.4	78.6	73.7	82.9	74.9	71.4	75.5	72.3	88	69	86
22	30.202	30.217	30.234	75.0	78.9	81.1	75.1	80.3	75.4	67.9	70.0	69.0	66	56	70
23	30.265	30.244	30.201	76.0	77.8	79.8	75.8	80.5	73.9	68.6	70.2	67.3	66	57	68
24	30.209	30.132	30.050	73.4	77.2	80.1	71.4	80.7	74.7	63.6	63.9	66.0	62	35	60
25	29.913	29.860	29.892	72.6	79.2	80.7	75.2	89.0	71.8	65.9	71.8	66.2	58	40	72
26	29.920	29.877	29.935	72.8	78.8	78.6	68.8	78.2	66.5	65.4	69.9	64.5	81	63	88
27	30.115	30.170	30.182	71.0	71.8	71.7	62.1	64.8	62.7	61.2	62.5	61.5	94	86	91
28	30.108	30.049	30.000	69.5	70.8	71.4	63.7	67.8	64.6	62.4	65.3	63.1	92	85	90
29	29.953	29.936	29.898	69.8	73.1	75.0	65.4	73.3	67.1	64.7	68.9	66.1	95	78	94
30	29.893	29.900	29.945	74.7	73.0	74.3	68.2	72.0	69.5	67.4	71.3	68.3	93	95	93
31	30.085	30.146	30.200	71.0	75.0	74.7	66.7	73.3	66.4	65.0	67.6	64.8	90	72	90
Sums	929.405	928.943	928.973	2205.7	2323.0	2360.7	2172.4	2406.6	2168.0				2315	1903	2431
Means	29.981	29.966	29.967	71.2	74.9	76.2	70.1	77.6	69.9				75	61	78

Barometric means reduced to the freezing point: 8 A.M., 29.866; 2 P.M., 29.841; 9 P.M., 29.839.

Observations for comparison of thermometers, made at times when all the bulbs seemed dry.

July 4, 1 11/12 P.M. Uncovered bulb of psychrometer 75.5; covered bulb of psychrometer 75.5; No. 4, 75.8; C. 3235, 75.8
5, 1 11/12 P.M. " " " " 83.2; " " " " 83.4; — " —, 83.9; — " — 83.1

Relative humidity computed after subtracting 0.2 from each reading of the wet bulb. The corresponding diminution in the relative humidity is from 0 to 2.

Additional observations, for comparison with others made on Mt. Monadnock and on Mt. Washington.

Date	Time	Barometer	Attached thermometer	Psychrometer Dry bulb	Psychrometer Wet bulb	No. 4	C. 3235 (wet)	Wind	Clouds
3	5 P.M.	29.908	75.7	78.9	66.8	80.0	67.9	3 SW	5 P Rs
4	11 A.M.	29.944	69.4	69.5	62.2	69.9	63.1	4 NE	4 Pu Fm Rs
14	11 A.M.	29.984	76.2	76.7	59.5	71.2	60.6	5 N	9 Pu M Fm
14	5 P.M.	29.980	75.6	71.9	60.1	73.0	62.4	1 SE	1 M Fm
15	11 A.M.	30.023	70.0	76.4	61.8	77.1	62.9	1 WNW	3 Pu Rs M Fm
15	5 P.M.	29.980	77.9	80.3	67.6	81.2	68.9	9 WNW	1 Pu Fm Rs
16	11 A.M.	30.008	74.3	76.4	67.0	77.8	71.9	1 SE	10 Pu Fm
16	5 P.M.	29.951	76.2	79.5	71.2	80.6	72.2	2 SSW	2 P haze Fm
17	5 P.M.	29.976	77.6	78.3	73.9	78.4	74.7	5 S	10 Pu
18	11 A.M.	29.940	74.3	83.7	70.7	84.1	71.5	2 WSW	1 Pu Rs M Fm
18	5 P.M.	29.950	80.7	83.15	73.6	84.6	74.9	7 S	9 Pu Rs M Fm
19	11 A.M.	29.811	76.4	80.3	74.1	81.1	74.7	6 S	10 Pu M Fm
19	5 P.M.	29.799	78.7	78.8	73.6	79.7	74.4	13 SSW	10 Pu M Fm
20	11 A.M.	29.894	75.6	78.6	74.0	79.0	75.7	6 S	10 Pu Fm
20	5 P.M.	29.906	78.0	74.8	71.3	75.8	72.3	4 SSW	10 Pu Fm
21	11 A.M.	30.044	75.7	77.2	73.5	78.5	74.4	3 SSW	10 Pu Fm
21	5 P.M.	30.068	78.7	77.9	73.7	78.9	74.8	4 S	10 Pu Fm M
22	11 A.M.	30.212	78.0	78.9	68.4	81.9	69.5	3 NNE	9 Pu Fm M
22	5 P.M.	30.221	81.2	78.4	66.3	79.4	68.0	3 E	9 Pu Fm M R Rs
23	5 P.M.	30.204	79.4	80.9	68.9	81.8	69.8	0 WNW	9 P Fm
24	11 A.M.	30.198	74.5	76.8	64.6	77.5	65.6	0 NW	5 P Rs Fm
24	5 P.M.	30.068	80.2	81.7	66.4	82.4	67.5	2 W	0 haze Fm

All observations this month by A. Searle.

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Harvard College Observatory.

July 1877.

Date	External Thermometer No. 4				Casella 3235 (wet)			Extreme temperatures				Rainfall in inches.	*	*
								Maximum, 8 A.M.		Minimum, 8 A.M.				
	8 A.M.	2 P.M.	8 P.M.	Mean, half weight to 2 P.M.	8 A.M.	2 P.M.	8 P.M.	Before setting	After setting	Before setting	After setting	Gauge C examined at 8 A.M.		
1	68.5	77.7	71.2	71.42	65.0	72.0	69.0	75.8	68.0	56.9	67.3	†0.088		
2	76.2	73.2	66.7	71.80	66.8	62.3	60.9	79.0	71.5	62.2	73.2	0.783		
3	71.3	82.9	71.7	73.78	63.1	69.5	67.0	75.7	69.7	58.4	69.0	0.000		
4	63.4	75.9	67.4	67.50	58.9	64.0	63.9	82.0	63.0	61.8	62.7	0.055		
5	72.7	83.8	72.7	74.92	60.8	67.0	68.0	76.7	70.0	57.9	69.5	0.011		
6	62.8	71.9	65.0	65.50	61.4	63.6	62.3	84.6	61.0	59.9	61.4	0.254		
7	69.0	72.4	64.5	67.88	62.9	65.1	62.0	72.2	67.6	58.8	67.1	0.011		
8	72.2	79.8	71.2	73.32	66.0	68.2	65.0	74.0	70.6	58.8	70.2	0.000		
9	71.9	80.2	70.4	72.96	68.0	74.6	69.4	82.4	71.0	65.3	70.6	0.000		
10	75.0	§77.0	69.7	73.28	71.2	71.7	67.7	81.6	73.0	66.9	73.3	0.463		
11	72.0	83.8	74.9	75.52	65.8	74.0	67.3	‡85.9	70.2	62.9	70.0	0.496		
12	71.4	79.0	72.8	73.48	60.2	64.8	67.1	83.0	69.8	64.2	69.2	0.000		
13	69.4	76.3	68.7	70.50	61.8	66.1	62.9	79.9	68.5	61.7	68.0	0.000		
14	65.3	75.1	67.8	68.26	57.8	64.6	64.0		64.7	58.0	63.9	0.000		
15	71.1	79.6	75.6	74.60	62.8	65.2	69.0	74.7	70.0	57.3	69.4	0.000		
16	75.1	77.0	73.7	74.92	69.6	71.9	70.9	80.9	73.7	65.7	73.0	0.000		
17	73.2	83.9	74.3	75.78	71.6	77.8	72.8	79.4	72.8	69.1	72.1	0.000		
18	75.8	87.6	76.7	78.52	69.6	75.9	73.0	83.0	74.5	64.3	74.1	0.000		
19	77.5	82.3	71.7	76.14	73.0	75.1	69.9	86.8	76.3	70.2	76.1	0.000		
20	73.7	82.5	73.5	75.38	71.0	73.9	71.3	82.3	73.0	68.6	72.2	0.088		
21	74.6	84.6	75.7	77.04	72.0	76.4	73.0	82.0	73.6	68.4	73.1	0.143		
22	75.3	81.0	76.4	76.88	68.5	71.6	72.1	83.3	74.6	69.1	74.2	0.000		
23	76.5	81.1	74.7	76.70	69.1	70.9	69.0	83.7	75.6	68.0	75.0	0.000		
24	72.0	81.3	75.4	75.22	64.6	64.9	67.6	81.6	71.2	64.9	70.8	0.000		
25	75.5	89.6	73.2	77.40	66.9	72.9	67.2	81.6	74.5	65.7	74.3	0.000		
26	69.9	79.4	67.2	70.72	66.0	¶		89.0	69.0	61.3	68.0	0.000		
27	62.7	65.2	63.2	63.40				85.2	63.0	61.1	61.9	0.000		
28	64.2	68.5	65.1	65.42				66.6	64.7	61.7	63.6	0.000		
29	65.9	74.1	67.8	68.30				69.8	66.0	63.1	65.1	0.188		
30	68.9	72.8	70.1	70.16				76.6	68.7	65.0	67.8	0.000		
31	67.3	73.8	66.9	68.44				74.3	67.0	64.0	66.2	0.077		
Sums	2200.3	2433.3	2195.9	2245.14				2393.6		1961.2		2.657		
Means	70.98	78.49	70.84	72.42				79.79		63.26				

Mean temperature for month {mean of 3 means for 8, 2, 8, with double weight given to the morning and evening observations} 72.43 Fahrenheit. Rainfall for month 2.66 inches.

Mean of the 3 means for 8, 2, 8, 73.44 — " — } See discussion of mean temperature from observations at 8, 2, 8, in large volume containing meteorological record for 1841 to 1852 inclusive.
" " " 2 " " 8, 8, 70.91 — " —
" " 73.44 and 70.91, 72.17 — " —

Maximum temperature for month (July 26) 89.0 — " —
Minimum " " " (July 1) 56.9 — " —
— " — (reduced to standard of No. 4) 57.4 — " — See general remarks on observations of 1876.

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* Aurora and zodiacal light not specially looked for at 8 P.M. this month, and none seen then or at other times.
† Part of the rain measured July 1 fell before 8 A.M. June 30. § July 10, 2 P.M. thermometers falling as No. 4 lags as usual.
‡ The maximum 85.9 recorded July 11 is doubtless correct. At 2 P.M. July 10 the temperature had fallen considerably.
¶ C. 3235 removed July 26 for use in closet for clocks in cellar of West Wing.

Relative humidity computed as in March 1877 from No. 4 and C. 3235 observations on this page.

Date	8 A.M.	2 P.M.	8 P.M.	Date	8 A.M.	2 P.M.	8 P.M.	Date	8 A.M.	2 P.M.	8 P.M.	Date	8 A.M.	2 P.M.	8 P.M.
1	82	75	89	8	70	52	70	15	60	42	70	22	69	62	81
2	69	51	70	9	81	77	96	16	75	78	87	23	68	59	73
3	61	48	77	10	83	77	90	17	93	76	94	24	65	37	65
4	75	49	82	11	70	62	65	18	73	57	84	25	62	42	72
5	47	38	78	12	48	43	72	19	80	71	93	26	80		
6	91	61	85	13	63	55	70	20	88	66	90	Sums	1858	1466	2007
7	69	65	86	14	58	55	80	21	88	68	88	Means	71	59	80

Comparison of barometer Green 835 with Observatory barometer Newman 68.

Date / Hours	July 10 2 P.M.	July 10 8 P.M.	July 11 8 A.M.	July 11 2 P.M.	July 11 8 P.M.	July 12 8 A.M.	July 12 2 P.M.	July 12 8 P.M.
Green 835 and attached thermometer	29.788 77.3	29.836 74.8	29.952 71.1	29.960 76.5	29.976 77.9	30.055 71.7	30.058 77.0	30.053 77.9
Green 835 corrected for temperature	29.658	29.712	29.838	29.832	29.843	29.938	29.928	29.920
Newman 68 — " — " — " —	29.633	29.683	29.810	29.807	29.824	29.914	29.904	29.896
Difference	.025	.029	.028	.025	.019	.024	.024	.024

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Meteorological Record of July 1877.

Date	Wind: Estimated velocity in miles per hour, and direction (of approach). 8 A.M.	2 P.M.	8 P.M.	Clouds: Amount on scale of 10, and kind (on Poey's system). For explanations, see notes in record for January & February, 1877. 8 A.M.	2 P.M.	8 P.M.	Remarks.
1	8 S	11 S	9 SSW	10 Pm Fm	10 Pm Fm M	10 Pm Fm	Clear for a time about 5 P.M.
2	5 WSW	9 WNW	3 W	0 P M Fm Rs	5 Pm M Fm →	7 Pm Fm Rs	
3	1 WSW	5 SW	3 SSW	10 P Fm	9 Pm Fm	8 P Fm Rs	
4	8 NE	5 NE	0 E	10 Pm; a little rain	1 Pr M Fm	0 Fm Rs	A little rain early; afterwards clear.
5	1 NW	0 WSW	3 S	3 Pr R Rs	9 Pr Rs	9 P Rs	
6	3 S	6 ENE	4 N	10 Pm Fm; raining	10 Pm Fm	9 Pm Fm	Rather clear for a time about 7 P.M.
7	2 NE	2 SE	1 E	1 Fm	1 M Fm	1 P Rs Fm	
8	7 SSW	10 SW	5 SSW	10 P Fm	10 Pm	10 Pm Fm M	
9	2 SW	2 SW	4 SW	10 Pm Fm	10 Pm Fm; a little rain	9 Pm Fm	Rain after 2 P.M., with a little thunder and lightning.
10	4 SW	2 WNW	0 SE	10 Pm	10 Pm Fm →; raining hard	5 M Rm Fm	Thunder shower at 2 P.M.
11	0 calm	2 SSW	1 SW	9 P Rs Fm	7 Pm Fm	10 Pm Fm	
12	5 NW	0 NW	1 SW	0 P	1 M Fm Pr R	1 P Rs M Fm	
13	4 N	2 SE	2 NE	0	3 M Fm	8 Pm Fm M	
14	7 N	5 SE	1 SE	4 Pm Fm Pr	4 M Fm	0 P Rs	A few drops of rain early.
15	1 WNW	1 NW	1 W	8 Pr Rs; thin	9 Pm M Fm	8 Pm Fm	
16	0 SE	1 SSW	2 SSW	9 Pr Fm	9 Pm Fm	0 haze Fm	A few drops of rain about noon. Cloudy at 9½ P.M.
17	2 S	5 S	3 SW	10 Pm fog	10 Pm Fm	10 Pm; a little rain	A few drops of rain towards night.
18	6 WSW	6 SSW	8 S	1 Pr Rs Fm	6 M Fm Pr Rs	10 Pm Fm Pr	
19	6 S	10 SSW	4 S	10 Pm M Fm	10 Pm M Fm	10 Pm Fm	Some rain in the evening.
20	6 S	6 S	4 SSW	10 Pm Fm	10 Pm M Fm	10 Pm Fm	A little rain afternoon and evening.
21	4 SSW	4 SSW	3 S	10 Pm Fm	10 Pm M Fm	10 Pm Fm	
22	2 N	2 ESE	2 SE	1 Pm Rs Fm	1 Pm M Fm	9 Pm Fm R Rs	
23	2 WNW	1 NW	3 WSW	9 Pm Fm	8 P Fm	9 P Rs Fm	Clear about 11 P.M.
24	2 NNW	4 NW	4 WSW	7 Pr Rs	1 P Rs	0 P Rs Fm	
25	1 W	6 NW	4 NE	1 haze Fm	4 M Fm ↘ P Rs	1 P Rs Fm	
26	0 NNW	3 ESE	4 ENE	7 P Fm haze	6 P M Fm Rs R	4 P Fm M	
27	2 NE	4 E	3 E	10 Pm mist	10 Pm	10 Pm	
28	2 E	1 E	1 E	10 Pm; a little rain	10 Pm fog	10 Pm fog	Some rain in the afternoon
29	2 E	4 E	0 E	10 Pm fog	10 Pm M Fm	9 Pm Fm	
30	1 ENE	1 ENE	2 ENE	10 Pm	10 Pm; a little rain	10 Pm	Forenoon raining.
31	5 N	5 ENE	4 E	10 Pm	10 Pm Fm	9 Pm Fm	
Sums	101	125	89	220	224	216	
Means	3.3	4.0	2.9	7.1	7.2	7.0	

July 31, 1877. Measured elevation of barometer Newman 68, now hanging in northeast corner of West Transit Room, and in use for the regular meteorological observations. The top of the mercury in the cistern of the barometer was found to be 2 feet 8 inches above the floor of the West Transit Room, and this floor 8 inches above the floor of the entry to the Sears Tower, (at the foot of the stairs leading to the central dome). The floor of this entry is 8 inches above the level of the upper stone step at the entrance to the Sears Tower. The cistern of the barometer is therefore 4 feet above this step. The "top surface of lower square base of granite pilaster" mentioned in record book A 5, page headed 207, as 75 feet above the mean of high and low water at the Dry Dock of the Charlestown Navy Yard, according to a measurement made in 1857, has probably the same level with the upper stone step just mentioned, although the record might be interpreted to mean the level of the entry floor. Record book A 4, page headed 171, has some additional data about the level of the Observatory. See also annual report of G. P. Bond for 1861, page 27.

The height of the barometer cistern is to be assumed as 79 feet above the sea level for the present.

Readings of a thermometer belonging to Lt. Walds, Casella 29563. (Compared at Kew April 1877) S.W.

July 20, 2 P.M. 81.0; 5 P.M., 74.7. July 21, 2 P.M., 83.0
" 22, 2 P.M. 80.0; 5 P.M., 78.4. " 23, 2 P.M., 79.8

See last two pages for readings of other thermometers at these times.

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Harvard College Observatory

August 1877.

Date	Barometer			Thermometer attached to barometer			Psychrometer						* Relative humidity Guyot's Tables		
							Dry bulb			Wet bulb					
	8 A.M.	2 P.M.	8 P.M.	8 A.M.	2 P.M.	8 P.M.	8 A.M.	2 P.M.	8 P.M.	8 A.M.	2 P.M.	8 P.M.	8 A.M.	2 P.M.	8 P.M.
1	30.294	30.305	30.293	70.0	72.6	72.2	64.9	71.4	64.7	64.4	65.8	63.4	96	72	92
2	30.262	30.218	30.124	69.2	72.9	73.2	67.2	67.5	63.9	62.0	61.6	61.9	72	68	87
3	29.951	29.846	29.804	69.9	73.9	76.0	65.6	77.3	69.7	64.5	70.7	66.4	93	70	92
4	29.831	29.830	29.898	70.4	75.0	75.1	70.4	78.8	68.3	62.5	62.4	58.9	61	34	53
5	29.926	(29.842)	29.874	66.3	(74.3)	74.2	66.5	(77.5)	68.4	57.5	(60.5)	58.3	53	(31)	50
6	29.850	29.814	29.844	69.0	74.4	76.0	69.6	77.1	70.7	60.5	62.0	61.0	55	38	54
7	29.828	29.790	29.730	70.2	73.8	76.7	71.6	80.7	73.2	65.3	71.7	69.8	69	61	83
8	29.743	29.749	29.782	71.4	78.3	75.0	73.0	86.6	68.4	67.3	72.3	66.1	72	47	87
9	29.826	29.822	29.768	70.3	72.2	72.0	65.9	68.2	65.1	65.6	66.6	65.2	97	90	99
10	29.741	29.758	29.850	68.9	71.7	74.0	62.9	72.9	63.8	62.5	68.4	64.0	97	78	100
11	29.964	29.951	30.014	69.0	75.0	76.8	64.9	80.8	72.0	63.3	68.8	65.4	90	51	67
12	30.059	30.025	29.994	69.0	76.8	77.7	69.6	83.5	73.8	63.2	71.7	67.1	67	53	68
13	29.958	29.931	29.924	72.3	75.4	76.0	69.8	78.8	76.0	68.7	74.4	71.0	98	79	92
14	29.894	29.880	29.912	73.0	77.4	79.0	71.3	82.7	73.9	69.9	73.6	71.6	92	62	88
15	29.925	29.901	29.856	74.5	76.0	75.8	74.3	74.9	69.8	72.4	71.1	69.0	90	81	95
16	29.822	29.800	29.828	73.0	77.8	78.6	69.9	80.8	72.4	68.8	72.3	68.8	93	64	82
17	29.886	29.866	29.894	72.2	78.9	79.0	71.6	82.7	72.8	68.4	71.4	68.4	83	55	78
18	29.952	29.973	29.964	72.0	77.7	74.9	69.0	72.0	66.0	67.0	68.5	65.7	88	82	97
19	30.001	(30.000)	30.004	70.0	(76.7)	77.7	67.5	(75.5)	70.0	65.5	(69.6)	67.9	88	(72)	87
20	30.034	30.058	30.051	71.3	77.0	76.9	67.8	74.3	67.3	65.9	68.4	66.1	89	71	92
21	30.084	30.085	30.100	71.8	77.2	74.5	68.4	76.9	67.9	65.9	67.1	65.7	86	57	87
22	30.094	30.067	30.058	71.2	77.8	78.1	69.4	76.2	69.8	66.8	66.3	66.7	86	56	88
23	30.066	30.078	30.104	71.7	78.0	79.8	70.0	83.4	72.8	68.0	72.5	69.4	89	56	82
24	30.122	30.105	30.099	74.0	79.7	80.6	72.6	85.9	75.8	69.9	71.6	70.1	86	46	73
25	30.105		30.092	75.0		76.0	75.1		72.3	72.1		70.9	85		92
26	30.090	(30.113)	30.164	72.0	(78.9)	78.9	70.4	(79.4)	70.4	69.4	(73.5)	69.2	94	(73)	93
27	30.242	30.200	30.198	73.0	76.0	78.3	65.5	77.8	68.4	64.4	71.8	68.3	93	72	98
28	30.206	30.164	30.136	72.4	78.7	81.0	71.8	84.8	76.7	69.4	72.6	70.9	87	52	73
29	30.058	29.959	29.937	75.1	79.0	78.9	72.8	83.4	71.3	68.8	76.0	70.0	80	69	92
30	29.964	29.988	29.956	73.9	76.5	76.0	70.5	76.4	67.5	64.4	64.1	59.9	69	47	61
31	30.084	30.012	29.946	66.8	74.6	76.9	64.1	78.4	71.7	58.9	66.9	67.2	71	51	77
Sums	929.862	899.130	929.198	2208.8	2284.2	2375.8	2143.9	2346.6	2174.8				2569	1838	2559
Means	29.996	29.971	29.974	71.3	76.1	76.6	69.2	78.2	70.2				83	61	83

Barometric means reduced to the freezing point: 8 A.M., 29.881; 2 P.M., 29.844; 8 P.M., 29.845.

The midday observations of August 5, 19, and 26 (included in parentheses) were made at the following times: Aug. 5, 2¼ P.M.; Aug. 19, 2½ P.M.; Aug. 26, 2½ P.M.

* Relative humidity computed after subtracting 0.2 from each reading of the wet bulb, as in May, June, and July.

All observations this month by A. Searle.

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Meteorological Record of August 1877.

Date	External Thermometer No. 4							Extreme temperatures. Maximum, 8 A.M.		Minimum, 8 A.M.		Rainfall in inches.	Aurora	Zodiacal light
	8 A.M.	2 P.M.	8 P.M.	Mean, double weight to 2 P.M.				Before setting	After setting	Before setting	After setting	Gauge C examined at 8 A.M.	8 P.M.	8 P.M.
1	65.4	71.7	65.1	66.54				74.2	65.5	63.3	64.6	0.011	Cloudy	Cloudy
2	67.3	67.9	64.5	66.30				73.2	67.3	61.0	66.5	0.000	Cloudy	Cloudy
3	66.0	78.2	70.4	70.20				71.0	65.9	62.4	65.0	0.000	Twilight & clouds	Twilight & clouds
4	70.7	79.3	68.8	71.66				78.0	70.3	61.0	69.8	0.000	Twilight	Twilight
5	*66.3	(78.2)	69.0	69.76				79.6	66.5	55.2	66.0	0.000	Cloudy	Cloudy
6	70.0	77.7	71.0	71.94				78.8	69.2	61.1	68.7	0.000	Cloudy	Cloudy
7	72.0	81.2	74.2	74.72				78.5	71.0	62.7	70.5	0.000	Cloudy	Cloudy
8	73.1	88.1	69.0	74.46				83.2	72.8	63.7	72.1	0.000	Cloudy	Cloudy
9	66.6	68.8	66.0	66.80				89.2	66.7	64.2	65.5	0.000	Cloudy	Cloudy
10	63.7	75.0	64.4	66.24				69.5	63.0	61.0	62.2	0.662	None; some clouds	Twilight & clouds
11	66.4	80.8	72.4	71.68				76.0	64.0	59.8	64.4	0.596	None; some clouds	None
12	69.7	84.2	74.5	74.52				80.8	69.2	60.1	69.0	0.055	Cloudy	Cloudy
13	70.4	80.3	73.3	73.54				83.8	70.0	66.1	69.1	0.011	Cloudy	Cloudy
14	71.8	83.8	74.9	75.44				79.2	71.4	68.0	70.5	0.099	Cloudy	Cloudy
15	74.8	76.1	70.7	73.42				83.4	74.2	68.9	73.5	0.000	Cloudy	Cloudy
16	71.1	81.3	73.3	74.02				76.2	69.0	66.2	68.6	0.971	†Moonlight & clouds	Moonlight & clouds
17	71.6	84.0	73.7	74.92				81.0	71.3	65.3	70.8	0.000	Cloudy	Cloudy
18	69.9	73.7	67.1	69.54				83.4	69.1	64.0	68.1	0.000	Cloudy	Cloudy
19	67.4	(76.2)	70.9	70.56				81.2	66.6	60.0	66.7	0.342	Moonlight	Moonlight
20	68.0	74.8	68.4	69.52				78.7	68.0	61.1	67.0	0.000	Cloudy	Cloudy
21	68.8	77.3	68.6	70.42				77.7	68.4	61.8	67.6	0.000	Cloudy	Cloudy
22	69.6	76.5	70.7	71.42				78.8	69.4	62.6	68.5	0.000	Moonlight	Moonlight
23	70.1	83.8	73.5	74.20				79.0	70.0	62.0	69.1	0.000	Cloudy	Cloudy
24	73.3	87.1	76.5	77.34				83.0	72.5	65.8	71.9	0.000	Cloudy	Cloudy
25	76.0		73.2					86.2	75.0	67.8	74.4	0.000	Cloudy	Cloudy
26	70.9	(80.1)	71.0	72.78				79.2	69.8	67.6	69.4	1.544	Cloudy	Cloudy
27	66.1	78.3	69.1	69.74				79.7	66.1	63.6	65.0	0.110	Cloudy	Cloudy
28	71.8	85.3	77.3	76.70				79.8	70.8	64.2	70.8	0.121	None; some clouds	None; some clouds
29	73.4	84.7	72.0	75.10				85.0	72.8	68.0	72.1	0.000	Cloudy	Cloudy
30	70.8	76.7	68.0	70.86				84.2	70.5	64.0	70.0	0.055	None	None
31	64.0	78.9	72.3	70.30				77.0	64.0	54.5	63.3	0.000	Cloudy	Cloudy
Sums	2157.0	2370.0	2193.8	2154.64				2468.5		1957.0		4.577		
Means	69.58	79.00	70.77	71.82				79.63		63.13				

Mean temperature for month {mean of 3 means for 8, 2, 8, with double weight given to the morning and evening observations} 71.94 Fahrenheit. Rainfall for month 4.58 inches.

Mean of the 3 means for 8, 2, 8,	73.12 — " —	See discussion of mean temperature from observations at 8, 2, 8, in large volume containing meteorological record for 1841 to 1852 inclusive.
" " " 2 " " 8, 8,	70.18 — " —	
" " 73.12 and 70.18	71.65 — " —	
Maximum temperature for month (August 9)	89.2 — " —	
Minimum " " " (August 31)	54.5 — " —	
— " — (reduced to standard of No. 4)	55.0 — " —	See general remarks on observations of 1876.

*Aug. 5, 8 A.M. Low reading of No. 4 noticed and verified.

†Aug. 16, midnight. Some auroral light about this time (Aug. 16, 12h astronomical mean time).

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August 1877.

Date	Wind: Estimated velocity in miles per hour, and direction (of approach). 8 A.M.	2 P.M.	8 P.M.	Clouds: Amount, on scale of 10, and kind (on Poëy's system). For explanations, see notes in record for January and February, 1877. 8 A.M.	2 P.M.	8 P.M.	Remarks.
1	3 NE	5 E	1 E	10 Pm mist	9 Pr M Fm	10 Pm Fm	
2	3 NE	5 E	4 NE	1 Pr Fm	2 Pr Rs Fm M Fm	10 Pm Fm	
3	4 NE	1 ESE	2 SE	10 Pm fog	8 M Fm Fm	0 Pm M Rs	
4	7 NNW	6 NW	5 NW	0 Fm Rs	1 M Fm	0 P Fm	
5	3 W	(4 WNW)	7 NW	0 P Fm	(5 M Fm Pr)	10 Pm Fm	
6	3 W	6 NW	0 calm	5 Pm Fm → M Pr	9 M Fm →	5 P Fm	
7	2 SW	7 SW	6 SW	10 Pm	8 M Fm haze	6 P Fm	
8	0 SW	2 ENE	1 ENE	1 haze Fm Rs	9 P M Fm →	5 M Fm	
9	2 NE	2 E	3 NE	10 Pm mist	10 Pm	10 Pm	{Afternoon rainy with some thunder and lightning; very little wind.}
10	2 N	1 NW	0 calm	10 Pm	4 ~~Fm~~ M haze	6 Pm Fm	Thunder shower 6¾ to 7 P.M.; distant thunder previously.
11	0 calm	7 WSW	0 calm	7 Pm Fm	3 M Fm	0 Pm Fm	Shower 3¼ to 3¾ P.M., with a little thunder.
12	2 SW	6 SSW	6 S	2 Pr Rs Fm	6 Pr Rs M Fm haze	6 Pm Fm	
13	2 SSW	1 S	2 S	10 Pm Fm	10 Pm M Fm; a little rain	10 Pm; a little rain	A little rain at times.
14	1 S	3 SW	3 S	10 Pm	9 Pm M Fm →	10 Pm Fog	
15	1 S	0 SW	0 calm	10 Pm	10 Pm	10 Pm fog	Occasional showers.
16	0 WNW	3 WSW	1 S	10 Pm Fm	5 M Fm → Pr	1 Pm Fm Rs	
17	2 SW	4 SSW	0 SSW	0 Fm	8 M Fm Rs	5 Pm Fm	Imperfect lunar halo about 10 P.M.
18	1 SW	1 E	0 calm	2 P Fm haze	10 Pm Fm; a little rain	10 Pm Fm	{Thunder-shower 2 to about 2½ P.M.; rest of afternoon somewhat rainy.}
19	0 W	(5 E)	0 calm	0 haze	(2 M Fm)	0 Pm Fog	
20	0 SSE	4 ESE	0 calm	0 haze Rs	7 Pr Rs M Fm	10 Pm fog	
21	0 E	4 E	0 E	7 Pm Pr Rs Fm	6 Pr M Fm	10 Pm M Fm	
22	0 SE	3 E	0 calm	3 Pr Rs M Fm haze	1 M Fm haze	0 P	
23	1 S	0 calm	0 SE	0 haze Rs	3 M Fm haze	5 P haze	Large halo round moon at 10½ P.M.; about 45° across.
24	0 SE	4 WNW	3 SW	9 Pm Fm	9 Pm M Fm	10 Pm Fm	Small colored halo round moon at 11½ P.M.; about 5° across.
25	1 SSW		0 S	10 Pm Fog		10 Pm; raining	Day showery, following night rainy.
26	0 S	(1 SE)	1 NE	10 Pm fog	(1 M Fm)	10 Pm	{Shower, preceded by distant thunder, about 4½ P.M. Afterwards some lightning without thunder. Thunder and lightning in the evening.}
27	0 N	1 SSW	2 S	10 Pm fog	0 P M Fm haze	5 P Fm	{Shower 7 to 7½ P.M., with some thunder and lightning, preceded by thunder showers to the north with bright wind (NNW & NNE), upper clouds stationary, much cloud from SW.}
28	0 SW	3 WSW	5 S	2 P Fm haze	5 M Fm → haze	0 P Fm haze	
29	3 NNW	6 SW	2 SW	10 Pm Fm	8 Pm Fm M	10 Pm; a few stars visible	Slight showers towards night. {Much lightning without thunder in the evening}
30	4 NW	4 NW	0 NW	0	2 M Fm	0	
31	0 calm	4 SW	6 SW	0 Pm haze	3 M Fm haze	10 Pm	
Sums	47	103	60	169	173	194	
Means	1.5	3.4	1.9	5.5	5.8	6.3	

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Meteorological Record of September 1877.

Date	Barometer 8 A.M.	Barometer 2 P.M.	Barometer 8 P.M.	Thermometer attached to barometer 8 A.M.	Thermometer attached to barometer 2 P.M.	Thermometer attached to barometer 8 P.M.	Psychrometer Dry bulb 8 A.M.	Psychrometer Dry bulb 2 P.M.	Psychrometer Dry bulb 8 P.M.	Psychrometer Wet bulb 8 A.M.	Psychrometer Wet bulb 2 P.M.	Psychrometer Wet bulb 8 P.M.	*Relative humidity Guyot's Tables 8 A.M.	*Relative humidity Guyot's Tables 2 P.M.	*Relative humidity Guyot's Tables 8 P.M.
1	29.769	29.747	29.752	74.0	75.0	75.5	72.7	77.0	68.0	69.5	70.8	64.8	83	71	82
2	29.782	29.750	29.750	68.5	70.0	71.8	62.9	69.2	59.9	59.1	60.3	56.5	78	56	79
3	29.684	29.725	29.820	65.0	66.7	67.1	61.0	64.6	57.5	57.6	54.9	50.8	79	49	59
4	29.942	30.000	30.081	61.8	68.3	70.8	59.0	70.5	63.0	53.7	60.6	59.8	67	52	81
5	30.150	30.136	30.182	66.0	73.0	72.9	65.7	77.2	66.4	62.5	65.5	62.7	81	50	79
6	30.260	30.300	30.316	68.1	68.0	67.3	61.8	60.9	57.9	59.4	57.8	54.8	85	81	71
7	30.278	30.250	30.212	63.6	63.9	63.0	56.5	57.9	56.2	55.1	54.5	53.9	90	78	84
8	30.144	30.146	30.108	60.7	65.2	65.0	55.3	63.0	56.7	51.7	55.8	52.0	76	59	70
9	30.079	30.050	30.059	60.2	65.6	66.8	56.7	67.5	60.0	51.6	57.6	57.5	67	49	84
10	30.109	30.090	30.102	60.0	67.1	69.5	58.8	72.7	60.9	56.2	62.1	57.6	83	51	80
11	30.144	30.138	30.169	64.1	69.9	71.1	62.7	76.6	65.2	59.1	64.3	60.7	79	47	75
12	30.219	30.178	30.155	65.9	72.1	74.2	65.4	80.3	70.0	62.3	69.7	66.5	82	55	81
13	30.102	30.042	30.055	67.4	74.8	77.9	67.5	81.5	74.3	63.2	71.4	68.9	77	58	74
14	30.113	30.106	30.108	71.5	77.0	75.5	70.3	73.3	64.6	67.0	65.6	63.2	82	63	91
15	30.112	30.087	30.102	69.4	78.5	75.3	67.3	82.8	69.6	65.8	72.1	67.6	90	57	88
16	30.120	30.066	30.064	72.2	76.8	76.9	72.4	81.3	72.4	69.9	73.4	70.8	87	66	91
17	30.016	29.919	29.886	72.9	77.0	77.0	71.5	79.8	72.2	69.5	74.0	70.7	89	74	91
18	29.868	29.885	29.993	70.1	70.3	66.9	58.9	66.7	56.8	54.6	55.4	50.9	73	43	63
19	30.083	30.056	30.069	60.3	62.8	62.4	54.7	62.8	56.0	49.4	53.0	51.8	65	47	73
20	30.076	30.040	30.017	59.3	67.0	66.6	55.0	69.9	59.0	52.3	57.6	55.2	81	42	76
21	29.880	29.814	29.932	61.4	65.2	61.5	53.6	63.4	51.7	52.6	55.3	46.5	92	51	63
22	30.086	30.129	30.207	53.2	59.8	59.2	49.5	61.3	50.8	42.6	47.9	45.0	50	28	59
23	30.254	(30.162)	30.176	54.9	(64.7)	66.9	50.4	(73.2)	62.9	45.4	(58.5)	57.0	63	(35)	67
24	30.200	30.158	30.186	59.8	68.0	70.4	57.4	77.9	65.0	52.9	61.7	59.1	71	34	68
25	30.188	30.155	30.151	63.0	72.4	73.1	59.9	79.4	67.3	57.5	65.3	62.7	84	43	75
26	30.149	30.098	30.086	66.2	74.4	73.0	65.2	79.4	68.3	62.0	67.3	62.5	81	50	70
27	30.218	30.248	30.271	67.5	70.9	64.4	62.8	63.6	56.6	56.3	56.4	53.4	63	59	78
28	30.281	30.196	30.133	63.2	65.3	66.0	60.7	63.9	63.6	57.6	61.3	62.9	81	84	95
29	30.198	30.175	30.150	65.0	68.8	64.6	59.4	63.2	52.4	54.7	50.0	50.4	71	31	85
30	30.233	30.204	30.224	59.0	64.8	65.0	48.4	66.4	57.3	47.4	54.2	52.4	91	39	68
Sums	902.737	902.050	902.516	1934.2	2083.3	2077.6	1823.4	2127.2	1862.5				2341	1602	2300
Means	30.091	30.068	30.084	64.5	69.4	69.3	60.8	70.9	62.1				78	53	77

Barometric means reduced to the freezing point: 8 A.M., 29.994; 2 P.M., 29.958; 8 P.M., 29.974.

The midday observations of Sept. 23 (included in parentheses) were made at 3¼ P.M. instead of at 2 P.M.

*Relative humidity computed after subtracting 0.2 from each reading of the wet bulb, as in May, June, July, and August.

Observations for comparison of thermometers, made at times when all the bulbs seemed dry.

Date	Time	Psychrometer Uncovered bulb	Psychrometer Covered bulb	No. 4	C. 3235	Date	Time	Psychrometer Uncovered bulb	Psychrometer Covered bulb	No. 4	C. 3235
8	7 57/60 A.M.	55.2	55.4	55.6	55.9	15	1¾ P.M.	83.4	83.5	83.9	83.7
9	7 11/12 A.M.	56.0	56.1	56.3	56.4	20	1 5/6 P.M.	69.7	69.8	70.0	70.0
9	1 5/6 P.M.	67.2	67.4	67.9	67.9	22	7 5/6 A.M.	48.8	49.1	49.1	49.8
12	1 11/12 P.M.	80.4	80.6	81.1	80.6	23	7 5/6 A.M.	49.6	49.6	49.0	49.9
13	7 11/12 A.M.	67.0	67.2	67.2	67.2	24	7 5/6 A.M.	56.0	56.0	56.0	56.4
14	1 7/12 P.M.	73.7	73.9	74.1	74.7	24	7 5/6 P.M.	77.4	77.5	77.7	77.6
						25	1 5/6 P.M.	79.2	79.4	79.6	79.7

Observer A. Searle, throughout the month.

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September, 1877.

Date	External thermometer No. 4				Casella 3235 (wet)			Extreme temperatures Maximum, 8 A.M.		Minimum, 8 A.M.		Rainfall in inches.	Aurora	Zodiacal light
	8 A.M.	2 P.M.	8 P.M.	Mean, half weight to 2 P.M.	8 A.M.	2 P.M.	8 P.M.	Before setting	After setting	Before setting	After setting	Gauge C examined at 8 A.M.	8 P.M.	8 P.M.
1	73.4	78.4	68.7	72.52				79.7	73.0	63.3	72.0	0.000	None; some clouds	None; some clouds
2	63.7	69.8	60.2	63.52				77.3	63.5	59.9	62.5	0.099	None	None
3	61.1	64.7	58.1	60.62				70.1	61.2	54.2	60.1	0.066	None; some clouds	None
4	59.0	71.5	64.2	63.58				66.3	59.3	50.0	58.5	0.000	None	None
5	‡65.5	77.8	67.1	68.60				72.0	65.6	57.9	65.0	0.000	Cloudy	Cloudy
6	62.2	61.4	58.2	60.44				77.3	62.2	58.2	61.1	0.000	Cloudy	Cloudy
7	56.9	58.4	56.5	57.04				62.4	57.3	54.5	56.0	0.000	§ Cloudy	Cloudy
8	55.7	63.8	57.0	57.84	†52.7	56.6	53.0	59.8	56.0	50.5	54.8	0.000	Cloudy	Cloudy
9	57.0	68.0	60.6	60.64	52.2	58.8	58.3	65.7	57.1	52.0	56.0	0.000	Cloudy	Cloudy
10	‡58.6	73.1	61.7	62.74	57.0	63.8	60.0	69.0	59.0	51.0	58.2	0.000	None; some clouds	None; some clouds
11	63.1	77.0	65.8	66.96	59.8	65.9	62.3	72.9	62.8	55.0	62.0	0.000	None; some clouds	Moonlight and clouds
12	65.3	81.1	70.9	70.70	62.9	71.1	67.5	76.5	65.2	57.1	64.5	0.000	Moonlight and clouds	Moonlight and clouds
13	67.8	81.8	74.7	73.36	63.9	72.1	70.0	80.6	67.6	60.8	66.8	0.000	Moonlight	Moonlight
14	70.4	74.0	65.2	69.04	67.7	66.8	65.0	82.0	70.0	64.2	69.3	0.000	Moonlight	Moonlight
15	67.4	83.5	70.5	71.86	66.2	74.7	69.1	78.5	67.3	60.6	66.3	0.000	Moonlight	Moonlight
16	73.0	82.3	73.2	74.94	70.5	74.0	71.9	83.2	72.3	66.2	71.8	0.000	Moonlight and clouds	Moonlight and clouds
17	72.0	80.4	72.9	74.04	70.0	74.5	71.4	82.0	71.4	66.8	70.8	0.000	Cloudy	Cloudy
18	59.3	67.0	57.3	60.04	55.2	56.1	52.3	82.9	59.0	54.7	58.2	0.309	Moonlight	Moonlight
19	55.0	63.6	56.1	57.16	50.1	54.6	53.0	66.8	56.1	46.8	53.9	0.000	§ Moonlight	Moonlight
20	55.1	70.2	59.5	59.88	53.2	59.5	57.0	64.1	55.5	45.8	54.1	0.000	Cloudy	Cloudy
21	53.7	64.0	52.5	55.28	53.2	56.0	47.7	70.0	54.3	47.1	53.0	0.000	Moonlight	Moonlight
22	49.7	61.5	51.5	52.78	43.6	48.9	47.0	67.7	50.5	43.6	49.0	0.000	Moonlight	Moonlight
23	49.9	(73.6)	63.4	60.04	46.9	(59.8)	58.2	61.4	50.5	41.3	49.7	0.000	Moonlight and clouds	Moonlight and clouds
24	57.1	77.9	65.6	64.66	54.0	63.2	60.9	73.0	57.7	49.6	56.8	0.000	Moonlight	Moonlight
25	59.7	79.7	67.9	66.98	58.3	66.9	64.0	78.0	60.0	54.4	59.0	0.000	Moonlight	Moonlight
26	65.0	80.1	68.8	69.54	62.9	68.6	63.5	79.2	65.2	59.0	64.3	0.000	Moonlight	Moonlight
27	63.2	64.1	57.3	61.02	57.2	57.7	56.0	79.8	63.0	60.2	62.2	0.000	Thick haze	Thick haze
28	60.9	64.6	64.3	63.00	58.7	62.1	63.7	68.3	61.2	55.2	60.4	0.000	Cloudy	Cloudy
29	59.8	63.4	53.0	57.80	55.8	51.4	52.0	65.3	59.8	59.0	59.0	0.033	None; some clouds	None; some clouds
30	48.4	66.9	57.9	55.90	48.0	55.8	54.0	64.2	49.5	41.8	47.8	0.000	None	Faint near Jupiter between the branches of Milky Way
Sums	1828.9	2143.6	1880.6	1912.52				2176.0		1640.7		0.507		
Means	60.96	71.45	62.69	63.75				72.53		54.69				

Mean temperature for month {mean of 3 means for 8, 2, 8, with double weight given to the morning and evening observations} 63.75 Fahrenheit. Rainfall for month 0.51 inches.

Mean of the 3 means for 8, 2, 8, 65.03 — " — } See discussion of mean temperature from observations at 8, 2, 8 in large volume containing meteorological record for 1841 to 1852 inclusive.

" " " 2 " " 8, 8, 61.83 — " —

" " 65.03 and 61.83 63.43 — " —

Maximum temperature for month (Sept. 16) 83.2 — " —

Minimum — " — — " — — " — (Sept. 23) 41.3 — " —

— " — (reduced to standard of No. 4) 41.8 — " — See general remarks on observations of 1876.

† C. 3235 returned; see note July 26.

Relative humidity computed as in March, 1877, from No. 4 and C. 3235; observations on this page.

Date	8 A.M.	2 P.M.	8 P.M.	Date	8 A.M.	2 P.M.	8 P.M.	Date	8 A.M.	2 P.M.	8 P.M.
8	78	59	73	16	89	67	95	24	78	40	75
9	68	55	86	17	91	76	94	25	91	54	80
10	88	58	90	18	73	45	67	26	88	53	73
11	81	53	81	19	66	50	78	27	65	63	89
12	87	60	83	20	85	49	82	28	87	86	97
13	80	61	79	21	94	56	65	29	76	36	91
14	86	66	99	22	54	31	66	30	94	43	74
15	94	66	94	23	75	(40)	71	Means	81	55	82

‡ Sept. 5 and Sept. 10, 8 A.M. No. 4 noticed to be lower than the dry bulb, probably because that is more sensitive, and the temperature was rising.

§ Sept. 7, about 8½ P.M. A little light, possibly auroral, in or between clouds in the north.
Sept. 19, 2 A.M. Aurora seen by Lt. Waldo.

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Meteorological Record of September 1877.

Date	Wind: Estimated velocity in miles per hour, and direction (of approach)			Clouds: Amount, on scale of 10, and kind (on Poëy's system). For explanations, see notes in record for January and February, 1877.			Remarks.
	8 A.M.	2 P.M.	8 P.M.	8 A.M.	2 P.M.	8 P.M.	
1	4 SW	4 SW	1 W	10 Pm Fm	9 Pm M Fm →	2 Pm haze	Much heat lightning about 8 P.M. {Clouded off later, and probably rained}
2	2 N	0 NE	0 calm	10 Pm Fm	8 Pm M Fm Rs	0 Pm Rs	Apparently some rain following night.
3	3 W	5 NW	1 S	4 Pm Rm Fm Rs	3 Pm M Fm →	0 Pm	
4	6 SW	5 W	0 S	0 Pm Fm	7 Pm M Fm →	0	
5	4 SW	10 S	4 S	0	3 Pz Rs R M Fm ↗	7 Pm haze	Evening hazy and rather cloudy, with heat lightning.
6	6 ENE	6 E	4 E	10 Pm Fm	10 Pm	10 Pm; stars somewhat visible	
7	4 NE	4 NE	4 NE	10 Pm Fm ↙	10 Pm Fm ↙	10 Pm	A few drops of rain at times.
8	6 NNE	7 NE	4 N	9 Pm Pz Fm Rm Rs	9 Pm M Fm	10 Pm	
9	5 N	4 NE	0 calm	10 Pm Fm	10 Pm Fm	2 Pm Fm	
10	1 NNW	4 SE	1 E	0	6 Pz R Rs	0 Pm	
11	0 SW	1 SW	3 S	6 Pz Pm Fm Rs	1 Pz Rs Pm	0 Pm	
12	1 WSW	2 S	3 SW	5 Pm Pz Rs Fm	9 Pm Fm M	2 Pm Rs P Fm	
13	1 WSW	1 WSW	1 SW	3 Pz Rs Fm	1 M Fm → Rs	0	
14	2 NW	4 E	0 calm	2 P Rs haze	2 P Rs haze	3 P Fm haze	
15	0 calm	6 S	4 S	1 Pm Fm haze	0 M Fm	0	
16	5 SSW	7 SSW	5 SSW	10 Pm	7 Pm M Fm Rs	6 P Fm	
17	3 SW	6 S	6 S	10 Pm	8 Pm M Fm ↗	8 P M Fm	Occasional showers. Some rain following night.
18	6 NW	7 NNW	1 NW	10 Pm Fm	0 P Fm	0 Fm	
19	4 NW	1 WNW	0 WNW	7 Pz Rs	9 P	1 P Fm	
20	1 SW	4 S	3 S	7 Pz Pm Rs Fm	3 Pz R Rs M Fm	10 P; some stars visible	Imperfect lunar halo at 8 P.M., about 45° across.
21	0 calm	9 NW	12 NW	1 Pm Fm	10 Pm Fm	2 Pm Fm	{A few drops of rain about 1 P.M.}
22	8 NW	9 NNW	1 WNW	0	0	0	{A little thunder about 1½ P.M.}
23	3 SW	(4 SW)	2 SW	0	(0 P)	0 P Fm	
24	1 SW	1 SW	0 S	0 P haze	0	0	
25	1 SW	4 S	3 S	0 Rs haze	0 Rs haze	0 haze	
26	4 SW	4 SW	5 S	2 P Rs Fm haze	9 Pz Rs	0	
27	4 NNW	6 E	0 calm	10 Pm Fm	1 P Rs haze	2 P haze	
28	3 E	1 E	3 SE	10 Pm	10 Pm	10 Pm	A little rain in the afternoon.
29	3 NE	4 E	0 calm	10 Pm Fm Rs	1 Pz Rs Fm	0 P haze	
30	0 NE	2 ESE	4 SW	0 haze	0 haze	0	
Sums	91	132	75	157	146	85	
Means	3.0	4.4	2.5	5.2	4.9	2.8	

Sept. 4 (astronomical mean time). Many meteors about midnight, mostly pretty bright, with trains. They came from at least two radiants, one in the east, the other in the west; but other work prevented any estimate of their exact places.

Sept. 12. Bright meteors gather frequent in the evening.

Sept. 13. Meteors rather frequent in the evening.

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Harvard College Observatory.

October 1877.

Date	Barometer 8 A.M.	Barometer 2 P.M.	Barometer 8 P.M.	Thermometer attached to barometer 8 A.M.	Thermometer attached to barometer 2 P.M.	Thermometer attached to barometer 8 P.M.	Psychrometer Dry bulb 8 A.M.	Psychrometer Dry bulb 2 P.M.	Psychrometer Dry bulb 8 P.M.	Psychrometer Wet bulb 8 A.M.	Psychrometer Wet bulb 2 P.M.	Psychrometer Wet bulb 8 P.M.	*Relative humidity Guyot's Tables 8 A.M.	*Relative humidity Guyot's Tables 2 P.M.	*Relative humidity Guyot's Tables 8 P.M.
1	30.203	30.141	30.134	59.0	68.0	68.7	57.6	74.8	62.4	54.4	63.0	59.5	79	48	82
2	30.120	30.080	30.151	62.4	69.8	69.3	59.6	76.9	57.0	57.4	67.4	56.3	85	58	94
3	30.135	30.102	30.113	64.0	65.3	65.9	57.7	63.4	57.7	56.1	59.4	56.0	89	77	94
4	29.923	29.723	29.609	63.0	65.8	67.5	57.8	73.0	66.6	57.2	67.9	64.6	95	75	88
5	29.487	29.613	29.876	61.1	62.1	59.6	52.2	56.8	47.5	51.3	47.0	41.1	93	41	51
6	30.112	30.146	30.298	54.0	58.3	55.5	43.9	56.6	45.5	39.5	44.9	40.7	62	31	61
7	30.458	30.450	30.473	52.8	59.7	55.9	41.1	57.8	45.5	38.4	48.8	41.7	74	46	69
8	30.487	30.436	30.385	52.3	58.0	58.8	40.4	53.3	51.6	40.2	46.4	47.9	96	54	73
9	30.274	30.150	30.050	59.3	59.2	60.8	52.6	53.8	57.3	51.9	53.8	57.5	94	99	100
10	30.108	30.056	30.051	59.9	64.0	64.9	52.9	63.9	53.6	52.1	55.5	52.5	93	54	91
11	30.002	29.876	29.876	57.8	59.0	58.8	48.0	57.2	51.3	47.5	55.6	51.2	95	95	98
12	29.810	29.788	(29.870)	56.2	58.4	(58.0)	47.5	57.9	(51.5)	46.5	51.0	(47.3)	91	58	(69)
13	30.062	30.100	30.209	54.4	58.9	57.0	46.0	57.5	49.0	43.0	49.5	47.8	75	51	83
14	30.256	(30.200)	30.224	51.5	(55.5)	56.4	41.5	(54.5)	51.3	41.0	(50.5)	50.4	94	(73)	93
15	30.258	30.208	(30.152)	55.0	60.2	(60.5)	50.7	60.5	(56.2)	49.8	55.3	(54.6)	93	68	(88)
16	29.964	29.786	30.044	60.8	63.8	60.5	57.8	70.0	45.5	58.2	60.0	43.5	100	52	82
17	30.146	30.055		50.8	56.2		42.5	58.5		39.5	45.7		73	27	
18	30.054	30.014	30.026	50.2	58.0	58.2	42.5	60.0	49.5	38.8	47.5	45.0	68	31	65
19	30.020	29.938	29.986	55.5	58.7	61.0	51.5	67.8	54.5	49.2	63.2	53.0	83	75	88
20	30.025	30.050	30.068	57.5	56.2	55.2	45.5	44.3	42.5	45.5	44.3	43.2	98	98	100
21	29.980	29.878	29.810	54.5	55.5	55.5	42.5	46.5	42.5	41.5	42.5	41.5	90	67	90
22	29.548	29.532	(29.772)	50.5	47.5	(45.5)	36.5	35.5	(36.5)	36.5	36.0	(36.2)	98	100	(95)
23	29.916	29.877	(29.930)	45.2	53.5	(53.5)	37.5	56.8	(49.2)	35.2	48.0	(47.5)	76	46	(86)
24	29.978	29.923	29.919	52.5	60.0	60.5	52.2	66.5	58.8	48.2	55.5	57.5	71	45	91
25	29.935	29.874	29.944	58.1	57.7	55.0	48.9	49.9	36.0	47.8	47.9	36.4	90	84	100
26	30.081	30.066	30.037	50.1	50.3	50.7	34.7	39.8	37.5	32.7	35.3	34.1	78	58	66
27	29.968	29.961	29.981	46.7	52.1	43.4	32.9	43.7	35.2	30.0	36.9	33.7	69	44	83
28	30.120	30.134	30.176	43.4	51.6	47.5	31.1	48.8	40.0	†29.6	41.4	†38.0	82	46	80
29	30.078	29.871	29.895	49.0	54.4	58.0	53.4	64.7	59.7	52.7	58.8	56.8	94	68	81
30	29.996	29.932	30.003	53.5	57.0	53.4	47.7	57.3	45.3	43.4	46.9	40.5	66	38	61
31	29.982	29.806	29.764	47.8	51.9	51.9	36.3	54.7	43.0	35.4	48.3	43.4	89	58	100
Sums	931.486	929.766	900.826	1688.8	1806.6	1729.4	1443.0	1782.7	1479.7				2633	1865	2502
Means	30.048	29.992	30.027	54.5	58.3	57.6	46.5	57.5	49.3				85	60	83

Barometric means reduced to the freezing point; 8 A.M., 29.978; 2 P.M., 29.912; 8 P.M., 29.949.

Observations in parentheses ( ) were not made at the regular times. The actual times are given below.

Date	Regular time	Actual time	Kind of observations.
12	8 A.M.	9 A.M.	Rainfall.
12	8 P.M.	8¾ P.M.	Barometer, thermometer No. 4, clouds.
12	8 P.M.	9 P.M.	Psychrometer.
14	2 P.M.	3 P.M.	All usually made.
15	8 P.M.	9 P.M.	All usually made.
22	8 P.M.	9 P.M.	All usually made.
23	8 P.M.	10½ P.M.	All usually made.

Observations for comparison of thermometers made at times when all the bulbs seemed dry.

Date	Time	Psychrometer Uncovered bulb	Psychrometer Covered bulb	No. 4	C. 3235
1	1⅚ P.M.	74.7	74.8	74.9	75.0
5	1⅚ P.M.	56.7	56.8	56.9	57.1

*Relative humidity computed after subtracting 0.2 from each reading of the wet bulb, as in May and subsequently.

† Oct. 28, 8 A.M. Covered bulb of psychrometer and C. 3235 both wet, but neither frozen. They had been wetted at 7½ A.M.
8 P.M. " " " " " — " — both thoroughly wet when read. " " " " " 7¼ P.M.

Observers: W. Upton from 2 P.M. Oct. 11 to 2 P.M. Oct. 24, both inclusive;
A. Searle at other times.

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Meteorological Record of October 1877.

Date	External Thermometer No. 4				Casella 3235 (wet)			Extreme temperatures.				Rainfall in inches	Aurora	Zodiacal light
								Maximum, 8 A.M.		Minimum, 8 A.M.				
	8 A.M.	2 P.M.	8 P.M.	Mean, half weight to 2 P.M.	8 A.M.	2 P.M.	8 P.M.	Before setting	After setting	Before setting	After setting	Gauge C, examined at 8 A.M.	8 P.M.	8 P.M.
1	57.3	75.1	63.2	63.22	55.0	64.1	60.5	67.0	57.7	47.8	56.8	0.000	None	††About as yesterday
2	59.5	77.3	57.9	62.42	58.1	68.9	57.2	74.8	59.9	54.0	58.9	0.000	Cloudy	Cloudy
3	58.1	63.8	58.0	59.20	57.3	60.5	57.0	76.7	58.5	55.0	57.2	0.000	Cloudy	Cloudy
4	58.2	73.5	67.2	64.86	57.9	68.5	65.5	64.3	58.6	55.7	57.4	0.066	Cloudy	Cloudy
5	52.0	57.1	48.1	51.46	52.0	47.9	42.2	72.6	52.7	51.3	51.7	3.398	None	Suspected, between branches of east of Milky Way
6	43.8	56.9	46.0	47.30	41.0	46.1	42.1	57.6	45.4	37.0	43.3	0.000	None	Suspected as yesterday
7	40.9	58.3	46.4	46.58	39.6	50.9	44.3	56.8	42.2	33.9	40.5	0.000	None	Very faintly once, head of Sagittarius.
8	40.4	53.7	52.1	47.74	40.9	47.6	49.1	58.2	42.0	34.0	39.9	0.000	Cloudy	Cloudy
9	53.2	55.0	57.9	55.44	‡52.8			57.0	52.8	39.8	52.4	0.055	Cloudy	Cloudy
10	53.1	64.1	54.8	55.98				57.9	53.2	51.1	52.2	‖0.794	Haze & clouds	Haze & clouds
11	48.7	57.6	52.2	51.88				65.0	49.2	43.2	47.3	0.000		
12	48.3	57.9	(52.0)	51.70				57.2	§50.0	46.8	47.5	(0.768)		
13	46.6	57.8	49.5	50.00				58.0	§	42.8	46.0			
14	42.0	(55.5)	52.2	48.78					§41.5	37.0	41.3			
15	50.6	61.0	(56.8)	55.16				57.5	§51.5	41.5	50.5			
16	58.5	70.3	46.5	56.06				62.0	§57.7	50.5	57.8	0.044		
17	42.5	58.8						70.0	§42.5	37.8	42.5	0.066		
18	42.0	60.0	50.2	48.88				53.5	§43.0	36.5	42.0			
19	51.5	68.5	55.5	56.50				62.2	§	43.8	51.0			
20	46.2	44.8	42.8	44.56					§45.5	44.0	45.2			
21	43.0	47.5	43.5	44.10				48.2	§42.2	40.8	42.5			
22	37.5	36.5	(37.8)	37.42				46.5	§37.0	35.5	36.5			
23	38.0	57.3	(49.5)	46.46				40.0	§37.0	32.5	37.8	**1.500		
24	52.5	67.0	59.0	58.00				58.5	§52.0	37.5	51.8		Cloudy	Cloudy
25	49.5	50.6	37.2	44.80	48.9	49.0	37.4	66.7	50.3	48.1	48.5	0.000	Cloudy	Cloudy
26	35.3	40.4	38.1	37.44	33.9	36.4	35.4	51.3	36.0	33.8	34.7	0.077	Cloudy	Cloudy
27	33.3	44.2	36.1	36.60	30.9	38.6	35.8	40.8	34.8	30.4	33.0	0.000	None	Between Milky Way and Capricornus
28	31.3	49.0	40.9	38.68	†30.5	43.2	†40.2	44.3	32.6	28.6	31.0	0.000	None	As yesterday
29	53.5	65.2	59.8	58.36	53.1	59.4	57.9	53.2	53.2	31.0	52.8	0.000	Haze and clouds	Haze and clouds
30	48.0	57.4	46.2	49.16	44.5	48.0	43.3	65.0	48.6	46.2	47.1	0.000	None; some haze	Haze and clouds
31	36.9	55.5	43.7	43.34	36.2	50.0	44.3	57.0	37.9	31.8	36.1	0.000	Cloudy	Cloudy
Sums	1452.2	1797.6	1501.1	1512.08				1699.8		1279.7		6.768		
Means	46.85	57.99	50.04	50.40				58.61		41.28				

Mean temperature for month {mean of 3 means for 8, 2, 8, with double weight given to the morning and evening observations} 50.35 Fahrenheit. Rainfall for month 6.77 inches.

Mean of the 3 means for 8, 2, 8, 51.63 — " — } See discussion of mean temperature from observations at 8, 2, 8, in large volume containing meteorological record for 1841 to 1862 inclusive.
" " " 2 " " 8, 8, 48.44 — " —
" " 51.63 and 48.44 50.04 — " —

Maximum temperature for month (Oct. 3) 76.7 — " —
Minimum — " — " — — — (Oct. 28) 28.6 — " —
— " — (reduced to standard of No. 4) 29.1 — " — See general remarks on observations of 1876.

‡ C. 3235 removed for use in connection with the "time service" Oct. 9, between 8 A.M. and 2 P.M.; replaced some days later.

Relative humidity computed as in March, 1877, from No. 4 and C. 3235; observations on this page.

Date	8 A.M.	2 P.M.	8 P.M.	Date	8 A.M.	2 P.M.	8 P.M.	Date	8 A.M.	2 P.M.	8 P.M.
1	82	52	85	7	85	54	81	28	86	56	90
2	91	63	94	8	100	58	77	29	94	69	86
3	93	82	91	9	94			30	71	43	74
4	95	76	90	25	93	86	97	31	89	61	100
5	97	43	54	26	80	60	70				
6	74	35	67	27	71	52	92				

§ Observations by W. Upton from 2 P.M. Oct. 11 to 2 P.M. Oct. 24, both inclusive. During this time, the readings of the maximum after setting are readings of the upper end of the continuous column of mercury, increased by 10.5 to allow for the length of the detached portion and of the air-bubble by which it is separated from the continuous column; the instrument was not set on Oct. 13 and Oct. 19.

‖ Oct. 9, 5 P.M. Rainfall since 8 A.M. 0.706 inches; Oct. 10, 8 A.M.; rainfall since last measure 0.088 inches; total 0.794 inches.

** Oct. 23, 8 A.M. The rainfall measured is that of Oct. 20, 21, and 22.

†† Zodiacal light Oct. 1, 8 P.M. Yellowish light, not sparkling, in the southwest and obliquely upwards and eastwards between the branches of the Milky Way, rising to the altitude of the head of Sagittarius on reaching the eastern branch.

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Harvard College Observatory.

October 1877.

Date	Wind: Estimated velocity in miles per hour, and direction (of approach).			Clouds: Amount, on scale of 10, and kind (on Poey's system); For explanations, see notes in record for January and February, 1877.			Remarks
	8 A.M.	2 P.M.	8 P.M.	8 A.M.	2 P.M.	8 P.M.	
1	6 SW	6 SSW	5 SSW	0	0	0	
2	3 SW	4 SE	1 N	0	0 haze	10 Pm mist	
3	0 NW	2 E	7 E	10 Pm fog	10 Pm fog	10 Pm	
4	3 E	6 S	4 SE	10 Pm mist	10 Pm M Fm	10 Pm	{A few drops of rain during the day. Heavy rain most of the following night.}
5	11 N	15 N	8 N	10 Pm Fm ↓	0 P Rs	0	
6	1 W	7 NW	0 NW	0	0 M Fm	0	
7	0 calm	2 SE	0 SW	0	2 M Fm	0 P	White frost this morning.
8	0 NW	6 E	5 E	5 P M Fm haze	10 Pm M Fm	10 P; a few stars visible	
9	4 SE	4 ESE	1 E	10 Pm Fm; raining	10 Pm; raining	10 Pm; mist	
10	2 NW	3 NW	0 calm	4 Pm Pr R Rs	4 M Fm	1 P Rs haze	
11	0 calm	[a]1	[a]1	10 Pm Fm fog	10	10; cloudy and rainy	
12	[a]1 W	[a]2 W		10; raining	6; clearing	(2; clearing)	
13	[a]1 NW	[a]2 N	[a]0	0	0	2 Rs in east	Atmosphere unusually clear.
14	[a]1 W	[a](0 NW)	[a]1	0 Rm low in west	(10)	2; clear	
15	[a]0 W	[a]1 ESE	[a](2 E?)	0 haze at horizon	1 Rs at horizon	(10; sprinkling)	
16	[a]0 SW	[a]4 NW	[a]5 NE	10 Fm Pm	5 Pm in north; blackclouds	10	Slight shower at 2½ P.M.
17	[a]2 NW	[a]3 NW		3 Rs all about	0		
18	[a]0 W	[a]2 NW	[a]0 E?	0 Rs about horizon	0 Rm in north horizon	1 Rs scattering	
19	[a]0 W	[a]3 SW	[a]2 NE	10	10	10	
20	[a]2 NE	[a]2 NE	[a]1 NE	10; raining	10 raining	10	
21	[a]2 NE	[a]3 NE	[a]2 NE	10; raining	10	10; raining	
22	[a]5 NE	[a]4 NNE	[a](1 W)	10; raining	10; raining	(5)	{Clearing during the evening; became wholly clear about 10 P.M.}
23	[a]2 SW	[a]3 WSW	[a](2 SW)	1 in horizon	0	(0)	
24	[a]3 WSW	[a]3 WSW	3 S	0 haze in east	2; very hazy	10 P; a few stars visible	
25	3 NE	0 E	6 N	10 Pm	10 Pm	10 Pm; raining	A few drops of rain at times; more towards night.
26	4 NNE	4 NE	3 NNE	10 Pm Fm Pr	10 Pm Fm	10 P	
27	3 N	0 N	0 calm	1 Pm Fm Rs R	0	0	
28	0 calm	0 calm	0 SE	1 Fm Rs	0 Rs	0	Heavy white frost this morning.
29	5 SSW	14 SW	8 SW	10 Pm Fm ↑	10 Pr Pm M Fm ↑	5 P haze	
30	3 WNW	7 W	0 E	10 Pm Fm Rs	6 Rs Rm Pm M Fm →	0 Rs haze	
31	1 N	3 S	0 N	9 P Rs Fm	10 Pm Fm M	10 Pm; raining	White frost this morning. {Rain beginning about 8 P.M.}
Sums	[a]49	[a]83	[a]51	174	166	168	
Means	[a]2.7	[a]4.9	[a]2.8	5.6	5.4	5.6	

[a] Observations by W. Upton from 2 P.M. Oct. 11 to 2 P.M. Oct. 24, both inclusive. During this time the force of the wind is entered on a scale of 10 instead of in miles per hour, and these observations have been omitted in taking the means.

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Meteorological Record of November, 1877.

Date	Barometer 8 A.M.	Barometer 2 P.M.	Barometer 8 P.M.	Thermometer attached to barometer 8 A.M.	Thermometer 2 P.M.	Thermometer 8 P.M.	Psychrometer Dry bulb 8 A.M.	Dry bulb 2 P.M.	Dry bulb 8 P.M.	Wet bulb 8 A.M.	Wet bulb 2 P.M.	Wet bulb 8 P.M.	*Relative humidity Guyot's Tables 8 A.M.	2 P.M.	8 P.M.
1	29.930	29.989	30.072	48.3	54.0	50.0	37.3	50.6	44.7	36.7	43.4	41.0	92	49	69
2	29.909	29.520	29.300	49.0	50.0	54.0	45.2	52.1	55.7	43.3	52.1	55.7	83	99	99
3	29.597	29.707	29.881	50.8	55.4	52.2	45.4	50.3	42.8	40.4	40.6	37.1	60	33	51
4	30.144	30.174	30.286	45.9	51.0	46.5	37.3	45.4	38.5	33.5	37.7	34.2	62	40	59
5	30.227	30.022	29.804	43.7	47.1	50.7	38.6	51.0	54.2	36.4	47.8	52.2	77	83	85
6	29.736	29.961	30.167	52.0	47.0	40.0	42.2	34.6	30.9	39.1	28.6	26.9	72	42	56
7	30.411	30.405	30.426	38.7	49.1	45.2	30.4	47.9	36.1	28.3	40.1	34.1	75	42	78
8	30.389	30.216	30.012	42.6	47.0	50.4	33.8	55.2	56.9	33.4	50.6	52.4	94	69	71
9	29.631	29.633	29.792	55.0	58.4	60.1	62.2	63.6	55.5	61.8	62.5	50.9	97	92	70
10	30.166	30.244	30.289	62.0	50.0	48.0	38.8	38.0	37.5	36.7	35.1	36.1	79	71	85
11	30.208	30.144	30.092	43.0	45.1	45.3	31.8	36.8	33.4	29.5	32.5	31.2	74	57	76
12	30.046	29.951	29.988	42.3	45.6	44.5	29.2	41.0	39.4	27.5	36.1	35.9	79	56	67
13	30.168	30.254	30.344	40.4	48.7	41.1	31.5	39.7	32.4	27.8	33.5	29.4	60	43	67
14	30.396	30.301	30.278	38.1	48.0	48.0	29.3	51.5	45.3	28.5	45.1	43.7	89	55	86
15	30.248	30.146	30.169	47.1	54.2	53.4	45.1	62.6	52.7	44.6	53.9	50.6	94	52	84
16	30.079	30.010	30.080	52.0	57.0	55.5	54.8	63.3	53.7	53.8	58.0	52.9	92	70	93
17	30.118	30.081	30.046	51.4	58.9	54.3	41.1	53.1	42.4	39.6	47.7	42.1	85	64	96
18	29.804	29.817	29.876	50.0	52.9	47.3	43.5	42.6	34.7	43.7	35.4	30.1	100	39	55
19	30.066	30.112	30.228	42.0	51.8	43.3	31.9	36.8	30.0	28.2	30.8	26.4	60	46	59
20	30.401	30.450	30.526	38.0	50.0	42.5	24.4	34.8	27.0	22.8	29.9	24.9	76	53	73
21	30.598	30.568	30.544	38.3	39.8	40.1	23.0	32.3	31.5	22.4	29.7	29.6	89	72	78
22	30.499	30.452	30.437	39.7	43.8	43.4	30.7	40.9	35.8	29.5	36.5	34.0	85	60	80
23	30.436	30.419	30.422	30.9	54.4	46.8	31.9	44.4	40.8	31.5	41.1	39.0	94	72	82
24	30.402	30.357	30.336	45.3	47.0	48.2	43.2	45.6	43.5	40.4	43.3	41.8	75	80	84
25	30.132	30.028	29.969	46.8	47.1	47.7	44.8	43.9	48.0	43.0	44.2	48.2	84	100	100
26	29.926	29.838	29.828	49.2	52.8	55.0	49.8	53.4	55.8	50.0	53.4	55.8	100	99	99
27	29.850	29.897	29.979	54.7	60.3	54.2	55.0	57.3	49.0	54.7	51.1	47.5	97	61	87
28	29.944	29.960	30.038	55.2	60.4	53.0	47.5	52.1	44.2	46.5	41.9	39.3	91	33	59
29	29.859	29.571	29.524	51.0	49.4	47.2	39.6	37.6	33.9	39.5	37.6	34.1	97	98	100
30	29.497	29.518	29.636	43.7	45.0	41.5	31.9	33.1	30.3	31.9	29.8	28.1	98	66	74
Sums	902.817	901.745	902.369	1387.1	1521.2	1449.4	1171.2	1391.5	1256.6				2510	1896	2322
Means	30.094	30.058	30.079	46.2	50.7	48.3	39.0	46.4	41.9				84	63	77

Barometric means reduced to the freezing point: 8 A.M., 30.046; 2 P.M., 29.999; 8 P.M., 30.026.

Observations for comparison of thermometers, made at times when all the bulbs seemed dry.

Date	Time	Psychrometer Uncovered bulb	Psychrometer Covered bulb	No. 4	C. 3235
3	7 2/3 A.M.	44.3	44.6	44.4	45.3
3	1 11/12 P.M.	50.4	50.6	50.8	51.1
4	7 1/2 A.M.	35.6	36.0	35.8	36.8
6	1 2/3 P.M.	34.1	34.6	34.7	35.0
7	7 1/12 A.M.	28.3	28.6	28.6	29.7
7	1 5/12 P.M.	47.3	47.4	47.2	47.6
12	7 1/12 A.M.	28.3	28.7	28.8	29.5
13	7 1/12 A.M.	30.7	31.2	31.3	31.9
17	7 11/12 A.M.	40.6	41.3	41.4	42.0
18	7 1/12 A.M.	31.5	31.8	31.9	32.8
19	2 1/3 P.M.	36.6	37.1	37.2	37.9
20	7 2/3 A.M.	23.8	24.4	24.2	25.0

Additional observations Nov. 2.

	5 P.M.	5 1/8 P.M.
Barometer	29.223	29.202
Attached thermometer	52.4	53.2
Wind	25	
Clouds	10 Pm Fm M; raining	

Remarks on condition of wet bulb of psychrometer, and on Casella 3235 (wetted).

Nov. 6, 2 P.M.; neither frozen; wetted at 1 2/3 P.M.
8 P.M.; — " — " —; — " — " 7 1/2 P.M.
Nov. 7, 8 A.M.; — " — " —; — " — " 7 7/12 A.M.
Nov. 11, 8 A.M.; — " — " —
8 P.M.; — " — " —; (no note on Casella 3235 in the original, presumably because its reading was above the freezing point; but the actual freezing point of this thermometer is 32.9; see general remarks on observations of 1876.)

Nov. 12, 8 A.M.; — " — " —
Nov. 13, 8 A.M.; — " — " —
8 P.M.; — " — " —
Nov. 14, 8 A.M.; — " — " —
Nov. 18, 8 P.M.; — " — " —
Nov. 19, 8 A.M.; — " — " —
2 P.M.; — " — " —
8 P.M.; — " — " —
Nov. 21, 2 P.M.; frozen; wetted half an hour before, but C. 3235 probably not settled after freezing.
Nov. 22, 8 A.M.; same remark as yesterday.

* Relative humidity computed after subtracting 0.2 from each reading of the wet bulb, as in May and subsequently. Failure of wet bulb to freeze not regarded in deducing the relative humidity; see general remarks on observations of 1874.

All observations this month by A. Searle.

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Harvard College Observatory

November 1877.

Date	External thermometer No. 4				Casella 3235 (wet)			Extreme temperatures. Maximum, 8 A.M.		Minimum, 8 A.M.		Rainfall in inches	Aurora	Zodiacal light
	8 A.M.	2 P.M.	8 P.M.	Mean, half weight to 2 P.M.	8 A.M.	2 P.M.	8 P.M.	Before setting	After setting	Before setting	After setting	Gauge C examined at 8 A.M.	8 P.M.	8 P.M.
1	37.7	50.8	45.1	43.28	37.9	44.5	43.3	56.6	38.0	35.3	37.2	0.530	Cloudy	Cloudy
2	46.3	52.5	56.2	51.10	44.1	52.8	56.2	51.0	46.0	37.0	44.8	0.000	‡ Cloudy	Cloudy
3	45.5	50.5	43.3	45.62	41.4	41.6	38.2	60.0	46.3	42.8	45.0	0.860	None; some clouds	Vertex near Capr.
4	37.4	45.9	39.1	39.78	34.8	38.8	36.0	52.0	38.6	34.3	37.0	0.000	Clouds and haze	Apparently as on yesterday; some haze
5	38.7	51.5	54.8	47.70	37.4	48.8	53.0	46.8	39.7	31.7	38.2	0.000	Cloudy	Cloudy
6	42.8	35.1	31.2	36.62	40.0	29.2	28.0	55.6	43.2	38.2	42.0	0.254	None	§ Belt through Capr.
7	30.4	48.0	37.2	36.64	29.3	41.6	36.6	43.4	32.0	25.8	30.3	0.000	None	As yesterday
8	34.2	55.8	57.1	47.68	34.1	51.9	53.1	48.3	35.1	30.0	33.3	0.000	Cloudy	Cloudy
9	62.8	64.3	55.8	60.30	63.0	63.2	52.5	63.0	†61.3	33.3	62.0	0.849	Cloudy	Cloudy
10	39.4	38.7	38.2	38.78	37.8	36.0	37.1	65.4	40.2	38.4	38.6	0.254	Cloudy	Cloudy
11	32.2	37.8	34.0	34.04	30.3	33.8	32.1	41.4	38.1	31.2	31.8	0.000	Cloudy	Cloudy
12	29.7	41.8	39.9	36.20	28.2	37.1	37.5	37.8	31.0	27.1	29.1	0.000	Cloudy	Cloudy
13	32.0	40.1	33.1	34.06	28.5	34.8	32.1	42.9	33.6	29.1	31.3	0.000	Moonlight	Moonlight
14	29.8	51.8	45.8	40.60	29.6	46.0	44.6	40.2	31.0	25.8	29.3	0.000	Cloudy	Cloudy
15	45.2	63.0	54.0	52.28	46.2	54.9	51.7	51.7	46.0	29.2	44.8	0.000	Cloudy	Cloudy
16	55.0	63.8	54.2	56.44	54.5	58.8	54.0	62.8	54.8	44.6	54.0	0.000	Cloudy	Cloudy
17	41.8	53.5	43.7	44.90	40.6	49.3	44.0	63.4	42.8	40.2	41.0	0.033	Fog	Fog and moonlight
18	43.8	43.2	35.1	40.20	44.5	36.2	30.9	54.2	44.2	39.8	43.0	0.033	Moonlight	Moonlight
19	32.4	37.3	30.7	32.70	29.0	31.8	27.1	49.6	33.8	31.0	32.0	0.000	Moonlight	Moonlight
20	24.8	35.2	27.6	28.00	23.4	30.4	25.9	37.8	27.0	23.2	24.2	0.000	Moonlight	Moonlight
21	23.9	33.0	32.1	29.00	23.0	32.8	30.7	35.1	26.0	23.1	23.1	0.000	Cloudy	Cloudy
22	31.3	41.9	36.7	35.58	32.0	38.6	36.0	33.0	32.0	23.1	30.6	0.000	Cloudy	Cloudy
23	32.5	44.8	41.2	38.44	32.1	42.1	40.0	42.4	33.5	30.4	32.0	0.000	Cloudy	Cloudy
24	43.7	46.3	44.0	44.34	41.3	44.0	42.5	45.5	44.0	31.8	43.0	0.000	Cloudy	Cloudy
25	45.3	44.6	48.8	46.56	43.9	45.0	48.8	46.0	45.5	42.6	44.3	0.000	Cloudy	Cloudy
26	50.3	54.0	56.3	53.44	50.8	54.0	56.2	51.4	50.1	42.7	49.2	2.493	Cloudy	Cloudy
27	55.5	57.6	49.7	53.60	55.4	52.0	48.3	58.8	55.6	49.3	54.2	1.467	Cloudy	Cloudy
28	47.7	52.4	45.0	47.56	47.2	43.3	41.4	57.5	48.1	46.0	47.0	0.000	Cloudy	Cloudy
29	40.5	38.5	34.6	37.74	40.6	38.8	35.0	53.8	41.0	39.0	39.2	0.143	Cloudy	Cloudy
30	32.8	33.5	31.0	32.22	32.9	31.0	29.0	41.2	33.0	32.1	32.1	0.684	None	Perceptible but faint; vertex near Saturn
Sums	1184.4	1407.2	1275.5	1265.40				1488.6		1028.1		7.600		
Means	39.48	46.91	42.52	42.18				49.62		34.27				

Mean temperature for month {mean of 3 means for 8, 2, 8, with double weight given to the morning and evening observations} 42.18 Fahrenheit. Rainfall for month 7.60 inches.

Mean of the 3 means for 8, 2, 8, 42.97 — " — } See discussion of mean temperature from observations at 8, 2, 8, in large volume containing meteorological record for 1841 to 1852 inclusive.

" " " 2 " " 8, 8, 41.00 — " —

" " 42.97 and 41.00 41.99 — " —

Maximum temperature for month (Nov. 10) 65.4 — " —

Minimum — " — " — " (Nov. 21) 23.1 — " —

— " — (reduced to standard of No. 4) 23.6 — " — See general remarks on observations of 1876.

Relative humidity, computed as in March, 1877, from No. 4 and C. 3235; observations on this page.

Date	8 A.M.	2 P.M.	8 P.M.	Date	8 A.M.	2 P.M.	8 P.M.	Date	8 A.M.	2 P.M.	8 P.M.	Date	8 A.M.	2 P.M.	8 P.M.
1	97	54	82	9	100	94	76	17	86	69	99	25	85	100	97
2	84	99	97	10	81	70	85	18	100	40	56	26	100	97	94
3	64	37	35	11	76	58	76	19	60	48	57	27	97	84	84
4	71	42	67	12	78	56	74	20	75	51	74	28	93	39	68
5	83	84	85	13	59	49	84	21	82	93	81	29	97	98	99
6	73	41	61	14	92	59	87	22	100	67	88	30	96	71	74
7	83	51	89	15	97	54	82	23	90	75	86	Sums	2567	1985	2416
8	94	73	73	16	94	73	96	24	77	79	84	Means	86	66	81

† Nov. 9, 8 A.M. Colder in the East Transit Room than outside; hence the reading of the maximum thermometer is too low after setting instead of too high as usual. See general remarks on the observations of 1873.

‡ Nov. 3, 2½ A.M. Nearly clear; aurora without streamers; long belts of dark cloud from northeast to southwest, not traceable high in the sky, but conspicuous near the horizon, especially in the northeast, where they radiated from a vanishing point in the aurora.

§ Nov. 6, 8 P.M. The zodiacal light joins the belt of galactic light which extends from the Pleiades to Aquila, passing south of the Milky Way, through Aquarius.

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Meteorological Record of November 1877.

Date	Wind: Estimated velocity in miles per hour, and direction (of approach). 8 A.M.	2 P.M.	8 P.M.	Clouds: Amount, on scale of 10, and kind (on Rey's system). For explanations, see notes in record for January and February, 1877. 8 A.M.	2 P.M.	8 P.M.	Remarks
1	2 NW	2 WNW	0 calm	0	5 M Fm →	9 P Fm	Some white frost this morning.
2	3 SE	10 SSE	2 SSW	10 Pm Fm	10 Pm Fm ⇈; raining	10 Pm; raining	{Rain beginning about 9 A.M.; strong south wind in the afternoon; cleared off about midnight.}
3	13 SW	13 W	8 WSW	0 Pm	5 M Fm →	0 P	
4	5 W	6 NW	0 W	0	0 M Fm	1 P haze	
5	2 SSE	9 S	10 S	10 P	10 Pm Fm ↑	10 Pm Fm	{Some white frost this morning. Some rain towards night.}
6	16 NW	20 NNW	1 W	10 Pm Fm	5 Pr Pm Fm	0	Some snow 11 to 11½ A.M.
7	1 W	2 SW	0 SW	0	0	0 haze	
8	0 SW	4 S	9 S	10 Pm Fm ↑	10 Pr Pm M Fm ↑	10 Pm	A little rain towards night; snow before next morning.
9	10 SSW	2 WNW	0 N	10 Pm Fm ↑; a little rain	10 Pm Fm	1 Pm Fm	Forenoon rainy; afternoon and evening partly clear.
10	7 N	9 NE	7 NE	10 Pm Fm Fm ↓	10 Pm Fm ↓	10 P	A few drops of rain towards night.
11	5 N	4 NE	0 NE	6 Pm Fm ↑ Fm ↓ {cirro-strata, which are higher, probably than the first.}	10 Pm Fm ↑ Fm ↓	9 P Fm	
12	3 NW	1 NW	0 SW	0 P Rs	5 Pm Fm ↘	10 P	
13	8 NW	2 NW	0 calm	0	0	0	
14	1 SSW	10 SW	8 SW	8 Pr Pm Fm	1 P Rs Fm	7 P Fm →	{White frost this morning. Indications of lunar halo 45° across at 8h 5m P.M.}
15	2 SSW	12 SW	2 SW	6 P Rs Fm	7 Pr Pm Rs Fm	10 Pm Fm ↑	Lunar corona about 6 P.M.; afterwards halo 45° across.
16	5 S	10 SSW	1 SSW	9 Pr Rs Pm Fm ↑ Fm ↑↑	8 Pm M Fm ↑ Fm ↑	9 P Fm ↑	{Some rain 9 to 10 A.M. Lunar halo 45° across about 7 P.M.}
17	1 N	1 SE	0 calm	6 Pr R Fm Rs	7 Pr Fm →	2 fog	A little rain in this following night.
18	2 SSE	8 WNW	8 WNW	10 Pm Fm ↑ Fm ↑↑	9 Pm Fm →	0 Fm	
19	4 NW	11 NW	10 NW	0 Pm Fm	0 Fm	0 Rs	
20	3 NNW	4 NW	2 NW	0 P	3 P Fm ↘	0 P	
21	4 N	2 NE	3 NE	2 Pm Fm	10 P	10 P	
22	1 NNW	3 SE	1 SE	10 P	5 P Fm Rm	10 P	A few snowflakes on the ground at 8 A.M.
23	2 N	4 E	2 E	7 Pm Fm	1 P Rs Fm	10 P Fm ←	
24	4 ENE	4 ENE	8 ENE	10 Pm Fm ←	10 Pm Fm ←	10 P	
25	11 ENE	9 ENE	8 E	10 Pm Fm ←	10 Pm Fm ←; raining	10 P; raining	Began raining about 10½ A.M.
26	0 E	4 ESE	9 SE	10 Pm fog; raining	10 Pm fog; raining	10 P; a little rain	
27	3 S	6 SW	6 S	5 Pm Fm ↑ Rs	5 P Fm ↑	10 P; some fog	
28	2 S	6 SW	1 S	6 P Fm →	1 P Fm	8 P haze	
29	1 S	3 NNE	1 NW	10 Pm fog; raining	10 Pm Fm; raining	10 P showing	
30	4 NW	5 WNW	7 WNW	9 P Fm → Fm ⇉	9 P Fm ↘	0 P Rs	{A little snow on the ground this morning and a few snowflakes falling till about 8 A.M.}
Sums	125	186	114	184	186	186	
Means	4.2	6.2	3.8	6.1	6.2	6.2	

Two meteors seen at 8 P.M. Nov. 6; their courses were downwards through Aquila. Meteors occasionally seen at other times; none large or frequent. No watch kept this year for the meteors of Nov. 13 — 15. Notes of meteors Nov. 1 & Nov. 8 received April 5, 1878, and pasted on inside of cover at the beginning of this book.

Summary of observations for comparison of thermometers, March 31 to December 25, 1877, inclusive, in order of temperatures shown by the covered bulb of the psychrometer when dry.

Date	Reading of covered bulb	Uncovered bulb below covered bulb	No. 14 above covered bulb	G. 3235 above No. 14	Date	Reading of covered bulb	Uncovered bulb below covered bulb	No. 14 above covered bulb	G. 3235 above No. 14	Date	Reading of covered bulb	Uncovered bulb below covered bulb	No. 14 above covered bulb	G. 3235 above No. 14	Date	Reading of covered bulb	Uncovered bulb below covered bulb	No. 14 above covered bulb	G. 3235 above No. 14
June 2	87.1	0.2	1.0	−0.9	May 5	59.9	0.0	0.3	−0.2	April 13	49.1	0.2			April 2	40.3	0.3		
Sept. 15	83.5	0.1	0.4	−0.2	Oct. 5	56.8	0.1	0.1	0.2	April 11	49.1	0.2			April 14	39.1	0.4		
July 5	83.4	0.2	0.5	−0.8	April 16	56.2	0.2			Dec. 20	49.0	0.2	0.1	0.5	April 10	38.8	0.3		
Sept. 12	80.6	0.2	0.5	−0.5	Sept. 9	56.1	0.1	0.2	0.1	April 18	48.9	0.2			March 31	37.5	0.6		
May 15	80.1	0.2	0.6	−0.6	Sept. 24	56.0	0.0	0.0	0.4	April 28	48.0	0.3	0.2	0.6	Nov. 19	37.1	0.5	0.1	0.7
Sept. 25	79.4	0.2	0.2	0.1	April 24	55.9	0.1	−0.1	0.4	May 4	47.9	0.3	0.4	0.0	April 3	36.9	0.3		
May 29	78.5	0.1	0.6	−0.3	Sept. 8	55.4	0.2	0.2	0.3	Nov. 7	47.4	0.1	−0.2	0.4	April 15	36.9	0.1		
Sept. 24	77.5	0.1	0.2	−0.1	May 18	55.3	0.3			April 24	47.4	0.4	0.5	1.1	April 5	36.1	0.4		
July 4	75.5	0.0	0.3	0.0	April 26	55.0	0.1	0.2	0.5	May 5	47.1	0.2	0.0	0.1	Nov. 4	36.0	0.4	−0.2	1.0
Oct. 1	74.8	0.1	0.1	0.1	April 27	53.6	0.1	0.6	0.7	April 28	46.8	0.3	0.4	0.8	Nov. 6	34.6	0.5	0.1	0.3
Sept. 14	73.9	0.2	0.2	0.6	April 15	53.6	0.2			April 3	46.4	0.3	0.0	0.4	April 12	33.7	0.3		
June 1	73.3	0.5	0.5	−0.8	May 4	53.4	0.1	0.5	0.0	April 16	45.4	0.1			Nov. 19	31.8	0.3	0.1	0.9
May 14	72.4	0.2	0.4	0.0	April 27	52.7	0.0	−0.3	0.6	April 1	44.6	0.3	0.4	0.9	Nov. 13	31.2	0.5	0.1	0.6
" "	70.5	0.2	0.3	0.2	April 26	50.9	0.1	0.2	0.3	Nov. 3	44.6	0.3	−0.2	0.9	Nov. 12	28.7	0.4	0.1	0.7
Sept. 20	69.8	0.1	0.2	0.0	Nov. 3	50.6	0.2	0.2	0.3	April 11	44.5	0.2			Nov. 7	28.6	0.3	0.0	1.1
April 25	69.7	0.2	0.2	0.1	May 8	50.3	0.1	−0.3	1.1	March 31	43.9	0.3			Dec. 14	28.4	0.5	0.2	0.4
Sept. 9	67.4	0.2	0.5	0.0	Oct. 15	49.9	0.3	0.1	0.3	April 28	43.4	0.5	0.3	0.4	Dec. 14	27.4	0.6	−0.2	0.8
Sept. 13	67.2	0.2	0.0	0.0	April 10	49.9	0.1			April 18	42.6	0.2			Nov. 20	24.4	0.6	−0.2	0.8
June 27	66.7	0.2	0.5	0.6	Sept. 23	49.6	0.0	−0.6	0.9	April 7	41.5	0.3	0.2	0.5	Dec. 25	24.3	0.6		
May 18	66.3	0.3	0.6	0.6	Nov. 7	49.6	0.2			Nov. 17	41.3	0.4	0.1	0.6	Dec. 10	18.5	0.7	0.2	0.4
April 23	64.8	0.1	0.2	0.0	April 7	49.5	0.2	0.4	0.3	March 31	41.2	0.3							
May 17	63.6	0.0	0.7	1.4	April 24	49.5	0.2	0.2	0.1	April 1	41.2	0.3							
April 26	60.9	0.0	0.1	0.3	Sept. 22	49.1	0.3	0.0	0.7	April 9	41.1	0.2							

The conclusions drawn from this summary are given on the next page but one and on the next after that, below the notes on other subjects.

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Harvard College Observatory. December 1877.

Date	Barometer 8 A.M.	Barometer 2 P.M.	Barometer 8 P.M.	Thermometer attached to barometer 8 A.M.	Thermometer attached to barometer 2 P.M.	Thermometer attached to barometer 8 P.M.	Psychrometer Dry bulb 8 A.M.	Psychrometer Dry bulb 2 P.M.	Psychrometer Dry bulb 8 P.M.	Psychrometer Wet bulb 8 A.M.	Psychrometer Wet bulb 2 P.M.	Psychrometer Wet bulb 8 P.M.	*Relative humidity Guyot's Tables 8 A.M.	*Relative humidity Guyot's Tables 2 P.M.	*Relative humidity Guyot's Tables 8 P.M.
1	29.824	29.909	30.065	37.0	43.8	33.8	28.9	32.0	23.0	26.7	27.3	20.0	72	49	53
2	30.288	30.352	30.370	29.3	46.9	31.3	13.4	25.7	20.3	13.1	22.6	18.7	83	45	68
3	30.357	30.243	30.190	29.0	48.9	37.9	17.7	36.0	32.1	17.3	31.3	29.4	84	54	68
4	30.293	30.249	30.224	34.6	46.5	42.0	26.9	43.1	36.6	25.7	37.4	34.8	79	51	79
5	30.050	29.834	29.640	41.3	43.3	47.6	39.4	54.8	56.7	39.6	54.7	56.5	98	99	98
6	29.425	29.518	29.681	49.8	55.9	46.1	44.9	42.5	40.0	44.0	36.7	35.7	90	50	60
7	30.106	30.164	30.187	41.3	54.0	42.2	28.4	34.0	26.9	24.9	27.9	24.5	55	39	65
8	30.032	29.980	30.027	38.8	54.9	44.8	32.5	43.0	34.6	32.0	35.7	31.2	90	39	64
9	30.098	30.157	30.235	37.1	49.6	36.3	27.9	32.0	27.1	26.5	27.5	24.1	77	51	60
10	30.294	30.156	30.041	31.2	34.4	36.0	19.1	32.9	31.7	19.1	29.7	31.7	91	65	96
11	30.062	29.854	(29.810)	35.3	39.2	(37.8)	26.2	33.9	(37.5)	26.0	32.5	(36.2)	90	81	(84)
12	30.088	30.152	(30.212)	39.1	47.5	(42.2)	34.7	43.3	(35.6)	31.8	36.7	(31.9)	67	45	(60)
13	29.844	29.489	29.548	37.6	41.0	44.4	34.5	48.5	42.1	33.6	44.5	37.6	87	69	60
14	29.953	30.012	30.146	38.0	50.2	37.0	26.8	27.9	25.0	22.9	22.9	22.1	48	39	57
15	29.952	29.899	(29.829)	35.4	47.0	(44.0)	34.0	49.8	(42.9)	31.9	39.8	(36.2)	75	31	(43)
16	29.839	29.978	30.176	43.8	57.2	46.3	48.3	52.8	38.1	43.2	44.0	35.4	61	42	71
17	30.070	29.895		39.8	55.8		33.6	53.6		32.9	47.4		88	59	
18	(30.518)	(30.613)	30.604	(38.8)	(51.2)	36.5	(23.7)	(29.0)	25.9	(20.7)	(24.9)	24.5	(54)	(51)	76
19	30.463	30.244	30.153	38.0	40.9	43.4	31.0	45.1	44.8	31.2	40.5	42.7	98	62	81
20	30.116	30.233	30.425	44.0	57.5	42.3	45.7	48.4	33.5	43.8	42.0	30.9	83	52	71
21	30.592	30.574	30.541	36.4	47.8	41.2	21.1	32.8	30.3	20.3	27.0	27.0	80	40	61
22	30.436	30.367	30.392	39.1	40.7	41.0	33.0	39.3	33.0	30.5	34.6	31.5	72	55	81
23	30.483	30.470	30.400	36.7	54.7	40.0	26.3	38.7	31.1	25.9	33.5	29.0	88	50	74
24	30.296	30.212	30.174	35.0	50.3	41.6	23.4	41.4	31.1	23.4	35.4	29.3	92	47	77
25	30.100	30.050	29.982	35.8	52.5	38.1	23.8	38.0	29.4	23.4	33.3	28.6	87	53	87
26	29.914	29.900	29.901	35.7	52.4	39.4	25.0	40.4	31.5	24.5	34.6	30.1	86	48	81
27	29.948	29.947	29.978	35.8	48.8	43.4	23.9	43.4	33.5	23.6	37.7	32.2	88	52	82
28	30.053	30.048	30.091	36.0	42.0	42.1	25.7	40.6	30.7	25.3	36.5	30.1	88	61	89
29	30.047	29.966	29.938	35.1	39.4	43.2	22.8	40.4	31.2	22.8	35.9	30.9	92	58	93
30	29.772	29.564	29.453	37.0	36.7	37.3	32.9	30.2	27.8	32.3	29.6	27.8	89	89	96
31	29.344	(29.302)	29.449	33.5	(34.5)	34.3	20.8	(32.4)	20.9	20.6	(25.7)	19.2	88	(31)	67
Sums	932.657	931.331	901.862	1155.3	1465.5	1213.5	896.3	1225.9	984.9				2520	1657	2202
Means	30.086	30.043	30.062	37.3	47.3	40.4	28.9	39.5	32.8				81	53	73

Barometric means reduced to the freezing point; 8 A.M., 30.062; 2 P.M., 29.992; 8 P.M., 30.030.

Observations in parentheses ( ) were not made at the regular times. The actual times are given below.

Date	Regular times.	Actual times
11	8 P.M.	7 P.M.
12	8 P.M.	6¼ P.M.
15	8 P.M.	8½ P.M.
18	8 A.M., 2 P.M.	8⅓ A.M., 2⅓ P.M.
31	2 P.M.	2¼ P.M.

Observations for comparison of thermometers, made at times when all the bulbs seemed dry; on Dec. 25 C.3235 may have been dry.

Date	Time	Psychrometer Uncovered bulb	Psychrometer Covered bulb	No. 4	C. 3235
10	7⅔ A.M.	17.8	18.5	18.1	19.1
14	7 7/25 A.M.	26.8	27.4	27.2	28.0
14	1 5/24 P.M.	27.9	28.4	28.6	29.0
15	1 5/6 P.M.	49.6	49.9	49.8	50.1
20	1 5/6 P.M.	48.8	49.0	49.1	49.6
25	7 25/24 A.M.	23.7	24.3	24.0	24.0

Remarks on condition of wet bulb of psychrometer and of C. 3235 (wetted).

Dec. 1, 2 P.M. Wet bulb not frozen; wetted over half an hour before; C.3235 frozen.
8 P.M. Both wetted three quarters of an hour before; perhaps now too dry
3, 2 P.M. Both frozen. 8 P.M.; C.3235 frozen, wet bulb apparently not.
7, 2 P.M., 8 P.M. Neither frozen.
8, 8 P.M. Neither frozen
9, 8 A.M. Both frozen. 2 P.M. C.3235 frozen, wet bulb not; wetted at 1 P.M.
12, 8 A.M. Neither frozen.
20, 8 P.M. Neither frozen.
22, 8 P.M. Neither frozen.
23, 8 P.M. Neither frozen.
25, 8 P.M. Neither frozen.
26, 8 A.M. Wet bulb not frozen.
28, 8 P.M. Neither frozen.
29, 8 P.M. Neither frozen.

All observations this month by A. Searle.

* The relative humidity has been computed after applying the corrections given in the general remarks on the observations for 1877.

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Meteorological Record of December 1877.

Date	External thermometer No. 4				Casella 3235 (wet)			Extreme temperatures				Rainfall in inches	Aurora	Zodiacal light
								Maximum, 8 A.M.		Minimum, 8 A.M.				
	8 A.M.	2 P.M.	8 P.M.	Means, half weight to 2 P.M.	8 A.M.	2 P.M.	8 P.M.	Before setting	After setting	Before setting	After setting	Gauge C examined at 8 A.M.	8 P.M.	8 P.M.
1	29.2	32.6	23.6	27.64	27.9	28.7	21.0	34.0	30.8	27.6	28.8	0.000	None	As yesterday
2	13.9	26.2	21.0	19.20	13.3	23.5	20.0	33.9	17.1	12.7	13.1	0.000	A little light, possibly aurora	†As yesterday
3	18.0	36.8	32.3	27.48	17.8	32.8	30.6	26.5	21.0	13.1	17.2	0.000	Less light than yesterday	As yesterday, but less distinct
4	27.2	43.4	37.3	34.48	26.8	39.2	37.1	37.0	29.0	17.3	26.7	0.000	Cloudy	Cloudy
5	40.2	55.2	57.0	49.92	40.5	55.0	57.0	43.6	40.1	26.4	39.2	0.375	Cloudy	Cloudy
6	45.4	42.8	40.4	42.88	44.9	37.8	37.0	58.0	46.0	39.0	44.8	0.375	Cloudy	Cloudy
7	29.0	34.1	27.8	29.54	25.8	29.0	27.0	46.1	30.8	28.3	28.3	0.000	None	Apparently to Aquilus
8	32.9	43.3	35.0	35.82	32.9	36.9	32.8	35.0	33.4	26.0	32.4	0.000	None	Probably a little; but sky hazy
9	28.2	32.6	27.8	28.92	28.9	29.0	25.6	43.3	29.4	26.9	27.9	0.000	Moonlight	Moonlight
10	19.4	33.6	32.4	27.44	19.8	32.0	32.8	35.0	21.0	18.8	18.9	0.000	Cloudy	Cloudy
11	26.8	34.6	(37.8)	32.76	27.0	33.7	(37.0)	34.3	27.9	18.9	26.1	0.044	(Cloudy)	(Cloudy)
12	35.0	43.9	(36.2)	37.26	32.8	38.0	(34.6)	41.4	35.7	25.9	34.7	0.000	(Moonlight and clouds)	(Moonlight and clouds)
13	35.0	49.2	42.8	40.96	34.8	45.6	39.0	44.0	35.7	25.8	34.8	0.011	Moonlight and clouds	Moonlight and clouds
14	27.3	28.5	25.3	26.74	23.7	24.0	23.0	49.4	29.0	26.5	26.7	0.000	Moonlight and clouds	Moonlight and clouds
15	35.2	50.0	(43.3)	41.40	32.9	41.6	(37.5)	34.5	34.9	23.5	34.1	0.000	(Moonlight and clouds)	(Moonlight and clouds)
16	48.6	53.1	38.8	45.58	44.4	45.0	37.2	50.6	48.0	34.0	48.1	0.011	Moonlight	Moonlight
17	33.5	53.8			33.9	48.7		53.3	36.0	29.0	33.5	0.000		
18	(24.0)	(29.7)	26.8	26.26	(21.5)	(26.0)	25.5	(54.8)	(26.0)	(22.8)	(23.8)	(0.000)	Cloudy	Cloudy
19	31.8	45.7	45.3	39.98	32.9	41.7	43.4	31.7	32.4	23.6	31.2	0.000	Moonlight	Cloudy
20	46.2	48.9	34.4	42.02	44.8	42.9	32.2	46.0	46.0	31.1	45.4	0.000	Moonlight	Moonlight
21	21.8	33.4	31.1	27.84	20.9	29.0	29.0	53.9	23.9	21.0	21.0	0.000	Cloudy	Cloudy
22	33.5	40.0	33.5	34.80	32.9	35.8	32.2	33.6	34.0	20.9	32.9	0.000	Moonlight	‡Moonlight
23	26.8	39.0	31.5	31.12	26.8	35.0	30.7	40.4	28.3	26.0	26.0	0.000	None	Distinct not bright; pretty, but not so distinct as the day from between the Moon
24	24.0	41.9	31.9	30.74	24.0	37.0	30.0	39.7	25.4	23.0	23.2	0.000	None	To Mars
25	25.3	38.4	30.2	29.88	24.1	34.9	30.3	41.9	26.0	23.1	23.8	0.000	None	To Mars; dim
26	25.7	40.5	32.1	31.22	26.1	36.1	31.0	39.0	26.7	23.3	25.0	0.000	None	To Mars; dim
27	24.3	43.5	34.1	32.06	24.3	39.0	33.4	40.9	26.0	23.0	23.6	0.000	None; some light on top, probably from lamps	To Mars; dim
28	26.1	40.9	31.6	31.26	26.0	38.4	31.0	43.8	28.0	23.5	25.4	0.000	None	To Mars
29	23.0	40.6	32.6	30.36	23.5	37.2	32.1	40.9	24.4	21.8	22.2	0.000	None	To Mars; dim
30	33.8	30.8	28.6	31.12	33.2	36.2	28.4	40.4	34.2	22.2	33.3	0.000	Cloudy	Cloudy
31	21.2	(32.9)	21.8	23.78	21.0	(26.8)	20.0	34.3	23.0	20.2	20.7	0.022	None	To Mars; dim
Sums	912.3	1239.9	1004.3	990.46				1281.2		745.2		0.838		
Means	29.43	40.00	33.48	33.02				41.33		24.04				

Mean temperature for month {mean of 3 means for 8, 2, 8, with double weight given to the morning and evening observations} 33.16 Fahrenheit. Rainfall for month 0.84 inches.

Mean of the 3 means for 8, 2, 8, 34.30 — " — {See discussion of mean temperature from observations at 8, 2, 8, in large volume containing meteorological record for 1841 to 1852 inclusive.}
" " " 2 " " 8, 8, 31.45 — " —
" " 34.30 and 31.45 32.88 — " —

Maximum temperature for month (Dec. 6) 58.0 — " —
Minimum — " — " — " — (Dec. 2) 12.7 — " —
— " — (reduced to standard of No. 4) 13.2 — " — See general remarks in observations of 1876.

† Dec. 2, 8 P.M. Vertex of zodiacal light a little above and west of Saturn, joining the belt of faint galactic light extending from the Pleiades to Aquila, south of the Milky Way.
‡ Dec. 22, 6 P.M. Cone zodiacal light; brightness of Venus made it a little doubtful.

Remarks on the summary of comparisons of thermometers, given on the last page but one.

In order to make some decision on the use to be made of these comparisons, the figures of the third, fourth, and fifth columns of the summary were charted, and then divided into groups arbitrarily determined by the aid of the appearance presented by the diagrams. The mean value of the figures in each group was then taken as the result to be derived from the comparisons at temperatures between those selected as the limits of the groups. An additional diagram, and series of groups were obtained from the addition of the corresponding figures of the fourth and fifth columns of the summary, and those obtained from the fifth column alone were rejected, since it appeared from the results that it would be best to refer all the thermometers to the covered bulb of the psychrometer. The freezing point of this thermometer appears by the ordinary course of observation with it to be correctly indicated by the scale; that of No. 3235 appears to be

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Harvard College Observatory.

December 1877.

Date	Wind. Estimated velocity in miles per hour, and direction (of approach). 8 A.M.	2 P.M.	8 P.M.	Clouds. Amount, on scale of 10, and kind (on Poey's system). For explanations, see notes in record for January and February, 1877. 8 A.M.	2 P.M.	8 P.M.	Remarks.
1	3 W	§6 NW	4 NW	1 P Rs Fm	§4 P Fm → Fm ↘	0	
2	5 N	2 NW	0 N	0 P	0 M Fm	0	
3	3 SW	7 SSW	8 SW	5 P Fm →	3 P Fm →	0	
4	1 WSW	1 SW	1 S	5 P Rs Fm →	9 P	10 P	Rain in the following night.
5	0 calm	11 S	17 S	10 Pm fog	10 Pm Fm ↑; a little rain	10 P; raining	
6	4 WSW	7 W	7 SW	10 P Fm ↑	5 M Fm →	10 Pm	A few drops of rain about 11 A.M.
7	10 NW	4 W	0 S	0 Fm	4 P Fm →	1 P haze	
8	2 SW	6 W	0 calm	0 Rs haze	1 M Fm	0 haze P	
9	3 WSW	5 NW	1 SW	0 P haze	4 M Fm ↘	0	
10	0 calm	3 SSE	0 calm	6 P Rs	10 Rs Fm	10 P; snowing	A little snow in the evening and following night.
11	0 calm	2 ESE	(2 SW)	9 Rs Fm →	10 P	(10 P Fm →)	It began falling about 6 P.M.
12	3 NW	5 WNW	(1 N)	0 P	2 M Fm	(1 P)	Began snowing about 10½ A.M.; but hardly any fall.
13	2 SE	3 WSW	10 SW	10 P; a little rain	10 Pm Fm →	1 P Fm	A little snow in the following night.
14	9 NW	28 NW	2 WNW	0 Fm	0 Rs	2 P	
15	1 W	2 W	(4 SW)	10 P Fm Rs	9 P Fm Rs	(9 P Rs)	{Hale 45° across round moon at 8½ P.M.
16	2 W	5 NW	0 calm	9 Rs Rs	0 Rs Fm	0 Rs	A little rain in the following night.}
17	3 SW	10 SW		5 P Rs R Fm →	0 haze Rs		
18	(5 N)	(5 NNE)	2 NE	(0 Rs Fm)	(0 P Rs Fm)	10 Pm Fm ←	
19	0 S	6 SW	11 SW	10 P	10 P	9 P Fm →	{A few snowflakes about 9 A.M.
20	4 W	13 N	2 NNE	6 P Fm Rs	1 P M Fm Rs	0 P	A few drops of rain in the afternoon.}
21	3 N	1 NW	0 calm	0 Rs Fm	7 P Rs Fm	10 P	
22	0 calm	3 NW	0 NW	10 P Fm ↓	10 P	0 P	
23	1 NW	1 N	0 calm	0	0	0	
24	1 NNW	2 NE	0 NE	0 Rs Fm haze	1 P R Rs Fm	0 haze	
25	3 N	0 N	0 calm	0 haze	0	0	
26	0 calm	0 calm	0 NW	6 P Fm →	0 Rs	0	
27	1 NNW	0 N	0 calm	0 haze	0	1 fog	
28	1 N	2 NE	0 N	0 haze	0	0	
29	1 WNW	0 NE	0 NW	0 haze	1 P Rs	0 haze	
30	6 NE	7 NE	7 NE	10 P Fm	10 P	10 P; a little snow	
31	5 N	(9 N)	12 N	0 P	(0)	0	
Sums	82	156	91	122	121	104	
Means	2.6	5.0	3.0	3.9	3.9	3.5	

§ Dec. 1, 2 P.M. Observations of wind and clouds not recorded at the time; recorded from memory at 8 P.M.

32.8 or 32.9, in conformity with the results of the experiments noted in the general remarks on the observations for 1876. To confirm this observation, a mixture of ice and water was applied on Jan. 17, 1878, about 1 P.M., the external temperature being about 20, to the bulbs of the psychrometer and of C. 3235. The readings which resulted were as follows: uncovered bulb 31.7; covered bulb 32.0; C. 3235 32.8. This experiment was tried without dismounting the thermometers; it could not be tried with No. 4. The different ways in which the thermometers are mounted, and their different situations with respect to the woodwork near them, make it inexpedient to make any system of corrections for their readings dependent on the Kew certificate of C. 3235 (according to which it was correct at 32 & 42, 0.2 too high at 52 & 62, and 0.1 too high at 72, 82 & 92), corrected for subsequent changes of freezing point. It is probable that as now situated its relative decrease and the relative increase of No. 4 at high temperatures, are both actual (the uncovered bulb of the psychrometer, however, follows No. 4 pretty well in its changes, although somewhat differently mounted; so that perhaps these two thermometers are the most nearly correct in the proportions of their tubes and scales; in that case C. 3235 may be the only one much affected by its situation). On the whole, it seems best to take the covered bulb of the psychrometer as correct, and reduce the others to that. The results obtained by the method described on the last page, in the beginning of this note, are given below.

Uncovered bulb below covered bulb. Limits	Sums	No. of comparisons	Means.	No. 4 above covered bulb. Limits	Sums	No. of comparisons	Means.	C. 3235 above covered bulb, reflecting one anomalous observation of Nov. 17. Limits	Sums	No. of comparisons	Means.
Below 28	25	4	0.6	Below 28	−0.2	3	−0.1	Below 28	1.8	3	0.6
28 to 40	5.8	15	0.4	28 to 50	2.8	26	0.1	28 to 45	10.3	13	0.8
40 to 48	5.3	19	0.3	50 to 65	2.8	16	0.2	45 to 50	7.7	13	0.6
48 to 50	2.4	12	0.2	65 to 80	3.8	12	0.3	50 to 68	6.9	19	0.5
50 to 65	2.0	19	0.1	80 to 85	2.1	5	0.4	68 to 75	2.1	7	0.3
65 and over	4.7	20	0.2	85 and over	0.9	2	0.5	75 to 80	1.0	4	0.2
					1.0	1	1.0	80 and over	0.0	5	0.0

The column of limits gives readings of the covered bulb of the psychrometer, when dry.

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General remarks on the observations for 1877.

Range of temperature

Minimum temperature observed in 1877 — 1.7 Jan. 25. (This reading is reduced to the standard of thermometer No. 4).

Maximum temperature observed in 1877 — 89.2 Aug. 9. (This is the unchanged reading of the maximum thermometer).

Observers

The names of the observers are given in the record of each month. Professor Pickering was acting in the office of Director of the Observatory before the end of 1876, but entered formally on his duties on February 1, 1877.

Barometers

The barometer used throughout the year was Newman 68, mounted as in 1875 and 1876. See note dated July 31, 1877, in the record for July, 1877, for height of this barometer above the floor, and its presumed height above the sea.

Barometer Newman 57, in use previous to Oct. 19, 1874, remained unmounted from that time to the autumn of 1877, when it was mounted in the principal dome, but was broken in the process by the carpenter employed in it.

Thermometers

Casella 12530, removed to the dome in January, 1876, was afterwards broken there.

The bulb of Casella 3235 was covered with a piece of cotton cloth at the beginning of 1877, and the instrument was used as a wet bulb thermometer throughout the year. It was occasionally removed for use in the time service. See notes on last two pages.

The two thermometers formerly constituting the psychrometer were provided with new scales by Mr. Huddleston, and remounted at the end of March, 1877. The bulb of one was covered by Mr. Huddleston with a piece of muslin. After March, they were again in use as a psychrometer.

No. 4 has remained without change of place or mounting for over ten years past.

Comparisons between the uncovered and covered bulbs of the psychrometer, No. 4, and Casella 3235, were frequently made during the year, with the results given in the record for various months; see especially the notes at the foot of the two pages preceding this. The reductions of the other thermometers to the covered bulb of the psychrometer, to be adopted for the present, are according to those given in the following table. The figures given in each column of limits are readings of the instrument to which the corresponding corrections are to be applied. The nearest whole degrees are always taken in deriving these limits from those in the table at the foot of the last page.

Uncovered bulb		No. 4		Casella 3235	
Limits	Reduction	Limits	Reduction	Limits	Reduction
Below 27	+0.6	Below 28	+0.1	Below 29	−0.6
27 to 40	+0.4	28 to 50	−0.1	29 to 46	−0.8
40 to 48	+0.3	50 to 65	−0.2	46 to 51	−0.6
48 to 50	+0.2	65 to 77	−0.3	51 to 68	−0.5
50 to 65	+0.1	77 to 81	−0.4	68 to 75	−0.3
65 and over	+0.2	81 to 86	−0.5	75 to 80	−0.2
		86 and over	−1.0	80 and over	0.0

Relative humidity

The computed relative humidity given in the record for January, February and March, 1877, depends upon observations made with No. 4 and Casella 3235, and reduced by means of the approximate corrections given in the general remarks on the observations for 1876; that given in the body of the record for April, May, June, July, August, September, October, and November, 1877, depends on observations with the psychrometer corrected, as explained in the record for each month (usually by subtracting 0.2 from each reading of the covered bulb); in the notes added to the record for the same months are given the results for relative humidity obtained from observations with No. 4 and Casella 3235 and reduced as in the first quarter of the year. For December 1877, the relative humidity obtained from the observations made with the psychrometer has been determined after applying the reductions given on this page to the readings of the uncovered bulb. The relative humidity obtained from observations made in the same month with No. 4 and Casella 3235, both corrected by the reductions given on this page, is as follows. The parentheses indicate observations not made at the regular times, as explained in the record for December, 1877; the small figures give the excess of these results over those derived from the psychrometer.

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Relative humidity (continued)

Date	8 A.M.		2 P.M.		8 P.M.		Date	8 A.M.		2 P.M.		8 P.M.		Date	8 A.M.		2 P.M.		8 P.M.	
1	80	8	56	7	57	4	9	100	23	57	6	67	7	17	97	9	64	5		
2	76	-7	54	9	75	7	10	95	4	77	12	97	1	18	(59)	5	(52)	1	76	0
3	85	1	55	1	76	8	11	94	4	83	2	(86)	2	19	100	2	63	1	80	-1
4	86	7	59	8	91	12	12	71	4	48	3	(77)	17	20	84	1	52	0	72	1
5	96	-2	97	-2	98	0	13	91	4	68	-1	62	2	21	78	-2	50	10	70	9
6	90	0	53	3	64	4	14	50	2	44	5	63	6	22	86	14	56	1	80	-1
7	59	4	44	5	83	18	15	70	-5	38	7	(47)	4	23	91	3	57	7	84	10
8	92	2	43	4	71	7	16	64	3	43	1	78	7	24	90	-2	53	6	73	-4

Date	8 A.M.		2 P.M.		8 P.M.	
25	75	-12	61	6	93	6
26	96	10	55	7	82	1
27	91	3	57	5	85	-3
28	90	2	72	11	86	-3
29	97	5	64	6	87	-6
30	86	-3	86	-3	92	-4
31	87	-1	(35)	4	65	-2
Means	84	3	58	5	77	4

The failure to freeze at temperatures below 32 Fahrenheit of the wetted bulbs, has often been recorded in the notes attached to the record, but has been wholly disregarded, as heretofore, in the computation of relative humidity.

Maximum — No change has been made in the maximum thermometer or in the manner of reading it. See general remarks on the observations of 1872 and 1873.

Minimum — No change has been made in the minimum thermometer or in the manner of reading it. See general remarks on the observations of 1876. This thermometer has now been in use without change for over ten years.

Wind — The vane and anemometer continue as described in the general remarks on the observations of 1876. The anemometer has not been used except that its apparent rate, as estimated by the eye, frequently aids in estimating the velocity of the wind. The letters attached to the vane have been repeatedly set in their proper positions but have always soon got out of place again.

Rainfall — Gauge C, mounted as heretofore, has been the only one in use. Falls of snow have been measured in the manner described in the general remarks on the observations of 1872. The inside diameter of the glass in recent use is considered to be $1\frac{13}{16}$ inches.

Mean temperature — The mean temperature has been derived from the observations at 8 A.M., 2 P.M., and 8 P.M., by allowing double weight to the morning and evening observations. A discussion of the subject from such data as were at hand, (recorded on a ~~blank leaf, and by papers pasted upon it, in~~ the large volume containing the meteorological record of this Observatory for the years 1841 to 1852 inclusive), made it seem likely that in this manner the results for mean temperature would agree tolerably with those obtained here in previous years, when the hours of observation were different.

North meridian mark — See note on the north meridian mark in the record for June, 1877.

Phenomena — The last months of the year were unusually mild. Very little snow had fallen up to the end of December.

Aurora and zodiacal light — Aurora and zodiacal light have been regularly looked for at 8 P.M., except during June and July. The results appear in the record. When moonlight or clouds are recorded, the meaning of the record is that the phenomenon looked for may have been present but concealed by these hindrances to the observation.

The zodiacal light has probably been somewhat fainter in the latter part of 1877 than in some recent years about the same time. It seems, however, to be a pretty constant appearance; but drawings, if made, might show more variation than would otherwise be noticed. There is a belt of faint light, apparently of similar nature to the Milky Way, which reaches from the Pleiades to Aquila, joining the Milky Way at these regions but elsewhere lying to the south of it leaving a darker space between the Milky Way and itself. This belt of light, during the autumn and winter, is liable to be taken for zodiacal light, and several of the observations recorded in this volume are probably in error on this account.

Hours of observation. — The hours adopted at the close of 1876 (8 A.M., 2 P.M., and 8 P.M.) have been found much more convenient than those previously in use. The 8 A.M. observation occurs at the time of the "international" observation (7h 35m Washington mean time).

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Table showing mean temperature (T) in degrees Fahrenheit, and total rainfall (R) in inches, at Harvard College Observatory

Year	January		February		March		April		May		June		July		August		September		October		November		December		Whole year	
	T	R	T	R	T	R	T	R	T	R	T	R	T	R	T	R	T	R	T	R	T	R	T	R	T	R
1850	27.2	3.86	29.3	2.51	32.6	3.28	42.4	4.79	51.4	7.22	67.2	2.97	71.6	2.62	67.0	7.64	60.9	9.82	51.5	2.51	41.0	3.59	25.3	3.34	47.3	54.15
1851	25.5	1.06	29.9	4.22	36.3	2.01	44.5	9.10	55.5	4.14	64.8	1.62	71.4	3.21	68.0	1.21	61.1	3.98	52.9	4.67	34.8	4.96	22.9	2.00	47.3	42.18
1852	20.8	2.22	27.4	0.62	32.9	2.10	41.0	7.94	56.7	2.30	67.4	4.03	72.4	1.86	66.6	7.50	62.1	2.01	50.4	2.92	38.3	3.83	35.0	3.17	47.6	40.50
1853	25.8	3.88	29.2	5.70	35.8	3.31	45.1	3.70	56.4	6.45	66.8	0.55	70.6	3.02	67.5	8.59	61.2	5.95	47.8	3.49	39.6	4.91	26.4	4.29	47.7	53.84
1854	23.9	1.86	23.5	3.97	32.4	2.95	42.3	4.84	58.7	5.45	65.6	3.58	74.4	3.24	68.4	0.36	61.5	4.36	52.5	2.11	41.2	7.98	24.4	4.47	47.4	45.16
1855	28.4	7.26	20.2	3.74	32.3	1.16	44.1	3.99	53.4	1.51	65.5	3.58	72.2	4.84	67.3	2.27	61.4	1.22	51.5	5.51	40.0	5.33	28.6	7.19	47.1	47.60
1856	16.8	5.30	20.9	0.57	27.0	0.97	44.0	3.44	52.6	6.73	68.1	2.87	72.7	4.24	67.2	14.98	63.0	4.66	51.1	3.24	38.7	2.89	24.0	3.90	45.5	53.79
1857	15.2	7.87	33.6	3.72	32.9	3.50	41.8	8.95	54.7	5.17	63.4	1.71	71.6	6.33	68.2	6.67	62.0	2.94	51.3	3.69	41.3	2.56	33.2	4.83	47.4	57.94
1858	30.9	3.44	22.2	1.86	31.6	1.77	45.3	3.81	52.9	3.71	67.8	7.55	69.9	4.36	66.6	5.57	61.8	5.11	53.0	2.87	35.3	2.38	28.0	3.04	47.1	45.47
1859	25.4	8.23	28.5	6.48	38.6	8.44	42.9	2.36	58.1	2.98	64.2	6.81	69.7	1.50	68.0	5.39	58.8	5.37	46.5	3.12	42.0	3.68	24.4	4.99	47.3	59.35
1860	27.7	1.00	25.8	2.21	38.4	1.73	44.2	1.32	56.4	2.26	65.4	7.41	68.1	5.19	69.5	5.24	59.7	9.33	50.8	1.86	43.4	4.12	26.6	4.75	48.0	46.42
1861	22.9	8.93	32.6	2.79	35.0	6.56	44.3	6.02	54.5	3.19	65.9	2.56	71.9	3.59	67.6	5.57	62.0	1.77	54.2	2.68	38.4	3.31	30.6	3.31	48.8	50.28
1862	22.9	7.70	22.7	2.79	32.7	6.21	44.0	1.73	58.3	2.32	63.6	6.29	69.3	5.05	70.1	6.29	60.1	4.66	53.0	5.24	40.0	6.73	27.6	2.20	47.0	57.19
1863	28.8	4.43	25.1	1.63	27.2	2.46	44.2	7.39	59.1	1.67	65.3	2.47	73.2	12.43	73.2	5.57	60.3	2.98	51.9	3.40	42.3	6.54	25.7	5.45	48.0	56.42
1864	25.0	3.34	27.4	0.89	34.4	5.59	42.1	7.81	56.4	2.91	67.8	0.78	73.6	1.20	73.3	2.53	60.1	1.68	47.8	4.60	39.6	3.52	27.4	4.59	47.9	39.46
1865	16.8	4.87	24.2	4.31	37.9	4.25	49.6	2.88	58.1	6.24	73.1	2.20	73.4	3.67	71.1	1.76	66.7	1.00	48.2	5.71	40.2	3.68	29.6	3.02	49.1	43.59
1866	22.4	no record	26.8	no record	32.8	3.60	47.8	1.66	53.4	3.92	66.1	2.74	74.2	3.32	65.2	1.73	61.9	5.71	49.6	0.96	41.8	2.38	28.5	0.58	47.5	26.60 (Ad 5.32 31.92)
1867	18.6	4.36	32.2	4.10	30.8	4.22	44.7	2.08	53.1	2.96	66.9	1.75	69.2	5.45	70.4	7.95	60.0	0.50	50.9	5.02	38.7	1.84	23.1	1.48	46.6	41.71
1868	22.0	2.53	20.1	0.95	32.3	1.85	42.1	4.73	50.8	7.32	64.2	2.50	73.6	0.78	69.7	4.93	59.9	7.07	46.4	1.18	36.5	4.31	25.6	1.74	45.3	39.89
1869	27.9	3.43	28.9	5.80	26.6	5.33	43.6	2.03	54.0	4.94	64.2	3.64	70.8	2.65	67.6	1.55	62.3	5.92	48.7	5.18	36.4	2.43	28.4	5.08	46.6	47.98
1870	32.7	5.69	24.5	4.22	30.0	4.66	46.6	6.13	57.6	1.97	68.5	3.83	72.9	1.20	71.8	2.03	62.7	1.81	53.3	3.76	41.1	3.52	32.6	2.71	49.5	41.53
1871	23.3	1.45	27.6	2.63	42.7	3.70	47.8	3.03	58.9	3.60	65.5	5.35	70.7	2.96	70.9	3.10	57.0	1.08	51.5	5.70	34.7	4.78	24.2	3.18	47.9	40.56
1872	24.8	1.93	26.3	2.30	23.6	3.09	44.0	2.68	57.1	3.51	67.0	4.64	73.1	5.17	70.8	10.97	62.9	6.67	50.7	3.66	37.6	4.18	21.3	3.93	46.6	52.73
1873	22.8	5.97	24.0	4.04	30.7	3.36	42.4	3.08	55.3	4.09	66.1	0.50	71.6	3.67	67.2	5.07	60.8	3.22	51.0	4.28	31.4	4.89	30.4	4.64	46.1	46.81
1874	26.2	3.28	24.7	4.42	32.9	1.49	36.9	6.39	55.3	3.50	65.6	3.87	71.5	2.54	65.8	6.82	61.9	1.52	50.3	1.07	38.3	2.33	29.1	1.50	46.5	38.73
1875	18.1	3.22	18.5	3.54	28.4	8.10	40.4	4.73	56.2	3.08	66.0	6.60	71.3	2.88	70.4	5.66	58.0	3.46	48.8	3.83	33.5	4.86	28.9	1.04	44.9	51.00
1876	30.1	1.82	26.7	4.74	32.8	6.53	43.5	4.65	55.3	3.07	70.0	1.92	75.0	6.08	70.2	1.38	59.4	3.77	47.0	1.82	40.7	6.78	21.2	5.09	47.7	47.65
1877	21.4	3.87	30.7	0.89	33.8	7.46	44.8	3.66	56.6	3.58	69.2	2.26	72.4	2.66	71.9	4.58	63.8	0.51	50.4	6.77	42.2	7.60	33.2	0.84	49.2	44.68

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Remarks on the meteorological Observations on record at Harvard College Observatory.

The records of this kind known to exist at the present time (Jan. 23, 1878), are as follows:

1. A book containing observations said to have been made at Cambridge from October 1837 to December 1839. Observer unknown, and record rather obscure. The times of observation, when given, are sunrise, noon, sunset, or A.M., noon, P.M., without indication of the hours. This record has not been used for making out the summary given on this page, below.

2. A book containing the meteorological record kept by W. C. Bond at Dorchester, Aug. 22 to Nov. 12, 1838. The hours of observation are given with the observations. The "mean temperatures" were derived from this record, in 1873, by taking the means of the observations made about sunrise, about noon, and about sunset, the mean of these means being the mean temperature of the month, or what is entered as such.

3. A book in brown paper covers marked "No. 105" in pencil, and containing a continuation of the record in No. 2, just mentioned. The record begins 1838, Nov. 20, and extends to Aug. 21, 1839. The "mean temperatures" were derived from this record at the time and in the way just stated.

4. Large sheets of meteorological observations made (according to the headings, except as stated just below) at noon, sunset, and sunrise, for September, October, November and December, 1839, and for the year 1840 except October. The average recorded mean temperature of October for the first 32 years is 50, and taking this for the mean temperature of October 1840 the mean temperature for that year will be 47.4, as entered in the table below. The time of observing after January, 1840, becomes 3 P.M., 9 P.M., 3 A.M., and 9 A.M., or 3 P.M., 9 P.M., sunrise, and 9 A.M. Whether these or four observations were made daily, the mean of the means for the several hours was entered as the mean temperature of the month. This reduction was made in 1873.

5. Large bound volume of sheets like those just named, covering the years 1841 to 1852 inclusive. The hours of observation were sunrise, 9 A.M., 3 P.M., 9 P.M. There are many unbound duplicates of observations belonging to this period. The mean of the four means had in all or most cases been taken for each month. The work was partly checked in 1873.

6. Unbound sheets like those already named, for the years 1853 to 1866 inclusive, and many duplicates. After 1856, the hours are 7 A.M., 9 A.M., 2 P.M., 9 P.M., until the end of August, 1862; afterwards 9 A.M. only.

7. Record books of series P and Q. Hours variable in 1866, afterwards (for thermometer) 7 A.M., 2 P.M., 9 P.M., to end of 1876. For 1877, 8 A.M., 2 P.M., 8 P.M., with double weight given to the morning and evening observations, to make the result conform better to the previous record.

Table showing mean temperature (T) in degrees Fahrenheit, and total rainfall (R) in inches, from observations on record at Harvard College Observatory.

The place where the observations were made was, in 1838 and 1839, Mr. W. C. Bond's residence in Dorchester; from about the end of 1839 to September, 1844, the "Dana place", on the corner of Harvard and Quincy Streets, in Cambridge; afterwards, the grounds of Harvard College Observatory, on Concord Avenue and Bond and Garden Streets, Cambridge. See Annals of Harvard College Observatory, Vol. I, Part I, pp. VI, XVI. For the times of observation, and the meaning of the expression "mean temperature", see the remarks on this page, above.

Year	January		February		March		April		May		June		July		August		September		October		November		December		Whole year	
	T	R	T	R	T	R	T	R	T	R	T	R	T	R	T	R	T	R	T	R	T	R	T	R	T	R
1838																	62.1		49.0		36.1		26.5			
1839	27.1		28.8		35.5		47.1		55.8		61.4		71.9		67.1		61.9		51.0		36.7		31.4		48.0	
1840	20.0		30.8		34.4		48.4	3.68	55.6	2.30	66.2	2.51	71.8	4.39	70.3	2.50	59.9	2.89			36.6	9.30	24.7	1.91	47.4 (nearly)	29.48 (8 months)
1841	27.9	4.90	22.3	1.81	33.1	2.74	41.1	4.71	53.2	1.99	67.4	0.66	69.8	3.02	68.5	6.15	62.3	3.27	44.6	3.72	36.4	2.76	30.0	5.14	46.4	40.87
1842	27.2	0.78	31.6	3.18	37.4	2.76	44.4	3.36	51.7	2.53	62.6	5.84	72.7	1.42	67.5	5.60	58.2	3.34	47.9	1.26	34.8	4.14	23.5	6.64	46.6	40.85
1843	29.7	2.26	16.8	6.56	25.4	5.83	43.5	4.13	54.5	2.17	64.2	5.38	69.2	2.47	69.9	8.75	60.6	1.52	47.5	5.81	34.3	4.26	26.9	3.34	45.2	52.48
1844	15.4	4.48	24.6	2.03	33.8	5.84	48.4	0.34	57.4	3.08	65.1	1.77	68.2	2.90	67.8	3.35	64.0	4.50	45.5	3.27	34.3	4.50	27.0	1.22	46.0	37.28
1845	27.2	3.93	27.6	3.78	36.2	3.67	46.3	1.48	56.6	2.63	68.1	3.15	72.1	4.07	71.3	2.53	60.2	2.58	51.8	4.22	44.3	10.43	25.6	6.71	48.9	49.18
1846	27.4	2.60	21.3	1.50	38.3	1.56	49.5	1.50	55.8	3.59	65.0	2.68	71.6	3.19	70.3	2.38	66.7	2.01	51.2	1.63	43.2	2.55	27.4	5.19	49.0	30.38
1847	26.4	3.67	25.9	3.34	30.8	3.88	42.0	2.83	53.4	1.94	64.7	5.49	73.0	2.53	68.1	5.40	61.0	6.54	47.7	1.44	44.1	4.94	34.8	4.37	47.7	46.37
1848	29.1	2.89	24.7	4.00	32.2	2.50	45.5	1.24	57.8	7.71	64.8	2.81	70.2	2.58	69.6	3.50	58.6	5.18	49.8	6.31	36.2	1.16	34.4	3.23	47.7	43.10
1849	21.0	0.72	18.4	1.46	35.8	6.90	43.5	1.18	52.5	2.76	67.7	1.37	71.6	0.97	69.2	6.52	60.0	2.13	49.2	7.56	45.0	5.43	28.9	3.78	46.9	40.78

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