Telethermoscope Tests

Date and Location	Merc. Therm in Case	No. 1 in case	No. 2	No 3	No. 4	
March 1. Orig. shelf 14 ft above ground. So box was placed on mid-braces. Hole dug, then filled in with snow. Ray H. Linsley cooperator.			3 ft. above ground	2 ft. above ground	1 ft. above ground	
			~~3 ft above~~	~~2 ft above ground~~	~~1 ft above ground~~	
March 1 - Hotel - Platform			33°F	33°F	39°F	Why No. 4 so high. Warm?
March 6 "	36°F	36°F	33	33	36.5	No. 4 erratic, oscillates between 36-46°F Merc. 3 in. beneath snow 0.2°C (32.36°F) 6 in " " 0.3°C (32.54°F)
March 11 "	48°F	48°F	33	30	35.6, 34.6, 34.0	
	51.1 50.0	53.1 52.0	33	33		{Merc. in snow therm.} : 2 ft above ground 32.2°F 1 ft. " " 31.8
	51.0	53.0				
	45.0	47.3	33	33	34.1; 36.6?	Try in early morning.
March 12 " Morning Min. for night 22°F	28.4	28.0	33*	33	39.6**	* Merc. in snow 31.8°F ** Merc. " " 32.1°F
" " Evening 4:30 p.m.	57.8	60.0	33	33	35.7	Snow frozen solid at surface. No time before train to excavate.
March 20 Thermal units cleared of snow. Temp. in shelter on platform 35.8°F No. 4 in warm water. Difficult to read without assistant			— In air	——	- In water -	
	36	38.6	52.5*	51.1**	78 (merc. 71) 72 (merc. 66) ***	* In snow pit exposed to sun; in frozen snow persistently 33°F ** Close to snow, bottom touches snow. *** Unit and merc. in can of water. Thermal units unaffected by immersion in snow or water. Call Ernie Moore to check inst.

Telethermoscope Tests

Date and Location	Mens. therm. in case	No. 1 in case	No. 2	No. 3	No. 4	
			— In air —		— In Water —	
March 26. assisted by Lindley	45.0	45.0	41°F	40.5°F app.	73.0 (mens. 73.0)*	* No water in unit. Structurally sound. Ans Thickstun.
April 2 - Barnes suggests that alternation of hot and cold water in Natal sewer flowing beneath Platform may have caused fluctuation in temp. reading of No. 4 unit. Desired a test in Pasture, where soil is more uniform and deeper at present. Objects also to the wooden trellis.			— In snow —		In can of snow	
			33.0	39.0	36°*	* In shade 36.0° Mens. in sealed tube in shade (6 ft from No. 4) 35.0°F. Harmony and sensitiveness.
April 24 - Pasture Telethermoscope erected on timbers attached to Trestle assistant, Hans Zorbach. 5 units inserted in snow by means of snow sampler.	Mens. in Case	In Case	2 ft. above ground - 8 in. below surface	1 ft. above ground. 20 in. below surface	2 in. beneath soil	
	50.0	48.8	32.2	32.2	41.0	
April 25 7:35 a.m.	33.0	33.0	33.0	33.0	47.0	
	36.5	36.5	33.0	33.0	104.05*	* Reversion to old action?
1:45 p.m.	42.5	43.5	33.0	33.0	38, 43, 70*	No. 4 acts slowly and finally shifts back toward more normal reading.
5:30 p.m.	41.0+	43.4				
	39.8	41.6	33.0 [1 in. deep mens. 33.5]	33.0 [1 ft. above bottom 32°]	54.2+*	* Later 40.0°F but mens. in wet soil 33°F. and 1 ft above bottom 32°F
April 26 8:20 a.m.	28.0	27.0	at Surface			
	30.2	28.8	30.6	33.2		
	34.0	38.0	30.8	[illegible]	35.4	

Telethermoscope Tests

Date and Location	Wea. therm. in Case	No. 1 in Case	No. 2	No. 3	No. 4
April 26. 5:50 pm.	42.8	43.8	Bulb visible down hole 109.0	Snow channel from cable 33.0	In wet soil 91.3°
April 27. 9:30 am. Raining and snowing.	36.5	37.0	Near surface below new snow + Never enough	1 ft. above bottom 38.2°	In wet soil 47.8
May 1 11:30 a.m. Fast clouds - brown	54.2	55.0	Lying on snow in semi shade 32.8	1 ft. above ground and 5 in. below surface	Soil water 55.0 (Wea. 38.0°)
	54.0	54.2	Covered by 1 in. of snow 32.4	32.6	47.8 *
May 1 2:30 pm	60.5	61.3	On snow in sun. 32.7	1 ft. above ground. Hole slightly open 32.8	In water 53.6
			Covered again by snow 32.5	Hole tightened 32.7	54.6
" 4:40 p.m. Sun bright on snow	61.2	61.7	In hole to and sun 68.4	In snow 33.1	51.6
	Later 61.6	63.0	Covered again with snow 73.2		Later 54.3
			Later when cooled 32.7	Later 32.4	
May 2 9:35 a.m. Min. last night 28.0°F	44.2	45.0	Exposed partially but shaded by snow snow 35.0	Hole slightly open to top of unit 34.7	40.8 *
				Covered again by handful of snow 35.0°	

"Barnes has been here. Thinks the telethermoscope impossible" - A. Ewing

Holding button down long enough to balance instrument does not appear to heat the circuit as Barnes suggests.

* Do may be well to obtain another thermal unit in place of No. 4.

* Ice on surface of water but thin shell.

Telethermoscope Tests

Date and Location	Wea. therm. in Case	No. 1 in Case	No. 2	No. 3	No. 4	
May 3 8 a.m. Snow surface moist, very thin ice. Min 30.5°F	34.2	35.2	On snow in open bucket 34.7	1 ft above ground, just beneath surface 34.5	39.6 *	* Second trial.
May 7 Noon	52.1	54.6	Partly in sun 59.0	In shade 57.0	Cased partly in mud and in sun 65.7	
	52.6	55.0				
	53.0	56.1				
	— Tested in bucket of water —					
	Wea. in bucket 37.0 / 37.8 —		38.0	38.3	62.7	
			39.3	39.0	63.0	
			40.1	40.1	52.8	
2 p.m.	In Case 61.2	In Case 59.6	— again in bucket of water —			
	64.0	62.6	47.0	47.0	64.6	
					62.2	
	In water 45.0		47.0	47.0	64.6	
					62.2	

May 8 - 10 a.m. Telethermoscope brought to storeroom by kind of a. Cailland.

May 15. Final test by Ernie Mace. Still confusing.

— all units dry in air —

In case		On floor		
58.6	59.5	56.0	56.0	57.5

Water Test for Nos. 2, 3, 4.

In water			
46.7	48.5	48.9	50.0
47.1	47.9	47.0	51.8
47.1	48.2	48.2	50.5

Connections found tight. No. 4 does not seem so discordant. Shall one have a new unit?

Wind Velocity at Soda Springs, California

Date	Wind Movement: General Direction	Wind Movement: in Miles for the 24 hours preceding 5 P.M. Near Hotel	Wind Movement: in Miles for the 24 hours preceding 5 P.M. In Pasture	Difference (+) when Pasture exceeds Hotel	State of Weather	Remarks
1943						
Apr. 28	NW	88	82	− 6	Stormy	
" 29	W	95	88	− 7	Clear	
" 30	NW	90	100	+10	Ptly Cloudy	
May 1	NW	114	123	+ 9	Clear	
2	NW	72	59	−13	Ptly Cloudy	
3	W	77	(?)		Clear	
4	N.W.	73	79	+ 6	"	
5	W	102	102	0	Ptly Cloudy	
6	S	37	73	+36	Clear	
7	NW	65	167	+102	"	
8	E	284	380	+ 96	"	
9	W	151	123	− 28	"	
10	NW	100	125	+ 25	"	
11	W	174	107	− 67	Clear	
12	W	122	101	− 21	"	
13	NW	4	132	(+128)	"	something wrong
14	NW	104	120	+ 16	"	
15	NW	151	169	+ 18	Cloudy	
16	SE	121	175	+ 54	Ptly Cloudy	
17	SE	169	255	+ 86	Clear	
18	SE	139	226	+ 87	"	
19	SE	72	173	+101	Cloudy	
20	SE	86	63	− 23	Clear	
21	W	88	121	+ 33	Clear	
22	S	172	243	+ 71	"	
23	SE	120	171	+ 51	"	
24	SE	102	123	+ 21	"	
25	W	124	111	− 13	"	
26	W	54	121	+ 67	"	
27	SE	89	169	+ 80	"	
28	W	80	35	− 45	"	
29	W	105	168	+ 63	"	
30	NW	103	72	− 31	Cloudy	
31	NW	174	166	− 8	Rain	
Omitting May 3 & 13		284	380	+102 & − 67	Maximum	
		37	35	0	Minimum	
		113	137	+ 24	Average	
		Miles per Hour				
Average Daily Speed (Omitting May 3 & 13)		11.8	15.8	+4.3 & −2.8	Maximum	
		1.54	1.46	0	Minimum	
		4.7	5.7	+1.0	Average	

2a.

Summary of Gage Catch Only — Inches Water

	Hotel					Pasture						
	No. 1 Standard Unshielded	No. 2 Stevens Type W Recorder	No. 3 Army Engineers Corps Gage	No. 4 Check Gage for No. 3	No 5 Friez Reconnaissance Recorder	No. 6 Standard Shielded Gage	No 7 Stevens Type Q Recorder	No 8 Standard unshielded	No 9 16 ft above ground	No 10 16 ft above ground	Depth on Ground by Snow Stakes	Snow Survey Average 10 meas. Depth [Water Equiv.]
November	12.81				12.98		12.60 (Inc)				18	17.7 [8.3]
December	8.77		9 inc	9.92 est	9.57	9.41 est	9.02	8.37 est	8.05 est	9.23 est	34	32 [13.0]
January (Wind Jan 21-22)	15.79		17 [[illegible]]	13.65	17.22	18.96	17.67	14.25	17.80	18.075	93	90.5 [28.2]
February	3.96		4.0+	5.19	4.85	4.75	4.85	3.89	5.47	5.31	86	77.7 [32.5]
March	9.70 = 51.03 = 141.8%		9.0	9.84	11.63	9.545	9.37	8.695	10.545	10.425	84	78.5 [38.4] = 98.2%
Nov.-Mch.	51.03		39.0 Inc.	38.60 Inc.	56.25	42.66 Inc.	53.51	35.21 Inc.	41.86 Inc.	43.04 Inc.		
April	2.60		2.50	4.155	3.83	3.87	3.72	3.55	4.09	4.15	21	24.0 [11.8]
May	1.32		2.88	2.38	[1.23]	2.23	2.22	2.05	2.37	2.39	0	0
June												
Total	54.95		44.38 Inc.	45.14 Inc.	61.31	48.76 Inc.	59.45	40.81 Inc.	48.32 Inc.	49.58 Inc.		

Note.- All gages except No 1 and No. 8 were equipped with wind shields.
Gages No 9 and No 10 were 3 feet deep for increased storage and lessened evaporation.

Comparison should be made by months rather than by the entire season, for some gages such as Nos 3, 4, 6, 8, 9, and 10 were not installed until after the heavy precipitation of November. The Stevens Type W (No. 2) early suffered mechanical injury which has only recently been detected and repaired. The Army Engineers Gage (No. 3) could be only approximately measured by stick and awaits the close of the season before the contents are drawn off and weighed.