

Weather

Li-Rite

PATENTED PENCIL

Stenographic Notes

No. 101-G

LITHO IN U.S.A.

No. 15

From March 15 — 1943

To April 10 — 1943

Sample 1
 Cal. = $\frac{2.45 + 10.71}{3.43} (49^\circ - 30.1^\circ) - 30.1^\circ$
 24.14

Sample 2
 Cal. = $\frac{2.45 + 9.92}{8.0} (50.2 - 6.4) - 6.4^\circ$
 61.31

Sample 3
 Cal. = $\frac{2.45 + 9.92}{1.5} (20.9 - 16.0) - 16.0^\circ$

March 15, 1943.

Testing thermopiles for caloric
 Equation for latent heat of melting.
 Prepared by Dr. Smit Calder.
 See earlier book for notes on
 and its determinations

$W = 2.45$ g. of \sim inches water ($\pm .2$)
 $(W + M_H)(t_H - t_f) = (F + t_f) M_S$
 W = water equiv. of gage + thermometer
 M_H = mass hot water in g. (\sim inches)
 t_H = temp. of hot water (and gage)
 t_f = final temp. (both $^\circ\text{C}$)
 F = heat to melt snow
 M_S = mass of snow in g. (\sim inches)

for use in snow temps by Dr. deGroot.

Still another -50 to $+50^\circ\text{F}$ therm.
 sent to him for mounting.

A last order of 6 therm. still to be
 filled.

Ropes and gardeners for seed on way.

Double-balance mounting. Two scale
 beams to avoid excessive weights:
 lower for whole inches, upper for
 tenths and hundredths. By John T. Ryan.

March 19, 1943.

Fog suddenly before Base is reached. Rising sparingly from river water as at Godthaul. At Bay Station 18°F . Air far colder than water.

Contractors and soldiers busy rebuilding furnaces. Fire-escapes and kitchen porch almost completed, light frame in and out, but light. Ransen here. My letters are accepted by all on guard.

Hygro-Thermographs

Hotel

10 am Dry bulb 28.6°F
Wet " 25.2°F

H-T 29°F ; min. 27°F .

Pasture

10:35 am

HT 24°F ; min. 23.8°F

{ Dry bulb 30.6°F
Wet " 25.6°F

For period { Max. 54.8°F Out 32°F
Min. $+0.3^{\circ}\text{F}$ " 31.5°F

Crust

Crust from yesterday $1\frac{1}{4}$ " Crust
it soft snow and another crust of
similar thickness.

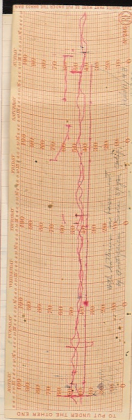
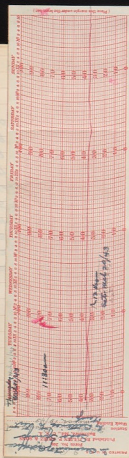
Crust base weight of water until
after 11 am.

3 pm. HT 44°F ; min. 41°F

Only melting is on opaque objects. Tiny
bit on white paint.

Weather March 12-20, 1943.

Date	Max	Min	Prec.	Sufl.	Snow in 24	Wind	Clouds
12	48	21			86	LSE	Clr
13	57	32			85	LV	pt cldy
14	43	28	1.03	10	95	LNW	Clody
15	33	19	0.23	2	96	LNW	Clody
16	43	0			94	LSE	Clr
17	45	5	0.08	1	95	LNW	pt cldy
18	32	13	0.44	5	99	LV	Clody
19	44	7			96	LNW	Clr
20	46	9			94	LSE	Clr
			<u>1.78"</u>				



Triple Register

Working fairly. Altho air temp. minima here varied from 28°F to 0°F to 9°F, the Temperature at the batteries in the baromet has varied only from 35°F to 36°F to 32°F from March 11 to March 20. Temp. below freezing is not a cause of battery weakening. However, 33°F is a triple low for full strength (see Rep. Comm. on Snow 1942).

Sunshine recorder in Paganip. Glass below contacts when later than 10 a.m.

Paganip on wires and needles. Helicate as microscopic (short) ferns.

Drift Snow Collector

→ Was set up in Pasture for photos.

Not a cloud in the sky.

Drives needed to support pole in wind and to hold the snow horizontal.

Numbers should be painted on pole and wires to indicate best fitting hole for each.

An apron at base of pole may

Dec. 19/43
 No. 1 (unshielded) 1.78 in
 No. 3 7.3 Frozen

	17.39	
4	<u>15.1</u>	2.29
5		2.30
	16.93	
6	<u>14.925</u>	2.005
	2.005	
7		2.00
	16.57	
8	<u>14.955</u>	1.65
	1.615	
9	<u>7.465</u>	2.40
	2.40	
	3.98	
	2.40	2.40
	6.65	
10	<u>4.27</u>	3.38
	2.38	

Temp at bottom Dec 19-20
 35 & 36 & 32°
 air 21 50 & 7° F

prevent erosion of poles by gales.
 a chump of pine shanks ^{and needles} would serve
 equally well.

Precipitation Cages

No. 1 (unshielded) 1.78 in.

No. 2 W. Frozen except tiny
 pool near center and
 much superficial in icepan.
 Icepan loose from edges
 but otherwise continuous.

The Strain X does not
 respond to counterbalance
 made by four Cages and placed
 on high-blows. Emit Moon
 may come up Sunday.

No. 3. Army Engineers. Frozen so
 that ice can not be penetrated
 easily by the redwood measuring
 stick. At the ice is broken
 the sides.

No. 4 WT 17.39 (6.39 in) 2.29 in.

Thin pan of ice of approx.
 6 in. diam.

Stirred and broke up pan
 completely.

No. 5 2.30ⁱⁿ

Vibration of pan rather heavy and prolonged.

Pasture

No. 6 16.93 (5.93)ⁱⁿ 2.005ⁱⁿ

Icepan 4 in. but has been melting in sunshine. Stirred and brown up.

No. 7. Strains Q Grant 3.7ⁱⁿ 2.00ⁱⁿ.

on the 9th of Feb 14, pan pumped. Precip. Feb 14, 1.45ⁱⁿ; Feb 17, 1.25ⁱⁿ

No ice in bucket. No stir. Plenty of ice.

No 8. (Standard-unshielded)
wt 16.57ⁱⁿ (5.57ⁱⁿ) 1.615ⁱⁿ

Thin icepan 5ⁱⁿ diam. Stirred

No. 9 wt 6.38ⁱⁿ (17.38ⁱⁿ) 2.40ⁱⁿ

Icepan 2ⁱⁿ diam. Stirred
Snow cover 2-3 in. below bottom of can.

No. 10 wt. 6.65ⁱⁿ (1765ⁱⁿ) 2.38ⁱⁿ.
 Japan oval 4x6 in. dia.
 Snow cover on east side flush
 with bottom & 5 in. above bottom
 at west end with sides.

Snow base 92 in. (?)

Snow Survey

FEDERAL AND STATE
 COOPERATIVE SNOW SURVEYS

State California
 Drainage Basin San Joaquin
 Snow Course Soda Springs No. 1
 Party 88 and 9.
 Date March 19, 1943

*Location or Number of Course	**Elev- ation Station	Depth of Snow Station	Level of Course Station	Weight of Sample Pails	Weight of Tins and Core	Water Content, Percent	Remarks
10-1	8	92.5 -3	76.5 -3	82.1	117	39.9	Ground out. Snow ground on tins.
8		92.5 -1.5	76 -1.5	82.6	123	40.4	Ground out.
9		90.5 -5	77.5 -5	82.6	93	40.4	Sid. out.
9 ^a		90 -3	75.5 -3	52.6	91.6	39.0	Sid. about wipe.
Average (omitting 8)				72.5		40.1	44.3

^a Left extra weight off. Capacity of balance
 fairly accurate.
 *Show number or description as given on sketch map, i.e., "Course
 No. 1," or "Major Course," or "N 5° E," etc.
 **Always start measurements for sampling from the initial point as
 shown by the sketch map of the course and follow the spacing for
 samples as indicated. Particular care should be taken to note
 any irregular spacing between samples.
 No. _____ of _____ sheets. Comp. by _____ Checked by _____

Comparison of Layers and Cover

March 12-20, 48.

<u>Hotel</u>	No. 1 (unshielded)	1.78 in.
	" 2	Frozen
	" 3	Frozen
	" 4	2.29 in.
	" 5	2.30 in.
<u>Pasture</u>	" 6	2.005 in.
	" 7 Q	2.00 in.
	" 8 (unshielded)	1.615 in.
	" 9 (lean over surface)	2.45 in.
	" 10	2.38 in.
	Soot Cover - water content	1.6 in.
	" - depth	
	(Mch 12.. 86 in.; Mch 20.. 94 in.)	8.0 in.

Saturday, March 20, 1948.

Min. for night +9.0°F.

Crust approx. 3/4 in. thick.

Road not been walked as well as yesterday (min. +20°F), the only 2°F warmer at sidewalk. However, not very warm yesterday and melting slight.

Query: What melting be visible to increase → cohesion? Ice size and counting over

not closely interrelated.

Sunshine Recorder

At 11:45 am. columns of recorder barely if actually at contacts.

Telothermoscope

Stored the thermal units clean and found them fairly responsive. But need an assistant and a recorder to read and release units so as to place them more readily in warm water.

Several approximate tests made, but following is characteristic:

Temp. in shelter on platform
in shade and breeze 35.8°F

No. 1. Cheek 38.6°F; nose, then 36°F

No. 2. In dry air in snow
fit but exposed to sun 52.5°F
(In frozen snow, persistently 33°F)

No. 3 51.1°F

Lower and close breast.
Glow touches snow.

No. 4/9 In warm water 78°F; nose 71°F. Why?
(H. 72°F; . . . 66°F app.)

At least the thermal units do not seem to have been affected by water. Snow was some frozen lava rock salt and ash.

Must bring Ernie Maer up. I hesitate to touch electrical circuits apart.

Curley's Substitute

Went back to Soda Springs Hotel last night to get Capt. Francis' decision. He had returned for the night to Auburn but Sergeant — who wanted the Post office quarters for himself and wife but was denied because women were not allowed, pushed my old sergeant acquaintance forward and I told my troubles regarding the women.

He was quite willing to take over Curley's work (but not mine) and would plan to live with the triple register and guard it against in-
quiries fingers.

The salary would add much to his base pay and his wife, if she came West, could live at Soda Springs as well as Auburn. It would require his transfer to the Company Stationed at Soda Springs. He is now at Auburn.

This afternoon we talked further. Lieut. Benson is agreeable but wants that any or all of them may be moved at a moment's notice.

Since Buck is an electrician he may be kept here more permanently than others. He will also understand instruments better.

To make the work attractive in case the Weather Bureau reduces the pay from \$20 to \$10 during the summer, I shall ask the Expt. Station to restore it to \$20.

Also during the summer season, I shall relieve him once a week on his day off.

His address for appointment is:

E. E. Buck

Ser. 1 * 39 831 347

Co. A. 754 - M. P. Btu

Jada Springs, California

or Camp Grant, Colton, California.

He calls me plain "Church".

To Read by 2:30 to.

Recd: a very generous letter had come from Lieut. Frame restoring all the privileges granted by Major Cassidy.

A welcome relief from the lack of convenience for sleeping, eating, and writing at Brown Hill Lodge.

Ernie Mack must go to Tahara tomorrow (Sunday) but will go to Soda Springs next Sunday March 28. Can take of balance of snow-melt equipment.

Monday, March 27. Made formal letter to Lieut. Frame requesting aid of Ser. Buck and a longer stay for him except under emergency govern. Holding myself ready to go as first bus in case Carly needs my aid in transferring the snow to Dr. Buck. Promised Carly \$5.00 for support during the time of transfer.

Cusby may attend to
at Rainbow Lake. If so, he
might be able to bring up
part of the mail.

Tues. March 23:

Long distance from Cusby. Once started to take observations Monday but Captain Prout doubts possibility of his continuing and suggests that I get in touch with Major Heglott. Cusby must go at once to Roseville to get his teeth repaired. Break then. But will hang on until Friday.

Called up Major Heglott. He wants to be tough but melts. "Cost for a soldier." "Salon wanted once as a bartender. Railway wanted two more. If work is done, it must be unpaid or entire company should share the income. Will come up Friday to take matter out. at least must obtain permission from higher up."

So I sent telegrams to Colonel Dornot of Queen's Master Council's Office and to Merrill Bernard seeking permission.

Thursday March 25.

1. Raps and powder have been received for sun studies.
2. Special thermometer - 50° to 140° C. with red alcohol column has been mounted for extreme temps in snow.
3. The Snow Melt balance is extremely sensitive and can weigh a total of 11 gms (water inches) at a refinement

of hundredths of an inch.
I shall cover them - jg top with velopar
and obtain a nice flange.
Have a hot plate and a tea kettle.
By April 1 must begin snow-melt meas-
urements.

Friday March 26

To Soda Spring. Clouds on mountains,
mild, damp. Station leaving.

Take south the gray cloud base
in pastel. Rainbows.

Downer's one alpine in its frame of
clouds.

Snowslides this over the north
face of Mount Lincoln (Downer Peak) -
new snow on old.

Misting.

Captain Brant - "Major Hazlett cannot
come up until tomorrow afternoon".
Has given me the tiny room used
by Quile. So have moved everything
into it.

Perhaps better, for have now but
yard stick, two screwdrivers, two quarts
shellac, saw or staff for spring
balance of ~~four~~ sampler. Taken by
contractors! Quile has lost his
slim-nose pliers.

Hand area: A lat came having
for the Sanders. Call from Reno just
morning of operation which Ben
had at that time to place in. Ben
has the book.

Captain Burt wants me that
Major Hazlett is offered to providing
an observer but may change his
mind. He himself thought that the
arrangement was possible but
Burt is called out much.

I told Burt to stick until he is
forced out. I'll pay him \$5.00 for
his week's work. Reset the triple
register for him today because he
was done with work, for soldiers
are moving in today.

Linsley astonished me by appearing
this afternoon. Major Burt deeply
concerned over continuity of observations
and sent him up from Fresno to
find me. A letter also came from
Barnes - "70 year record must
be maintained."

Hygro-thermographs

Hotel -

9:33am. Overcast, wind NE, light.

Wet therm. 37°F; H-T 37°F

Dry bulb 39°F

Wet " 37.2°F

Pasture

10 am.

Dry bulb 38.4°F

Wet " 37.0°F

Wet therm. 38.4°F; H-T 39°F

Raining -

For Period $\left\{ \begin{array}{l} \text{Max } 54.0^{\circ}\text{F} \quad \text{Dew } 38.8^{\circ}\text{F} \\ \text{Min } +10.0^{\circ}\text{F} \quad \text{" } 37.2^{\circ}\text{F} \end{array} \right.$

11:50 am. Anemometer dead 289.4 mi.
12H. Reset triple register.

→ Lily Gage has been reset but Curley failed to make a copy for me. See Tony for me.

Triple Register

Wind direction still fails to record on cold foggy mornings. Once is sure that the frost interrupts the action of the contacts by getting jam up under the bell.

A stronger battery would cause the gage to hammer too heavily during the warm hours of the day and a heating element would be too complicated. So Curley will try a cardboard tube reaching up under the bell to exclude some of the frost bearing air. It may help since the same condensation may still occur. The lead over the wisp. for reduced condensation sufficiently to may wisp. exceed the condensation on open pan.

The temp. beneath the house at the battery seems to have not part in the failure.

Curley has again readjusted the

sunshine recorder. This is the fourth readjustment. Mr. Blotcher feels that several readjustments are necessary. But these are becoming too many.

Weather March 21 - 27.

March	Max	Min	Precip.	Suffl	Snow	Wind	Clouds
21	49	20			92	LSE	H' cldy
22	36	19	0.52	5	97	LSE	cldy
23	33	17			95	LE	clr
24	52	13			94	LSE	clr
25	55	13			92	LSE	clr
26	53	17	0.04		89	LNW	cldy
27	41.2	24.2	0.08		84	NW	clr

+ Snow called off. Interpolated from MT.

Thermoscope

Further test.

No. 1 check 45°F; norm. 45°F

No. 2 and No. 3 approx. 41°, but
No. 3 a tripe (within 1/2°F) lower.

No. 4. In water. Got 73°F. exact.

No water in unit. But why the
temp. in the snow? Must await theoretical
opinion - slowly.

Barograph

Bar has not touched barograph.
I can not get it Sunday.
Should not be taken to store room
for within the thick stone walls, it
may not be so sensitive.

Saturday March 27

Clear again. Expected at least
a good deal of day as yesterday for
barometer was above normal and
falling very slightly.

A burner sun. Lips and faces
of all badly burned. Mine (lips) still
sore.

Crust yesterday firm despite rain
due to sun previously?

9:30 am Clear, cloudless. Wind NW light

total. - Precip. logs - Height - near by Lundy.

No. 1 0.64 in.

No. 2 Depth 12.75 in. Liquid. No. 2

No. 3 Depth 12.60

Case of ice. Complete bit thin.
No. 1 good solid case 6 in. less than diam.
of can. Remainder is thin ice.

Barre then to measure. Not attend

No. 3
Feb. 11 . . . 12.1 in.
Feb 20 . . . 7.9 in.
Feb 27 . . . 12.80

No. 4
Feb 20 . . . 2.29 in.
Feb 27 . . . 0.69 in.

No. 4 WT 7.08 (18.05) ⁱⁿ.

Entirely liquid - Strained

7.08

6.39

0.69 = net.

Kind Run:

Machine recorder in contact.
Probably in contact by 9 am.

Paper slip seen by Quack under bell of
milk direction staff.

Wax reverse bell to fit under it and
exclude moisture somewhat.



(Diameter rod $7/8$ in bit additional
spacing required for wires.

Tape?

No. 5 Sheet removed by v.m.s. (only) Wt 8.60 ⁱⁿ

Sheet No. 22-27 0.10 ⁱⁿ

* Nail 0.12 ⁱⁿ

Total 0.70 ⁱⁿ

Liquid. Recharged. 1 Ounce.

Picture -

No. 6. WT 6.57 (17.57) ⁱⁿ = 0.64 ⁱⁿ.

Liquid. Can less than $1/4$ full.

6.57

5.93

0.64 = net

No. 7 Stations Q

Feb 19 . . . 3.68 in
 Feb 27 . . . 4.40 = 0.72
 Feb 21 . . . 0.54 in. pass.
 " 26 . . . 0.12 in. "

a little slush around edges of bucket
 1/2 in. out from edge.

(8)

No. 8 WT 6.18 (17.18) in. = 0.61 in.

Liquid - stirred

No. 9 WT 7.06 (18.06) in. = 0.68 in.

Snow 16 in. below bottom of can.
 Pit still open but clearance only
 fraction of an inch. $\frac{7.06}{6.38} = 0.68$

No. 10 WT 7.33 (18.33) in. = 0.68 in.

Liquid - stirred

Pit just deep enough.

Snow 14 in. beneath base of can
 in center of tower, but general
 level of snow cover outside tower
 area is only 6 in. below.

Snow tunnels have been formed

around all legs and braces. Mainly due to insulation.

Diagn. $2\frac{1}{2}$ - $4\frac{1}{2}$ in. on braces;
6-7 in. around legs.

Snow stake 84 in.

Snow Ball on Beacon Ridge

Snow ball below highest cornice on east end of Beacon Hill! Path plain. Is a broken down cornice lip. "Ball 4 x 5 feet diam". fairly. Broken cornice flatly last season on Donner Pass.

Saw two snowballs earlier this winter on Beacon Ridge when Abbott & Cottell made film. Mentioned in Sci. Mo. April.

Comparison of Layers

Hotel -

No. 1 0.64 in. (unshielded)
No. 2 — " "
No. 3 — among Wed 11 - Wed 27 = 1.5 in. [No. 4 = 2.95"]
No. 4 0.69 in
No. 5 0.70 in

Pasture -

No. 6 0.64 in
No. 7 Q 0.72 in
No. 8 0.61 in (unshielded)
No. 9 0.68 in
No. 10 0.68 in (unshielded)

Query: Do Nos 9 and 10 pick up spindrift?

They are always high in record.

Sunshine Recorder

Rules for best resetting (Sunday):

1. When both bulbs are equally heated (as on cloudy day), mercury column should be $\frac{1}{2}$ inch below contacts.
2. Angle of bulbs set at 45° .

Overclouded as yesterday is best time for equal heating of bulbs.

Smart Crest

Yesterday's crest 2.2 in. thick and well centered but base by nose.

Need:

Vaseline oil

Shelloc

Hook for off. bal. stuff.

Electric tape

Conference with Major Haylett

Lindley and I sat out the afternoon at PX (Post-exchange) awaiting call.

A day of inspection. MP had moved in the night before. Colonel was due at 6 pm.

We presented letters from Bernard, Dennis, and James and telegrams to District of Quartermaster's Dept and Bernard.

Major H. proposed to have project moved down the river but realized that it must be maintained at the Hotel. So agreed that the soldiers might voluntarily take the observations subject to regular and emergency duties, but only until a civilian observer could be obtained. That an intensive search must be made for one. Dennis Jones had two of these in mind.

A woman would be acceptable tho not desirable particularly if the post office apartment should be made a barracks and she must enter to visit the triple register. James, Capt. Post stated that this apartment

was being left vacant. Therefore
the triple register and barograph
might be left there for the present.

Major urged that all equipment
be located in the tin room and
was pleased to learn that this
had already been done. He asked
me also to have Captain Grant provide
the room with a key.

Quinn had been ordered off ^{4:45 p.m.} when
resetting instruments this morning.
He could have taken the readings
but we only saw one. We did not
expect Major to change his mind.

I was asked to appoint assistants
to Quinn. Two men had shown deep
interest. I later identified them
as
Pvt Jack Tatum 39315929
Pvt Joe Perna

The former much interested in
meteorology but eyes too poor for
air bracket. The latter is much older
and long in charge of mill measure-
ments for the Civil Service Division
on the Sacramento.

Quinn will soon be called elsewhere.
Major H. has plans for him.

Wages cannot be paid to soldiers
and no money may be on
the reservation.

The conference provided a net
leave on life for the project.

Quinn has temporarily on the job.

Leave for Treaty in Pasture

Dennis Jones will accept \$10.00
yearly for use of space in pasture
lot for instruments. Simley will
see the Jones or Dennis' lawyer in
Sacramento and draw up necessary
agreement. I shall see Capt.
Capt. Stettin to provide the \$10.00

Searching

Simley went to Norden to inspect
station there. I caught 5:10 pm
train for Reno and met next
morning carrier at railway station.
Aldrich, I thought - from Denver
Summit Lodge.

Sunday March 28

Returned to Soda Springs with Eric Mass. He wanted to try out a new telephoto lens. Sky clear but landscape flat.

Civilian Observer

Dinsley had found only a cheap thermometer at Norden, hanging on the wall of the observatory. The observatory was too distant for him to search out, but impressed him favorably because of its close proximity with the stars at Soda Springs.

No one at Basin Hill cared for the position of observer even at \$25.00 available. But Arthur Cailland and Mrs. C. tenants at Donner Summit Lodge were eager to add it to the postoffice work that required a trip daily to the railway station at Soda Springs.

But the observations must be concentrated at 5 pm requiring a reworking of hours on triple system sheet, and putting in daily observations in the evening instead of morning. If agreeable to S.F. office to have a dated report, the change will pleasantly win, and more, in same data.

A plan of observations at 8 am had been agreed upon with Buser whenever he was called away for the entire day. So Thompson's evening observations were readily accepted.

Stations V

The batteries seemed weak. Voltage on line 15 volts; across meter terminals 28 volts.

Later it was found that no loss had occurred. Therefore the meter itself may be at fault. Checked out by collision with contacts at end of neighbor?

Snow Pits

A long wire on the snow at various axis angles to the sun had some poor insulation $2\frac{3}{4}$ (max.) into the snow. Melted trench prob. did not exceed $\frac{1}{4}$ inch and wells were vertical.

Snow Crystals

The coarse crystals were found. To be single in form, not aggregates - 3 to 5 mm. Actually the aggregates

had repairs
refreezing they had obliterated ~~all~~
clearings of the original group.

New Absences

The Cavillards came at 11 am.
to be introduced to the instruments
and procedure. Understood readily.

They understood that the \$5⁰⁰
from Harry Dimes would probably
be withdrawn after the season of
melting but that an effort would
be made to obtain \$10⁰⁰ from the
Station to replace the \$10⁰⁰ by R.S.H.B.
before the end of May in order to
keep the triple register running through
the year. In return they would be
asked to change the two H-T.
recorders at Etel and Postna and
read them - also at latter place each
week.

A copy of Fing pres. goes also invited
upon their would remain for a day or so.

Cornice Insulation

Bought field glass. Lindley and Wenz
could see trench in cornice. Wenz
thought the ball only 6 ft. in diameter.

linely agreed. Smaller balls seen
to the right. The previous day
"feetsteps" appeared in the snow.
Had a snowball leaped or scuffed
in its course?

Wass wanted a telephoto view
but I hesitated to ask permission -
after the concession already granted.

linely caught the 1 for his
nest. He left at same time or
bit earlier for home.

→ On east side of James Brook
snowballs or rollers variously situated
- entering in the light. But he
did not stop.

all showed angular instead of
rounded contours. They were merely
fragments of the cornice rather
than accumulated rollers. For
this reason they ceased leaping
or rolling as soon as the steeper
slope below the cornice ended.

The pits or contacts made by leaping
could be seen in an unbroken
series.

Thus there are not wet
snow slides so much as fragments.

Parasitoid flies become more abundant.

Monday April 2/43

Road open Takah, Broadway, Kluane.
Left Sunday 80°F at Broadway.

Dry road to Dames Summit. Sunny day.

all instruments running normally.

9:45 am.

Hotel - Sunshine recorder. Column at contact.
Wind SE - fresh. ; cirro-stratus.

Min 31°F (last night)

Current Temp. Min. 49°F; AT 48°F

Dry bulb 48.6°F

Wet " 37.6°F

Pasture -

10:25 am

Min 48.8°F; AT 47°F

Dry bulb 47.8°F

Wet " 37.0°F

For period { Min 9.6 Past 50°F
Max 57.4 " 50.2°F

Morning of 29

Min 56

Max = 34

precipitation 45/100

Depth of snow 85 in

South East Wind

558.7 miles wind traveled.

Clear + warm.

Buck

Weather Record

Date	Max	Min	Prec.	Snowfall	Snow	Wind	Other
Mar 28	59	18			88	SE	
29 th	36	23	1.04	7	93	NW	Snowed all day
30	42	18	0.18	1	86	SW	clr
31	52	8			84	W	clr
Apr 1	61	14			80	SW	clr
2	60	21			78	W	clr

$$1.22 + 0.45(2) = 1.67 \text{ in.}$$

* Day of transfer from Buck to Quilland?

Morning of Mar 29

Max 56 Min 34 Precip. $\frac{45}{100}$ Depth Snow 85

Southeast wind - Clear + warm.

558.7 miles wind traveled.

Buck.

Precip. Scales

Read + weighed on both Apr 2-3 but rearranged.

April No. 1 1.67 (undisturbed)

4:35^{pm} No. 2 (W) 12.98ⁱⁿ depth.
Entirely liquid.

Nov 2-24 No. 3 (W) ~~depth~~ 12.83
Observed 3 in from edge.
 $12.60 \text{ to } 12.83 = 1.5 \text{ in.}$

No. 4 wt 8.87 (19.87) ^{in.} 1.79 in.

liquid, stirred

$$\begin{array}{r} 8.87 \\ 7.08 \\ \hline 1.79 \end{array}$$

No. 5. Icey Wed 27-Apr 9. 1.75 in.

slowly stirred.

Resture

No. 6. wt 8.23 (19.23) = 1.66 in.

liquid. Stirred

$$\begin{array}{r} 8.23 \\ 6.57 \\ \hline 1.66 \end{array}$$

No. 7 ⁹ Wed 27. 4.35 in. } = 1.65 in.
Apr 2 6.00 in. }

[Wed 29 ... 4.35 to 5.82 in.

Wed 30 ... 5.82 to 6.00 in.

Inx lower but still flows.

(8)

Plain Eddy measured curves.

My No. 8 and 9 are like No. 6 and 7.

"Water runs from snow cre. To be expected, for density is very high.

No. 8 (unshielded)

$$\text{WT } \underline{7.55} (19.55)^{\text{in}} = \underline{1.37}^{\text{in}}$$

$$\begin{array}{r} 7.55 \\ 6.18 \\ \hline 1.37 \end{array}$$

liquid, stirred

No. 9 WT. $\underline{8.99} (19.99)^{\text{in}} = \underline{1.93}^{\text{in}}$

liquid, stirred

$$\begin{array}{r} 8.99 \\ 7.06 \\ \hline 1.93 \end{array}$$

→ Very coarse crystals in weigh pot.
Covered them up for study later of
the growth of crystals.

No. 10. WT $\underline{9.22} (30.22)^{\text{in}} = \underline{1.89}^{\text{in}}$

liquid, stirred

$$\begin{array}{r} 9.22 \\ 7.33 \\ \hline 1.89 \end{array}$$

weigh hole nearly
filled with snow.
→ drift?

Both cans Nos 9 and 10 well above snow -
3 feet.

Snow Base 80 in.

Comparison of Loge Ctbl

Lateral open ↓	No. 1. (unshielded) 1.67 in.* No. 2 — (*) No. 3 (Army) 1.50 No. 4 1.79 No. 5 (Zing) 1.75
Pasture open ↓	No. 6 1.66 No. 7 (Q) 1.65 No. 8 (unshielded) 1.37 No. 9 1.93 No. 10 1.89*

Note - Weigh hole of No. 10. nearly filled but not much in hole at No. 9.

If drift caused excess, did drift come from air from higher down but the filled hole at No. 10 from erosion? No. 10 is a deposit spot for eroded amt.

Wind on Wed 29 was mild. Sinner (Camillards) from Tucson could not see road.

→ Study triple register etc for this day.

* Should 0.45 in. read by Cass be subtracted?
 Ask Camillards.

Jack Eddy had planned Wednesday that
 plain was at 17 days here and planned to
 reach Soda Springs on Friday April 2.
 → So gages and surveying on that same day.

Snow Survey

FEDERAL AND STATE
 COOPERATIVE SNOW SURVEYS

State South Yuba River - Calif.
 Drainage Basin _____
 Snow Course Soda Springs - Key Course
 Party B. Eddy and G. Chase
 Date 4/2/43.

Observation or Number of Courses	Time in Minutes	Depth of Snow inches	Length of Snow inches	Weight of Snow in lbs	Weight of Water in lbs	Water Content in %	Remarks
28'	1	78	50		34.5		Dirt
	2	75	50		38		Shrub water
	3	72	62		33		"
	4	70	65		40		"

Of the 14 points started on the
 course, plain omits Nos 13 and 14
 and Nos 1 (at base) and 4(?) in middle of road.

Jean Eddy had planned Wednesday that
 thing was at 11:45 AM here and planned to
 reach Soda Springs on Friday April 2.
 → So paper and laboratory on that same day.

Snow Survey

FEDERAL AND STATE
 COOPERATIVE SNOW SURVEYS

State South Yuba River - Calif.
 Drainage Basin "
 Snow Course Soda Springs - May Course
 Party B. Eddy and G. Chase
 Date 4/2/43.

Description or Number of Course	Station Number	Length of Snow Course	Length of Snow Course	Weight of Snow Sample	Weight of Tins and Core	Water Content Percent	Sample Dry Weight	Remarks
28'	1	78	50			34.5		Dirt
	2	75	50			38		Shak water
	3	72	62			33		"
	4	79	65			40		"
	5	79	70			40		Not snow
	6	79	69			37.5		Dirt
	7	78	64			42.5		"
	8	80	67			39		Grass
	9	81	72			41.5		"
	10	84	74			40		"
Av.		78.5				38.4	48.9	298.2
								Mean 39.1%

*Snow number or description as given on sketch map, i.e., "Course No. 1," or "Major Course," or "N S E," etc.

**Always start measurements for sampling from the initial point as shown by the sketch map of the course and follow the spacing for samples as indicated. Particular care should be taken to note any irregular spacing between samples.

No. _____ of _____ sheets. Comp. by _____ Checked by _____

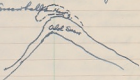
the
+
up road

Snow Rellies

Reached snowfall still on Crown Hill but track in cornice seems closed.

→ At Dancer Summit rullies are partly covered by new snow and no longer show angular faces.

The rullies seem to be from new-snow cornices built on old. The same of old-snow cornice may also occur now. See April Sci. No. 1743. "Snow Rails". Also this Report, March 28. "Cornice Snowfall".



The melting of the new snow was very pronounced especially just above the maintenance headquarters of highway.

→ Area for permission to photograph there. But did not wait for new snow and subsequent sun.

Bertram Barnes

at lunch called up Cowlland for Daily Record of Weather and was astonished to find Barnes there. So next day.

He was indirectly not observer but really had come up to interview Captain Brant regarding my attitude toward the weather station at Lake George. Major Barnes thought the same perfect the complicating factor and was ready to close it out to preserve the daily observations.

Captain Brant assured him that the problem had been cleared up but intimated that he did not want the civilian observer to intrude on the Hotel life. Therefore the postoffice apartment is being left unlocked so he can reset the triple register without disturbing the dinner hour by opening the key. The dinner hour is the time of conference with the men.

This may affect my living at the Hotel. Brant travel for dinner to Lower Summit Lodge is true saving the pleasant. Must also keep near

Stage II -

Quinn offers to test the motor if I can remove it.

Changing the contacts to heavy instead of quartz heavy may be sufficient for starting snow, my Carnot, but entirely insufficient for single where snow 5 in. intensity is desired. Furthermore, difficult to eliminate vibration on mountaintops where it was expected to be placed. "a damn good way".

my work and observations.

Triple Register

Carnot calls the triple register a Chamber of Commerce instrument and questions its value unless entire series is recorded and analyzed. He considers it merely a local record.

Why also the hypo-thermographs and anemometer? Others have raised the question.

We need backgrounds for answering our own questions.

Kind for mowing of windshields and drifting of snow. Humidity and temperature for evaporation and melting. Must, however, have field anemometers to live level platform with barometer.

Even prefer to pay the extra \$10.00 to make records continuous. Surely, perhaps they can be recorded as mountain climatic record with Donner Summit.

Telethermographs

→ Barnes suggests that wave-line attenuation of hot water and cold in the lateral drainage may account for the variation in temperature of thermal unit No 4 - "1 foot" above the ground. This may be the answer, for the unit was steady and accurate in warm water.

Geophysical Union

A long evening until 11:30 was spent discussing plans for Section of Hydrology with complete agreement. Barnes thinks the present reluctance to Regional Meetings is due to Federal opposition to conferences during the War. He is happy to be a member of the Committee on Penoff but feels that there should not be a horizontal division between it and Precipitation.

Saturday, April 3

Classification of Basin Texture

Barnes opposes of Lundquist's chart but instead of "amphibious" slope,

he accepts "fluid sheet" as a
counterpart of "firm sheet".
Because of the simplicity of "firm"
as compared with "fluid" he
likewise prefers the metric cross-
section sheet by which to measure
the dimensions of snow crystals.

Calorimetry

The use of inch (and) graduations
on the balance is of value only
in tying in with snow sampling,
for any other proportional system
will serve. This was noted by Barnes.

The distinct value is in determining
refined or accurate density of snow
for comparison with grain size
and density.

He wishes that the Washington
men could come West to carry
out this detail of the Snow Project.

Talothemicroscope

Barnes frankly objects to the presence
of the platform and consequent
shaded snow and particularly to
the wooden bellis which may prevent
the natural deposit of snow around

6/18

541 ft Ronild

the thermal units. He would have a single pole in the open. He would even disconnect the case as he do the battery to carry it about. This complication would not solve the problem of holding the thermal units at a fixed distance above the ground in over sitting snow.

The Hotel platform will serve for snow traps if high enough above the ground but can never serve for soil traps for surface or shallow subsurface drainage is active through the winter.

Snow Test

Thermal unit was immersed in a case of snow gathered from surface.

(1) just immersed 37°F

(2) later in shade 36°F
(Had been 35.5°F)

Therm. in cooled tube below surface of snow
in shade . . . 35.0°F (6 ft from
station)

This shows heavy and consistent.
Could therefore cover water have affected
No. 4 earlier. Nos 2 and 3 were all right
at 33°F

Next but Temporary Plan

Take black microscope without bellows to picture and place in box in snow or on stones driven into snow.

Dig trench and drive sampler tunnels at 1, 2, and 3 feet heights above the ground and refill trench with snow. Same instrument in place several days and observe variation in temps.

→ James says that Light is particularly interested in temp. changes at bottom of the snow.

Possibly Cuillard can take some readings. The snow is not so dense that it can settle but little more and vary the depth.

Primo Lamp

Took leave of James at 10 am long, start driving and blackout at sundown.

Wiped him to phone everywhere for a Primo lamp to test order and to get me more Super X² films. Only two rolls left.

11 am. Fry rest. Wards of earth-gears.

Found an platform found to fit bottom of wire! Taken to postoffice apartment for storage until needed.

- Keys -

Duplicates of all keys should be left with Cuillard for use of Hatcher Brown. One's key is at the exchange. Postoffice always unlocked.

Need

Bonus lamp or camp gas stove
(Jim's stove)

Veal oil

Shells

Scissors for wire work.

(one pair in postoffice)

Canopies and shelf for thermographs

Funnel for brass tube of No. 1 gage.

Pits in Snow

Same wire as before in same position. Depth in snow $1\frac{1}{2}$ in. The snow ^{surface} seems to melt faster than the wire melts in. Will this bring the wire over ^{the surface} sooner the surface? What is the maximum depth of penetration?

In one place the wire trench was covered over with the recent snow. There the wire was as deep as in the open. Probably had snow this depth before the storm → blame this further.

A glass of milk and sail at 1:30 pm. Full bus at 2:30 overcrowded. "another was falling" but it didn't - at least for an hour tho a series of buses was traveling west.

Inspection day. Captain Brent took Captain Montgomery to Rainbow Inn but failed to be picked up by the State Highway Patrol and for his first time thanked a ride back to Soda Springs.

He saw me stranded and asked the driver, the Brothers from Quince, to take me as company to Rand. Rare companionship about men and happiness.

The coast rollers are now too covered and now to make a suitable picture so until the coast rollers and more new snow accumulates.

While absent Colonel R.L. Easton,
Regional Weather Office, Ft. Chaffin Field,
Sacramento called up and advised
Winifred that he would aid me
with observers if present plan was
not satisfactory. Tel. City 73551 -
Cherry after Benes' visit. Extension 4132.

Snow from Trees

A project started at Lake City with
W.R. Simons to determine whether
any snow from tree crowns enters
the gage at Pan. Trees are close
to gage, but thus far no snow
has been observed in the Pan
after the close of a storm and
the emptying of the original precipitation.

Forecasting Storm Intensity

Benes in devising a storm warning
for the Red River Basin in California
has found that the seasonal percentage
pattern for the year's storms does
not indicate the pattern for storms

of great interest. The currents
producing great intensity seem
to override those producing minor
storms.

In heavy precipitation of snow,
the deposit has seemed to be
uniform over wide areas and
even across the longitudinal axis
of the Sierra. A few exceptions were
recorded in early years. Why not
uniform also for rains?

He finds basins quite individual
and requiring individual features
the showing out of a single one
of which may require several months.
Thus the Bureau, expecting an
automatic general plan for all basins,
has grown impatient.

Friday, April 9

Overcast. From canyon road to
Coca snow-dust over the slopes.
Ground beyond is bare. Has there
been rain here or was the snow
in the canyon more intense?

Cloud canopies touch mountains
and trees are white with snow.

Mrs. Tallman on the bus and recognized
me. Our English friend, seen at Mrs. Light's
and Mrs. Kucharski. She travels much by
bus and judges the view and speed
of movement and speed. In this we
are agreed.

As James drives the snow makes
patterns on the pavement where avoided
by the passing trucks.

9 am. Delivered a radio from
Ethel West to Albe. Redy talked with
Bill there. Walter low, likewise met.

Called up Arthur Couillard. He will
come up!

Too windy and stormy to attempt to
reach the gorge. Cottell return to Paris
to complete the remnant of reports
and clear the way for a long stay
at Soda Springs.

Found key of Owen's room on long
stick with address. Easy now to identify.
The Hotel is now in final order.

Showed Lieutenant Lewis's letter
authorizing hospitality to Captain Brent
but advised him that I did not
desire to be a "white scar" in
his room and would not see
anything against his personal desire.
I suggested the postoffice apartment
but he preferred to leave it clean
and empty and believed that Major Hoggatt
would not object if my occupying it
later than for the instruments now there.
He proposed that I be in with the
postmaster, the Caulharts. He plainly
wanted army privacy, as he had from
the beginning, and said that they did
not expect to be at Cedar Springs long.
Could I use one of the Jones' cabins
south of the railway? I would like
near my instruments at night and
in early morning. I should of course
be grateful for permission to use
the perfect cabin.

Showed him my letter to Colonel
Easton of Army Medical Service in
appreciation of his offer to provide

an army observer in case the
new civilian observer proved unsatisfactory.
He was placed as this.

Observations

10 am. opportunity. An opportunity
to study the erosion of sand, if only
I could remain and set up long
drift collector.

Hotel - 10:30 am. Wind E and strong.

Current temp. 26.5°F; H-T. 28°F

Sunshine shown $\frac{1}{4}$ in. from contacts.

Saw this:

Dry bulb 29°F

Wet bulb 26°F

Min. this morning 20°F

Precip. Gauge No. 4 had ice sheet on surface.
No attempt to measure.

No. 5 changed yesterday. Total precip.
Apr 3-9 ... 1.03 in.

[Apr 4-5 ... 0.2 in; Apr 7-8 ... 0.53 in]

Heavy wind shown by pouring rain Apr 6]

Restaurant -

11:30 am. Cuillard had joined us here.

Dry bulb 30.5°F

Wet bulb 27.0°F

Current temp. 30°F; H-T 29°F.

Fair period { Min. 16.2°F; reset 30°F
Max. 54.0°F; reset 30°F

Despite canvas screen around the shelter, the record H-T sheet was torn from my fingers and sped in the gale beyond the bridge and apparently into the Yukon. I followed at my top speed bearing down the coast but my search by assisted by Cuillard and Herbert Pring was fruitless. It was a perfect record and represented two storms. The ~~no~~ parallel record from the Hotel fortunately survived.

Had record started 12:05 pm

Pages Nos 6, 8, 9, and 10 have covers of ice - sheet almost firm, but ^{partly} ~~solid~~ but they would be discarded. No attempt made to stir them.

Page No. 7 Storms Q entirely liquid.

Precip. April 2-9 . . . 1.0 in., deficient

→ record of No. 5 - July at Hotel (Apr 3-8).

of 1.03 in. No. 1. Page Apr 3-8 . . . 0.8 in.

The mass remains ground on sheet and will still fair in quantity.

Drifting Snow

Snow is plainly drifting from the dam and is collecting around Gage No. 10. However, it is not blown high by the wind, unless almost horizontally. The weigh pits are filled.

→ Compare catch — all gages after a snowfall and again after the evening east wind, moving its close. With it use the drift catcher. One must be ever on the job.

Today the average wind movement at the Hotel is approx. 12 mi. per hr., but it was a fierce and prolonged gust in the pasture that took the record sheet away. The triple register is valuable today.

Snow Depth and Texture

The snow-storm . . . 70 in. but the snow has settled and is colder. Quite low beneath the trees.

→ The ~~temperature~~ thermometer should therefore be erected off one end at the end of a cat-walk.

Now snow approx. 2 in. deep overall. One is near and is penetrated easily by one's feet.

→ Take a study of crystal size.

See
Jan 21
Gale

→ Snow survey necessary to study rate of melting during April to include in long period tables already made. Opportunity to study effect of super-saturation. The melting already seems advanced.

2 pm. Sunshine recorder moves when sun is down. Of course the sun on the plateau must have reached the contour. But after I moved sunshine pan over to side of wind-

→ velocity fan it failed to continue working tho sun was still bright. Moved pan back to original place but had no time to observe effect. Travis sheet on next trip.

Weather Record

[Box and tray sheet brought up from DS. Lodge]

Date	Max	Min	Wind	Speed	Direction	Wind	Clouds
Apr. 3	56	17				74	N cl
4	54	22	Rain	74		73	S clly
5	No readings taken. light rain all day.						
6	54	30	Rain	74		68	S cl
			0.37				
7	54	22	Rain	74		68	NW clly
8	41	21	Snowing	74		70	SW overcast
			0.52	2.2			
9		20	Snowing	74		72	E clly.
			Total 0.91 in.				

Explained "retracting" maximum thermometer
of Cuivilland. His setting is probably
the return of the column to the construction.
Should like to test this by gently inclining
maximum downward before letting it
fall to vertical.

→ Triple register functions well. Wind-
direction gauge appears to work in
temperature above 20° F but this has
been a mass of rain and snow
and probably of scant fog drip.

→ The sunshine trace line is faulty in
position and continuity. Must give
this attention.

→ Must also bring a supply of calcium
chloride for Cuivilland for drying pipe.
Also set out a platform to see if it ac-
cumulates weight from moisture.

Also show him how to copy the Fing record sheet.

Sergeant Turner

The boy had cleaned up post office and
cleaned the desk. Explained the instruments.

Sergeant Turner also came in to inspect.
Much interested in everything - saw the
barometer and the snow. Asked to
consult the former to safeguard the new.
Says that the former's point out that this
classroom now with shallow snow has as
much water as snow covers 900 feet.
I suggested 15 feet, which is nearer
normal depth.

Gave him the Newspaper and our
Companionship left by Andy. Suggested it
for his office for legs over seas. Expect
to get it. Noticed my name but I pointed
out Seneca's, the owner, too. He had
helped me greatly in the morning
buying the Key to Seneca and my room.

Not So Good

Albi tells me that the Government
paid Dennis Jones a previous leave for
stubble but that George Sible was
disregarded tho he had advanced money
on this leave. Now Dennis is in
the Army and has no money to pay.
So George is bringing suit against the
Government. Can he win it? Should Dennis
share with him? It is really George's
leave and not Dennis'.

April 10 -

a letter from Colonel Robinson stating
letters for War ^{Master} Department to Sacramento
Division. He started the Army action and
is glad to have done it as a member
of the Committee on Gov. Friends
in need.