

South Fork Humboldt River.

Cramer's Pasture Sat. (5553 feet)
[Elevo 5063 feet].

Wednesday, July 8, 1908.

5 p. m.

Stake set. Upper notch
at high wave crest,
lower notch at low
wave crest.

Two nails. awash at
high wave crest.

Note - From marks on
millstone, water has been
1 inch higher today.

Temp. $13.4^{\circ}\text{C} = 56.1^{\circ}\text{F.}$

Current 60 feet in 9 sec. =
4.54 mi. per hr.

Wednesday

7:55 p.m.

Stake - High wave
 Crest - $\frac{1}{16}$ in.
 Nails - $\frac{1}{16}$ in.

Thursday, July 9, 1908.

7:30 a.m.

Stake - High Wave Crest + $1\frac{1}{4}$ in.
 Nails - + $1\frac{9}{16}$ in.

Note - Nails subject more
to surf than is stake

7:45 a.m.

Temp. 10.4° C. = 50.7° F.

Current - 6 feet in 9 sec

Thursday.

70:30 a.m.

Stake - Crest + $\frac{11}{16}$ in.Nails - " + $\frac{10}{16}$ Temp. $12.4^{\circ}\text{C} = 54.3^{\circ}\text{F}$.Current 60 feet in 9⁺ sec.

1:10 p.m.

Stake - Crest + $\frac{1}{8}$ in.Nails " + $\frac{1}{16}$ in.Temp. $14^{\circ}\text{C} = 57.2^{\circ}\text{F}$.Current 60 feet in 9⁺ sec.

Width est. 45 feet.

4.

Measurements made about
2 p.m. by aid of Charley Case
and horses

Width measured with rope
49 feet.

Depth 2.5 feet.

4:45 p.m.

Stake - Crest - $9\frac{1}{16}$ in.

Nails - Crest - $10\frac{1}{16}$ in.

NB. - The water appears to be
 $9\frac{1}{16}$ in. lower than at
about this time (approx.
5 p.m.) yesterday.

This represents largely
the seasonal fall which

5.

has amounted since
it began (approx. June 23)
to 9 in. or about
.64 in per day, practically
the $\frac{9}{16}$ in. loss of the past
twenty four hours.

Temp. $13.2^{\circ}\text{C.} = 55.76^{\circ}\text{F.}$

Current 60 feet in 9 sec.

Thursday 7:30 p. m.

Stake - Crest $-\frac{9}{16}$ in.

Nails - Crest $-\frac{4}{16}$ in.

Temp. $12.4^{\circ}\text{C.} = 54.32^{\circ}\text{F.}$

Friday, July 10, 1908.

5:15 a. m.

Stave - Crest $+ \frac{9}{16}$ in.

West Nail $+ \frac{8}{16}$ in.

East Nail $+ \frac{6}{16}$ in.

Temp. $9.2^{\circ}\text{C} = 48.56^{\circ}\text{F}$.

Current 60 feet in $8\frac{1}{2}$ sec.

Measured just beyond
the shoal line or one-
half from shore to midstream

7:30 a. m.

Stave - Crest $+ \frac{3}{16}$ in.

West Nail - " $+ \frac{6}{16}$ in.

East Nail - " $+ \frac{6}{16}$ in.

NB. - Water is falling, etc. and

7.

probably highest sometime
preceding 5 a.m. and
the highest level was
probably $\frac{3}{4}$ in. higher
than level recorded
at 5 a.m.

Temp. $9.8^{\circ}\text{C.} = 49.6^{\circ}\text{F.}$

10:30 a.m.

Stake - Crest - $\frac{10}{16}$ in.

Nails - Crest - 1 in.

Fall is $\frac{2}{16}$ in. below level
recorded at 10:30 a.m.
yesterday or $\frac{10}{16}$ in. in
excess of seasonal rate
of fall.

Cause - yesterday sky
was overcast and
mountains were shaded.

NB. - Irregularity of melting
is followed by irregularity
of seepage flow. The
lenses can not maintain
the same flow, it finishes
when the melting is constant.
How soon will seepage flow
cease after melting is complete?
Temp. $12.2^{\circ}\text{C.} = 53.96^{\circ}\text{F.}$

- Table of Temperatures -

of Water in Steam -

~~7:30 a.m.~~
7:30 p.m.

5:30 a.m.

7:30 a.m.

10:30 a.m.

1 p.m.

5 p.m.

July 8 -

July 9 -

July 10 -

48.6°F.

50.7°F.

49.6°F.

54.3°F.

54°F.

57.2°F.

55.8°F.

56.1°F.

54.3°F.

NOTES

But little timber on
Rocky Mountains. Some
noble pines near summits
and a small amount
of cedar.

The mountain cones
consist chiefly of aspens
and bull brush which
resembles manzanita.

But little timber is
taken from the range
a few men are hauling cedar
from the southern ends

The fuel timber occurs
in the lower ranges
between Elko and the

Ruby Mountain in abundance and is practically outside the limits of the Ruby Forest Reserve. This cedar dots the otherwise bare hillsides about as thickly as a young orange orchard, and the individual trees average 6-8 feet high.

The bull brush has been destroyed in the part by sheep men because it was impenetrable to sheep and fires could be seen lighting a mouth at a time.

The cover of green now covers very large portions of the range from base to summit cliffs.

The cliffs and the cold of the Ruby Mountains are the chief asset of the ranchers along the Humboldt River. The natural meadows and the aspens and huckleberry give this asset stability.

The lower snow keeps the river plentifully supplied with water throughout the winter and spring, but the high water regularly occurs in June on the eve of the second irrigation, which immediately precedes the

cuttings of the first crop
and ~~the~~ fresher than
alfalfa roots for growing
the second crop.

at Reno, the high water
precedes even the first
irrigations, I believe.

+ + +
The North Fork which rises
in the Independence Range
is the antithesis of the South
Fork and other Ruby streams.
It flows from Cancer,
wanders mountains.

The water goes down
earlier and with a rush

+ + +

Irrigations on South Fork

Each irrigation for alfalfa lasts ten days from one end of field to the other.

First Irrigation - May 1-15.

Second Irrigation should end about three days before cutting first crop (which will be cut this year July 10-20).

Third Irrigation should occur in the middle of the growing of the second crop, or in August. Second crop is cut in September.

Water is generally highest
in June. This year June
20-25 but later than usual
for late spring soft high
snow from melting.

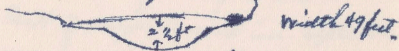
But highest seen recorded occurred
July 5, 1897.

High water comes at
irrigation time but
owing to natural meadows
at Crane's and elsewhere
the water is shut off
as much as possible to
reduce the high acreage
of meadows, but water
is used on the high
grounds which forms
a narrow belt along
the sides of the narrow
river valley.

Phase of Stream Flow

Early snow starts to run off in March and is usually gone by the end of May. The highest level then is 10-12 inches below the present level or $1\frac{1}{2}$ feet deep in center of stream.

July 9, 1908. flow of stream was as follows



Current 60 feet in 9 sec. or 4.54 min. per hr. This shallow bed is 8-10 deep at outer edge; the remainder will average 2 feet.

Approximately June 25, 1908,
 the stream was 9 inches
 higher on north bank
 and 12 inches on south
 bank (Estimate of Chas. Crane).
 on 3 1/2 feet deep.
 The width was 10 1/2 feet
 greater, the bed being then
 57 1/2 feet wide, shallow
 included ^{within it} but a current
 was not known?

* * *
 Stream regularly comes to
 least of August and in September.
 Men at head of stream
 have sufficient for second
 crop irrigation, but men
 at Louisa sometimes short,
 * * *

Stream in winter
nearly as high as March
streams

x x x

Water this year perhaps
2-3 inches below average.
May snow in Red Mountains
deeper than all earlier
snow of year (Chas. Cross).
This May snow was probably
drifted and packed there.

NB. - High snow tends to
accumulate evenly year by
year. But some slight
variation may occur.
Cliffs and cold wave
wanderers.

x x x

I marvel at the slight daily variation caused by rain. ($1\frac{1}{4}$ inches) compared with the steady flow of $2\frac{1}{2}$ feet. and at the slowness with which the high water accumulates from the mountains ^(14 hrs) tho the current at Canis is $4\frac{1}{2}$ miles per hour. This is due to the spongy bed of natural meadows and the barrier of aspens, rocks, and bell bush that serves in part to form basins and hummocks.

The strength of the floor is in part maintained by the canopy of bush

which shuts out the sun
and the wind and thus
retards evaporation.

When conditions are
changed as in February 1901
the effect is impressive.
Then the ground was frozen
and the brush bare of leaves
(How well brush?). Lots of rain
and warm weather
occurred, when the
river went out with
a rush. When the flood
started the river was
full of ice.

* * *

The main Branch at Edo rises at the wells (some spring meet of the state "wells") and tho at first a seepage stream it is soon fed by snow tributaries from the Roly Mountains. It is therefore high and rapid at Edo before the South Fork enters it.

Study —

- (1) Floods, time of rise and fall of North Fork and of Main Stream in connection with Paly streams. (2) Study Main Stream near Wells.
- (3) Study other Paly streams
- (4) Compare area of Paly uplands with flood of Humboldt in reply to Colorado bulletins. See flooded Humboldt banks, Rivera bank full, lush meadows, wide extent of ranch lands. Verily mountain tops are far

more potent than their
areas would seem to indicate.

(5) Study area, location,
and present value of natural
meadows as hay lands
and as reservoirs,

(6) Get maps, contours, etc.,
of U.S. Forest Reserves
and adjacent basins.

- Expense Account -

Tues. July 7 - Sleeper \$ 2.50

Wed. July 8 - Porter fee .25

Breakfast .25

Friday July 10 - (Stage - - - 1.50

Dinner .50

Sleeper 1.25

Sat. July 11 - Porter fee .25