

1908 E.

1909



Monona co. - Whiting

Smithland

Harrison co. - Persia

W. Valley

Delwara

Omaha (Gilder)

Monona co. - Whiting ^{11/2} ^{1/2}

Smithland) ^{Sept 33-1908} ^{Jan. 4-1909}

Harrison co. & Persia

4/1909

Omaha (Gilder)

Delwara 4/1909.

811 Third str.
Dr. V. L. Fryman.



1
Nov. 21, 1908

cut of ...
ridge ...

Kanran ...
Section of ...

Photos ...
Looking ...
Tom King ...

cut ...
a compact ...

...
just above (view) of ...

cut to show base and
 150' of clay & 10' of
 glauconitic sand. Much
 in parting. Few fossils
 of few - some nodules.
 See also in [unclear]
 between [unclear] from [unclear]

At ^{SW.} just ~~SW~~ of [unclear] was
 (1/4 mi.) in a cut showing
 about 18 ft. of red joint clay
 (up that high), only 6 ft. really
 exposed. At foot in was
 saw stones

C.M. 50P

Nov 22, 1908

The Malady pit at 35 ft. above
 road here about = 4 (bottom) shows
 about 2 ft. of cross-bedded sand
 with Kansan below. Not much disturbed
 at 45 ft. (up to 45 ft.) at a
 point a little N.W. about 4 ft
 of white speckled fine sand
 + sand appears, like Kansan
 distinctly above it.



cut surface - oxidized some
 & with calcareous plates

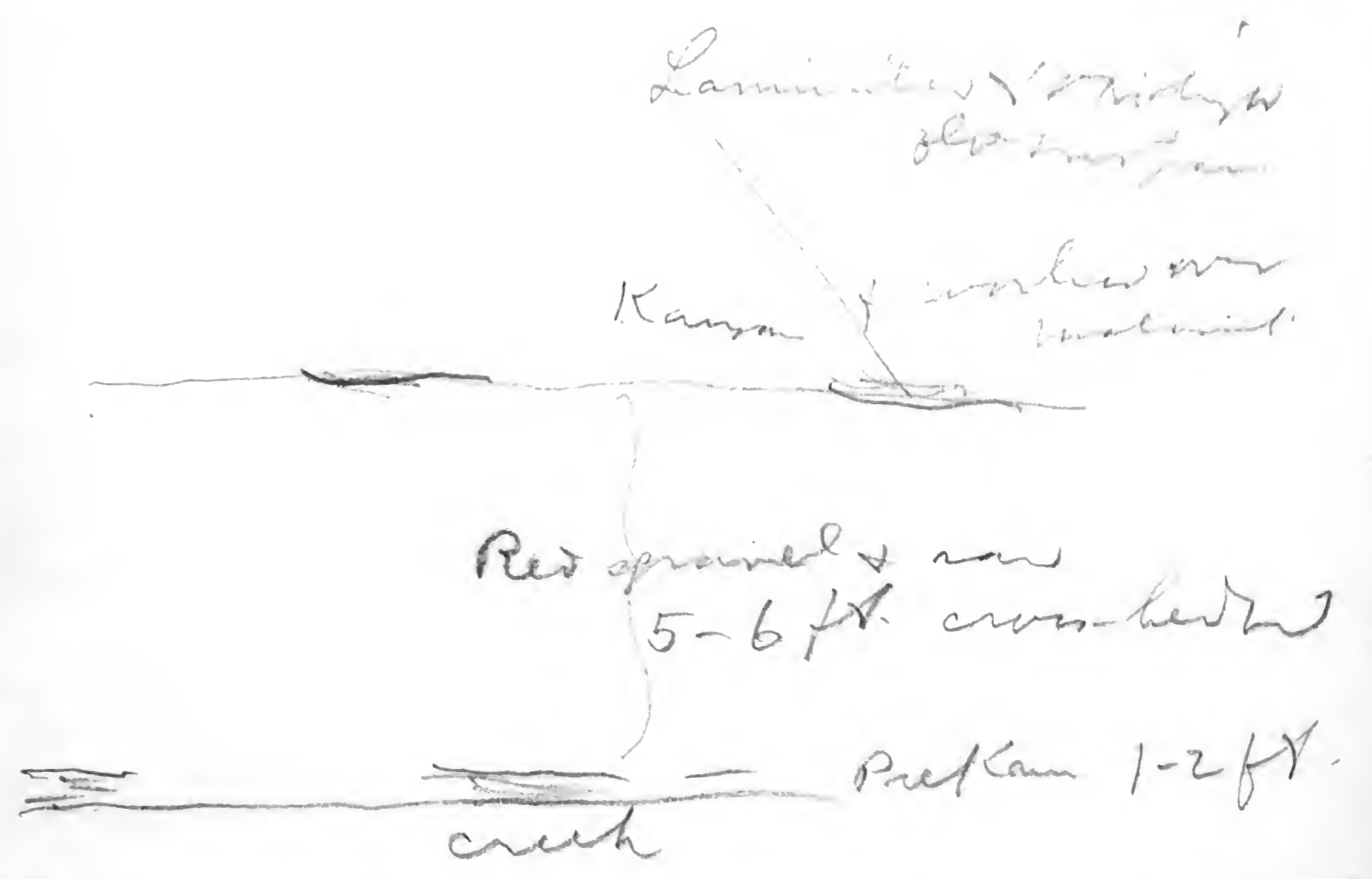
This is evidently Tuller's & flower.
 a ~~small pocket~~ ^{layer} of sand appears
 a few ft. above this up the
 gulley - probably 5 ft above top
 of the main exp. It is cross bedded,
 fine sand & fine gravel interbedded,
 & shows old surface above, with
 Kansan over it.

Wood was green trees:

- | | |
|------------------------------|---------------------------------|
| Mammaw | <i>cornus paniculata</i> |
| Celtis | <i>Symphoricarpos</i> (white) |
| elm | <i>and</i> |
| " | <i>fulva rubra occidentalis</i> |
| Walnut | <i>Vitis</i> <i>sp.</i> |
| Pedicular | <i>Salic.</i> |
| Banana | <i>S. sp. Maple</i> |
| Ostrya | <i>Celastrus</i> |
| Sassafras | <i>Evonymus</i> |
| <i>Quercus</i> <i>ispida</i> | |
| <i>Ribes</i> <i>marianum</i> | <i>Crataegus</i> <i>tomata</i> |

Plots 3 1 & 3 - looking up
 Woodrow Glen

Up the East fork of Woodrow
 Glen. from N.W. side, a high
 bank about 25 ft high
 cut 2



The pack. is very typical & here
 jointed, though wet.

No. 3 is the old Woodward pit
This is near road & low.

The new Woodward pit (no 4)
shows about 3 ft of fine white
sand, & above it irregularly
about 8 ft of sand &
gravel

Sand
gravel

Opal size

quartz

white sand

white sand

Gully (see box)

The white sand contains a
hard tree (like Coxi)
It is mostly afternoon

its base is about 5 ft above
road & probably 20 ft below bottom
Some of the upper layers of
sand & gravel are oxidized in
streaks & bands.

At Smithland visit
A. M. Furman pit.

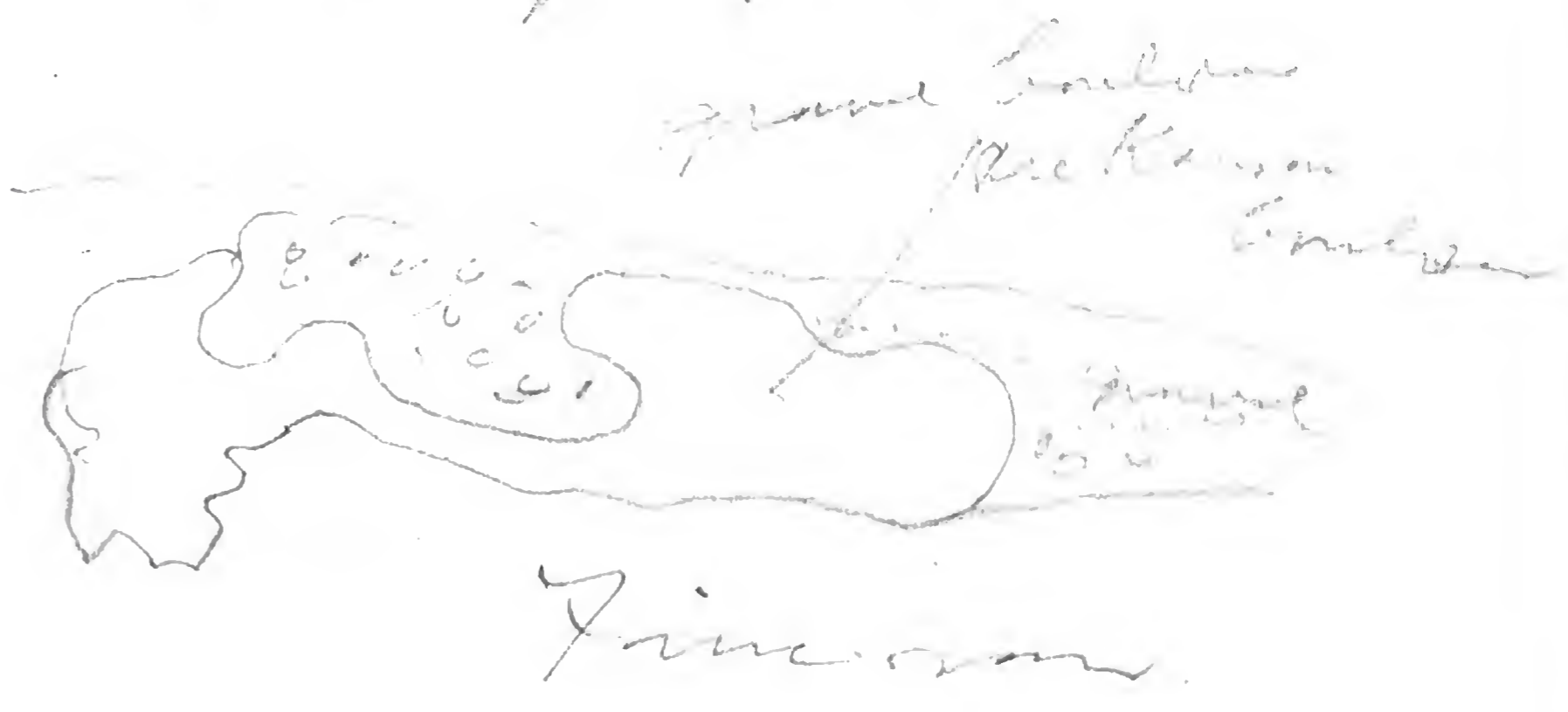
[Tooth came from near bottom
in road cut - about 4 ft.]

In N.E. part of Smithland just
N of road. The top of pit is
65 feet above bottom &

the sand probably (says
Mr. F.) is at least 30 ft deep.

Found fine sand (white)
Road = 45 ft below top of gravel
& bottom 65 ft.

E. end pit



This pit was there
last year.

Dr. Rice says there is
stratified gravel near the
old mill (in South part of
Town) but now covered,

The material in the pit
is of the usual Aftonian
type. Toward E. some black

March 1891 9+10

see sketch map

see sketch map



a = ...
b = ...
c = ...

d = ...
from the ...

sand & gravel, also oxidized
bands, alternately fine
gravel lenses & sand wedges,
mud balls, ~~off~~ white
nodules, and all.

Toward E. side there is more
flowing & irregularity.

Turnman found what he
thought might be piece
of (elephant) tusk.

Drove down E. side of Little
Sioux.

At Stone house
now pit (5), it shows
about 6 ft. of red
cross-bedded gravel (all
fine) with some sand.

It seems to show a little

till to S.

It is capped with Kansan,
but old contact line is
not so well marked here,
though not wanting. Some
have suggested that it is
merely a remnant of top

drain in & can thus be the
case. There are some plates
between Kansan & top of

The hill sides here on W.
side of creek-gully are

thin with Kansan boulders
(small) & gravel up to a
great many feet above
gravel pit.

The surface is even to

Kansan, except at very
top where from about

shrub,

2 ft. Kaun

Mixed ground

oxidized bar

cross section

The upper part was probably flowered

This is Aldrich & Young pit.

- in the Kaunian region
- Synsphaeria*
- Bonellia ruscina*
- Sclerolobus*
- Antonia*
- Muller*
- Symphoricarpos*
- Verbum strictum*
- Septilobus*
- (possibly *pasture*)
- Cinnam*



SW¹/₄-27-85-44

No. 6 is a small but thin
lime plate. It is
Kansan & appears to be

3 ft. in length & 3 ft. in

thickness

Just below it is 15 ft

above bottom

(Located Winneyan pit on
map) Some higher
as others.)

The point of bluffs reaching
W. is rugged & the northwesterly
slope (which we could well
see) are mostly forested.
On the curve there is
protection.

Holmes says that Winneyan
pit has much sand &
some gravel. It is situated

on bench about same as
the other.

Mr. Storre (at Stone bridge)

says Winneyan really has
two pits.

Is it not a fact that all the
bones & teeth are in deposits
along tributaries and that
none occur along main stream?

(no)

Nov. 28-1908

Made trip to Woodbine
& up the willow. Look
up notes.

Dec. 17- (Wed.)

Left Iowa City for Orem
at 12.45 AM. Reached
Orem at 9 AM (late)

Dec 14 - 1908

Left Chubb's at 7⁵⁰ AM
& went to Mrs. Valley.

Drove to Cox's & got 3
horse teeth.

Interviewed Mr. G. H. Dues.

In 1897 he planted 1000 apple trees
Jonathan, Winesap, N.W.,
greenings, Grimes³ Golden
Ben Davis². He values
1, 2, 3 best in that order.

In 1898 he planted 4000 trees

" 1899 - " " 900 " (at N. end)

At N. end, 18 A., 1400 trees, Ben Davis^{2/3}
& Jennetts^{1/3} also 500 "Champion"
peach-trees (which he will
destroy - too uncertain)

Total 60 A. of trees

On low ground he raises practically

nothing, except 2 years ago.
Variety has nothing to do with it,
so far as flowers go N & S. sides are
practically same, but fruit colors
better on S. side. Bark rougher
on S. side & growth of wood & twigs is
better on N. slopes.
Last year Jonathan failed because
too dry in August.

Thinks commercial orchard pays here
if cared for.

also has 1000 Concord grapes planted
4 yrs. ago. A year ago crop brought \$400,
last year \$80. On S.W. slopes. Set
out 600 more last year.

Lot 16 + part of NW 1/4 S.E. 1/4 sec. 1-78-44

W. A. Fouts - 2 mi. N. of Mrs. Valley
(N. of John Cox). Succeeded with
fruit & vegetables. 40 acres of land,
about 15-18 in trees. Mostly apples -
Ben Davis, Jonathan, Wealthy, also
about 1 A. of cherries

abe L. Haight - 20 A. S. of St. Johns. Also
not cared for.

W. T. Worth - E. of Wondamin "in hills"
mostly younger than Dues's. Replant 1/2 E. 1/2 NW 1/4 26
50-60 A. NW 1/4 & SW 1/4 NE 1/4 23-80-44.
A. S. Worth - S.E. 1/4 NW 1/4 80 A. Raise many trees. So well.

Dues 2 pages from Dues

22 The wattle's first green small fruit,
Raspberries heart shaped trees.

Left for Logan at 1 P.M.

Found blue loam at Logan 1

block W & 1/2 blk. N of
depot (C.M.S.) in row.

show iron tubes

I drove S. & across valley at

Oston's siding & up the valley

on W. side, to map terraces.

The big Logan ^{bench} terrace (E. side)

is broken & irregular toward

S. end, & also fades out

westward, as if eroded.

also map low terraces on

W. side of river, yellow

loam everywhere covers

these terraces.

I returned to Logan at 4:45 P.M.
& went to look up well-
diggers, David Leyesham
and Lowery Moreland, but
found neither at home.

Left Logan at 5:58 P.M. for
Woodbine. Put up at

Hotel, Phoned to
Kinney - not at home,
Deputed names of Theodore
Warren and Ed. Hoelton
at Woodbine, - well-diggers.
Interviewed Mr. Theodore
Warren as follows.

Mr. Theodore Warren, Woodbine.

This is usual section on terraces.
Ordinary section for wells.

yellow clay

25-40

Blue-gray clay 4-10.

Blue sand, ^{no sand or pebbles}

Blue gray, very fine sand (too fine for 60 ft.)
3-6 ft.

coarser rusty sand. 7 - Probably 8-12 ft. (or more out)

Sometimes sterile hardpan
sometimes rusty, or blue-black

Strike

usually stop in sand.

Run from 45 to 75 ft.

to get water.

In south part the sand layer is thinner & coarse gravel at bottom.

Mr. Warren says that rock was obtained from bed. or mine about 4 or 5 miles (near old poor farm). Used to burn lime.

Well near Willett's siding
Off the bottom on 1st bench
Hard rock - limestone (being rock at base)

This was a dug well 70 ft deep. & Mr. W. drove 35 ft.

Along RR. in Woodbine he strikes rock (limestone) - usually about 28-30 ft in place.

This is all on flat.

In S. part of town he strikes
boulders - yellow clay
Blue sand
Fine sand
Boulders in joint clay.
This is just off bottom (low down).

This side of graveyard strike
water (in sand) - 60-80 ft.

Beyond graveyard strike
bank at 90 ft. (brown)

On E. side of river there
is no blue ^{gray} clay (& up toward
Dundlap on E. hills) & water
does not rise.

On Woodbine ^{bench} terrace water
always rises as soon as
boiling is made through blue
gray clay.

In hills on W. side
yellow clay - ??

Gray clay (lighter than on
terrace) -

Limey rock - (evidently
Kansan) -

This gets lower & lower -
& then comes rock.

Dec. 19, 1908 (Saturday)

Starts N. on N. side of valley
Hills low & rounded on both
sides.

no. 14-81-41

At I. Kansan bluff appears on
lower slope, with blue over
it, a little higher up this is
cut 6 ft. & shows 5 ft. or more
of blue loam with many iron tubes
& above it 1 1/2 - 2 ft. of nodular
yellow loam.

(See samples.)

Some rounded nodules below.

Above a few fossils.

Gullies of crabs all deep

Took one photos 1 & 2 on

see 17-81-41.

n. line sec. 9-81-41.

Cut II is at edge of bench &
is about 12 ft deep.

Upper part is light yellow
& thin with a little loam, with
no strata & laminations below.
A few iron nodules.

See fossils & samples of yellow loam

n. side of sec. 5-80-41

Cut III is in yellow loam (see
samples) with few iron nodules.
12-15 ft deep.

Fossils.

This is also at edge of bench.
Probably not, but it is not much
higher than terrace. It is a narrow
ridge, cut N. & S. by road, & a cut
going East.

Cut IV is at edge of terrace - 7 ft deep
few iron nodules, nodular loam

above. Shells. (see sample & shells)
E. side (1/2 mile) sec. 6-80-41.

The terrace from cut ^{IV} 4 to creek is fine, nearly flat, & there has evidently been much cutting done by the Pirayune creeks. The bluffs between the creeks are indistinct, & the terrace not sharp, both evidently glacial.

Much of the bottomland on E. side from Dundas south slopes up gradually to foot of hills, so that very much of this is evidently tillable, & is now in corn, etc.

All the terraces have fine farming surfaces.

Reached Woodbine at 12:30 PM, took dinner, & left at 1:40 PM for Ormahee, (45 min. later)

The terrace opposite Dundas (cut II) is about 45 ft. above valley. That on which Dundas stands is cut by creek & is irregular, but business part of town is about 40 ft. above valley & some ^{other} parts probably 50 ft.

The terrace opposite above Woodbine seems to be about 35 or 40 ft.

~~Was the trip up Soldier
& to Bigler's grave
(from Woodburn) made
on Dec. 19, ? -
also to Woodburn gravel
pit.~~

Nov. 28.

Left Iowa City at 9:00 P.M. ✓
Dec. 30, 1908 ✓

Cedar Rapids for Owan
at 1 A.M.

Dec. 31, 1908 (Thurs.)

Reached Owan at 11 A.M. about
2 1/2 hrs. late.

Left for Castana at 12 noon
(about 30 min. late)

Mr. G.M. Day.

Belvedere (bench)

well 120 ft deep. - probably
sand & gravel.

Said Tracy - welligger.

Combs Keairns - the man who dug
the well at pit.

(The bone - Mr. Day's came from
upper pit, never well.)

this is pit described
by Doug

The pit about a mile below
Mapleton is just S. of RR bridge
on E. side, in bank of river.
See Vincent C.E. at Osawa
Mitchell

~~John S. Sweeney~~



Photos 17 & 18

Gr. 9W, sec. 13 NE cor.

The road is on bottom (15 ft
above bridge) & the top of
quartz is 40 ft above road.
The other pit is about same
of well is only a trifle higher.

The road is on top of sand
15 ft. above bottom of road.
The road is on top of sand
15 ft. above bottom of road.
The road is on top of sand
15 ft. above bottom of road.

Several cylindrical
rocks 4 1/2' x 2 1/2' x 1 1/2'

Some of 2 1/2' x 1 1/2' x 1'
will show in the
road.

The road is on top of sand
15 ft. above bottom of road.
The road is on top of sand
15 ft. above bottom of road.
The road is on top of sand
15 ft. above bottom of road.

The road is nearly a level
with banks of river.

The flat just near depot
is about 5 ft. lower than
banks of river.

The RR is about 6 or 7 ft
higher than flat.

The cross-street opposite bank
is 65 ft. above flat (60 ft
^{Says Mr. Day} above RR) and the terrace
above, toward Day's, is about
85 ft.

They strike gravel everywhere
on the Cantain terrace.

Mr. Day speaks of Belvidere
terrace S. of Cantain, - where
Belvidere stood.

Mr. Day's house is 140 ft
from flat.

(Says Mr. Day some of the
flat, ~~terrace~~ - ~~is~~ ~~is~~)

Mr. Zary

On Belvidere bank (The Home)

38 ft. deep this is a
gravel, Mr. Alex. Bisbee's
cross row - about 125 or 30 ft

yellow clay - + some blue clay
before gravel.

Below the gravel pit (below
home, at Ordway's - very rec. 15,

about 7 or 5 ft. above row
hard pan - blue black - 2-3 ft

of surface went down 55
ft with shade + below 120
ft. more. - all hard pan.

About 2 1/2 mi. N. or
58 ft. - (first water at 8 -) blue clay
to sand gravel

Kansas run from 3 to 25
ft. - even 50 ft
gravel below it
2nd water.

If no gravel - no water,
& Kansas next.

On higher ground on same
bench (ca 58 ft)

8-9 ft to sand & gravel.

Finds blue clay (light)

above sand & gravel
twice out of 3 times,
if he doesn't he won't
get water.

The yellow clay (loam) must
blue loam 2 or 3 ft with
iron tubes is indication
that he is getting close.

to 1st water, which is just
below. To get to it -
run through 30 to 40 ft of
yellow stuff, with smattering
lighter streaks,
Finds small shells in
both rusty tube layer
(blue loam) & yellow loam.

In Cartman,

on top of ridge
well 124 runs from days
to sand & gravel
about 3 ft of blue clay
above gravel

To find water ~~water~~, 90 ft.
All yellow to this

On his own finds some
blue loam (a little on
this terrace.)

at John Carlson
place (where cemetery
is - on beach)
20 ft to 1st water
to sand & gravel about
37-40 ft.

Blue joint clay above
= 12 ft.

This is at foot of
beach, not on it.

~~Mr. Tracy's well.~~

at Will Day's - about
as high as JWP Day's
well - 133 ft deep,
to gravel.

On other lot - near
blue clay - 3 or 4 ft
above sand & gravel.

Mr. Tracy's well -

92 ft - ~~no sand or gravel~~
went into sand & gravel,
at 90 ft.

At 2nd lot W. town
little bank (20 ft
lower) he went down
about 75 or 80 ft &
found no gravel - ran
into hardpan
(subsoil)

about 30 ft to find
water.

1st water in a joint
clay - light color -
a sort of light steel
color.

Mr. David Tracy.
(see report).

Pond wells down at
Dunlap, & 2 in woodbine
(only to 2nd water)

At Dunlap no gravel
in S. part. S of creek
In NW. part of woodbine
no joint water, - no
gravel.

The sheet water (in
gravel) runs in streaks
Sometimes runs it in a
few rods.

At Dunlap (N. side)
you get gravel, about
65 ft. deep.

1 $\frac{1}{2}$ walnut trees depth
33 ft. - Before 1st water
& below this were walnuts

This is about 6 miles
S.E. on Jordan creek
(the Harro/Hutchins
place.)

Also one from "lion's
front limb" in similar
situation - before first
water,

about
saw & gravel 30 ft
below tree.

At Mapleton vinted
 well digger - W.M. Osborne.
 In upper part is yellow
 clay - about 62 ft. in
 upper part, about 9 ft
 of this is sand & some gravel
 fine sand about 9 ft
 then gravelly but never
 went through.

On bottom at least about
 20 ft of black soil
 then a hard layer
 crust -
 usually is about 42
 to sand -

Always fine sand at
 41 to 42 ft.

Sometimes rusty vein.

Above sand is bluish gray

Layer - Sometimes 7 or 8 ft. high.
 Fine sand - sometimes in soil.
 Black sand -

<p>about 10 ft. high gravelly at top the soil is very hard slope facing N. E. about 5 ft. high & shows very strong above in sand (possibly bluish) sand about 10 ft. high in front fine gravel on sand 1 ft. fine sand and one side - the top is exposed - Reminds of plowing? No bones or teeth here</p>	<p>about 10 ft. high gravelly at top the soil is very hard slope facing N. E. about 5 ft. high & shows very strong above in sand (possibly bluish) sand about 10 ft. high in front fine gravel on sand 1 ft. fine sand and one side - the top is exposed - Reminds of plowing? No bones or teeth here</p>
--	--

been found.

About 12 ft. deep.

Heavy clay with some
boulders underneath.

He says whole business
runs in waves.

He also says that mostly
in the gravel there were "regular

clam shells" and "periwinkles"

Evidently this is some
clam layer (gravel) at

pit 15 Easton.

This pit is in rec. 1 84-43.

Returns at 8³⁰ am. &

took train for Turin at

9¹² am.

C. F.
Mr. Griffith - Mapleton

Well 40 ft deep - E. of

Mapleton 2 mi. + 1/2 mi. N.

Loose gravel. South of

35 ft. -

Chas. J. Whiting - banker

has it - Mapleton

T. E. Wilkinson

N.W. of Mapleton -

From Turin of Mapleton -

Mr. Whiting has it?

✓ ✓
Photos 25 & 26 - Iron Fossils

top of ground in
Here, Wagon bed is 35 ft
above bottom, about 5
ft of same, with
ground, + Kansan above
with white lime plates
fragments of shells (Sphaerium?)
but not identifiable unless
Kansan about 2-4 ft.
In 6 in to 1 ft below same
layer the fine sand is red
(oxidized)

✓ ✓
(Photos 23 & 24)



and

~~21221~~

~~21221~~
21222

further view

✓ ✓

Photos 27 & 28 - facing sun.

NW 1/4-27-83-44

In sec. 27. Crabbs bluff
Get much gravel now dumped
above it a thick (10-15 ft)
of Loveland clay, & is
above

180 ft above bottom

cut 22 - sec. 3-82-44 -
yellow loess - fossils see sample
all the loess along here
toward Turin is mostly
laminated below, yellow
with bluish streaks below

pt.

- ✓ 13 - Craig bench
- ✓ 14 - from Turin
- ✓ 15 & 16 Turin

pt. 170 above bottom

really lower

This great bench, connects with
"Belvidere Bench", being cut off
by a creek. The bluffs E of the
river higher.

All the top material is yellow loess

N. of pt. above 22 where red Loveland
appears in road, there is some Kansan
in the road, - along bank.

all along inner line of Big
crescent in bluffs below
Turin. The yellow Kansan
loess comes down to foot of
bluff or to road, but on
main face of bluffs the
Kansan is a thin form
the bench on which road
runs.

There are springs, some fine,
 below Twin and Top, line
 & also N. W. of Grand
 Center (W. side ridge) which
 come out of Afton's
 gravel.

Apply to John S. Ordway
 for record of cottonwood
 sales. Castana, Ia

Met Harvey - C. E. on
 train, in in Duluth
 Reached Whiting at 4 + PM.
 Met Am. Will Whiting &
 went to his home. Has daughter
 Woodson.

Wanted wild flowers for cultivation

Anemone	Onoclea struthiosperma
Synedra	Aspid. spinulosum
Juncus	Asplen. filix-foemina
Mertensia	Aspid. acrostichoides
Polemonium	Adiantum -

~~Went~~ (sent a basket in May, 1909!)

Went out to Chas. Holmes'
 place for night.

Jan 2-1909

Examined groves.

No. 1 - Maple grove planted
in Spring of 1865. (seed).

Cultivated in ordinary form.

The walnuts in this grove were filled
in later, - not much eaten.

about 6 rows of soft wood N. of line,
12-17 in in diam.

In main grove trees mostly not filled,
trees 8-15 inches (mostly 12-14),

appear like burst. Ribs numerous.

Sarcocolla molyneuxii, *Entolium agrestinum*,
Rubus occidentalis, *Mulleinberry* (slender)

A fair leaf mulch is developed

Prickly ash, *Rhus sarcocolla*, big *Quercus*.

Vitis riparia ✓

Photo 23 & 24 - In heart of grove 1.
Walnuts next to house (or - on old barrow) all
8-15 in - fine trees

no. 2. Walnut - (seed)

Spring of 1867. (The walnuts collected
in fall, covered with dirt. Planted
in a pen of boards - layer of nuts
thick (15-18 in of boards & 4 in
earth & 10 to 11 in of walnuts -)

no. 3 - Mostly walnut - some
cottonwoods (older) -

(Cottonwoods along the roads in sec. 25

are oldest - Planted in early
60's (1862 or 3?)

used small seedlings
from sand bars)

In grove no. 3 the cottonwoods
were planted in spring of 1866.

no. 4 - all walnut - about 1869
(from seed).

no. 5. Soft Maple - About 1870
Seed, (The seed was collected on
the Little Grove)

no. 6 All walnut (a few cottonwood)
about 1871 -

No. 7. Beginning at W. end -

about 275 yds. of green ash.

Then S. two rows are maple & rest walnut, up to line of sec. 29.

In sec. 29 - N. 3 rows walnuts &

S. rows are green ash.

(green ash - seed from the Kille
Sinks). This ^{row of} grove runs a
little over $\frac{1}{2}$ mile in sec. 29,
E. end of grove is all cottonwood,
extends a little over a quarter long
(to a $\frac{1}{4}$ W. of E. sec. line.)

The S. row on the W. part in
sec. 29 - is all soft maple
Mr. W. here experimented to
see if walnuts protected from
S. wind would do better, but
they did not do as well

W. part - N. side 29 - (near same)

Soft maple 8-12 in diam - best high

Green ash $5\frac{1}{2}$ - $8\frac{1}{2}$ in

Walnuts 6-7 in

3 rows of soft maple -

9 " " green ash

2 " " walnuts

A cottonwood right in row = 23 in

A box elder " " " = 11 in

A few of the trees taken as good
in here.

The rows in this part are 5 ft apart

In row in middle

Stork fern in this & trees are

not doing as well.

A row of soft maple about
 $\frac{1}{2}$ row from north line across and
the N. row of walnuts & ash

The cottonwoods at E. part
run from 8 1/2 to 18 in.

They are regular in size
throughout

About 15 rows - 5 ft apart
Stork "roosts" here & trees thin out
Charles Holm says stork
undoubtedly has been.

Stork scars & many drop out

The W. end of this cottonwood grove
is more affected by stork - the
latter waters near by & doesn't
go so much to E. end.

✓ ✓
Photos 27 & 28 - Looking N. of E.

along E. end, cotton woods on

Photo 15 & 16 - Looking NW

part W. end cottonwoods & at end
grove W. of gap

Photos 13 & 14 - Looking W.

from ^{W. 1/2} ...

lower ground

Photo 17 - Looking E

...

Photo 18 - Looking E

...

E. of Holm ... 2 rows of 10 ft

maples on S & about 11 of

Washington

Not pasture, but irregular

Washington 4-8 in

Photo 25 - Looking N. of grove

at W. end grove #7 ✓ at

school.

Soft maple and flower trees

at W. end of grove.

In this grove the soft maple
show effect of insects of

winds in branches, & walnut,
ash & cottonwood do not

✓
Photo 26. Looking E at
grove 1 - horizontal

oak
gum

✓
Photo 11 - looking E at grove
1 - school

a cottonwood in no 1 measure
45 in, other trees in no 1

White pine 19 in, 19 - 13, 24.

Black locust 8-10 in - fine

Hemlock

Hydrangea 12 in, 17 in, 24

Scotch pine 4-6 in clusters 12

Red cedar

Mulberry

Cottonwood 45, 41,

✓
Photo 21 - looking W at grove 1

In grove 1,

White elm 13

Soft maple 36

Box tree 26

Balsam 11

Salix alba

Norway spruce 23,

Austrian Pine 13, 18,

✓ ✓
Photo 12 - + 22

Woodlawn - 1 house - old
homestead

✓ ✓
Photo 27 & 28 - In C.S. Cozine's
(old homestead) soft maple

Photo 25-26 looking W from X

at x continued 24-27
 values 6-8.

13 1/4 road to town, at
 turn just E. of Whiting

Mr. Mitchell Vincent, C.E.,
 At Onawa.

Blue prints
 works with Wattle

Judge Addison Oliver
 Onawa, Ia.

Apply to him for tree-
 information.

Reached Onawa at 1:10 PM
 & put up at Monona House

Spent afternoon in
 Court house, consulting plat
 of roads.

Met Mr. P.P. Day there
 again, and then we
 visited Mr. Mitchell Vincent,
 an engineer, who is an old
 settler, & with Day & Wattle
 from a tri-... of
 old settlers and hale fellows.
 Vincent is now quite low,
 but was able to talk to us
 freely, and promised plats.

In evening called on Parker
 Holbrook.

Not at home.

Went to court house to see
ditch plots & left at
8¹³ P.M.

The Orange place (old Whiting
Arrested) is a beauty,
stately trees reward the effort
of Judge W.

White Pine, Balsam, etc,
thrive in shelter of grove.

The Walnuts near the house
are the finest I have seen
in this part. They are
sheltered but not crowded
by other trees.

The Honey Locusts are
also fine, showing larger
trunks than usually. They
are protected like walnuts.

Left Onawa for Missouri Valley
at 8:13 pm. & got there at 9:30 pm.
Stopped to see Brown, got box of
plates, & left at 10:52 for
(really aftall) for Council
Bluffs & put up at Kiel.
Re-loaded plates & repacked.

Jan. 3 - 1909 (Sun)

Left for Persim at 7:50 AM
Day misty & promising storm.

Cut I - n. line sec. 8 - 78-41.

found red joint clay in road &
+ a lone boulder (small)

In bank on N. side about
4 or 5 ft. of yellow loess with
6 ft. of red joint clay

n. line 7-78-41

Cut II - n. line sec. 8 - 78-41
cut is 2 ft. high in 4 ft
cut is 1 ft. deep at base of
cut is 1 ft. high in 4 ft
cut is 1 ft. high in 4 ft
cut is 1 ft. high in 4 ft
All the way up the cut
moderately steep slope, the lower
with numerous large thin
plates, below it is yellow
nodular with some 4-5
ft. deep. In places, especially
up lower upper part, the
fine near the top, some
sharp, the base, showing
of low oxidized.

n. line NW 1/4-12-78-42

Cut III is on steep hill
along road rising N.

It is about 10 ft deep.



The lower beds tubes &

show laminar

Also a good many nodules

Fossils quite.

Took samples & shells.

Above the yellow loam is

5 or 6 ft deep

n. line NW 1/4-12-78-42.

Cut IV is a trench made to test

✓ is about 6-7 ft deep.

(From 5-6 ft yellow loam

sample) ✓ a ft of blue

loam below with iron tubes

between

n. line NW 1/4 22-78-42

Cut V runs down hill 5

in not steep slope is

only a couple of feet deep &

shows blue loam with iron

tubes & shells. Also nodules

n. line NW 1/4³⁶-78-42.

Cut VI Blue loam tubes

nodules & shells run

down hill to E. 3-5 ft deep

Nodules common

Linnæus in a line or narrow

band. Shells more abundant

on lower slope.



S line SE 1/4 - 8-78-41

Cut III is heavy yellow
 blue streaks above (nearly
 horizontal) & blue below
 took fossils from yellow
 part

NW 1/4 - 9-78-41

Cut IV is a block W. &
 3 blocks (long ones) South
 of depot. where road comes
 up hill
 Just S. of road going W.
 (over)

Cut VIII



Sandstone
conglomerate
Part of
Kansan

of

On north side of clay hill, as at
this is about 15 ft above valley floor
a little
higher

Cut VIII has been used as
a sand pit but it is
evidently not a quarry &
rather a gutter, and
does not show any ground
except in patches.

All along the Perine mile
I found blue loess with
iron tubes, & over it a
yellow loess - usually not
over 3 ft, sometimes 6 or 7.
The line between the two is
usually sharp & unconformable
In cut VII (to the one before it)
the lower part of yellow
loess is blue & red streaked,
probably belongs to Kansan.
The fossils are chiefly in

part Kauri being only 1719
 the one before (see below) showing
 shells in yellowish sand.
 The latter is very
 not like the former one.

Jan 4 1909

Cox pit

old
 elevation above sea level
 of sand = 25 ft.

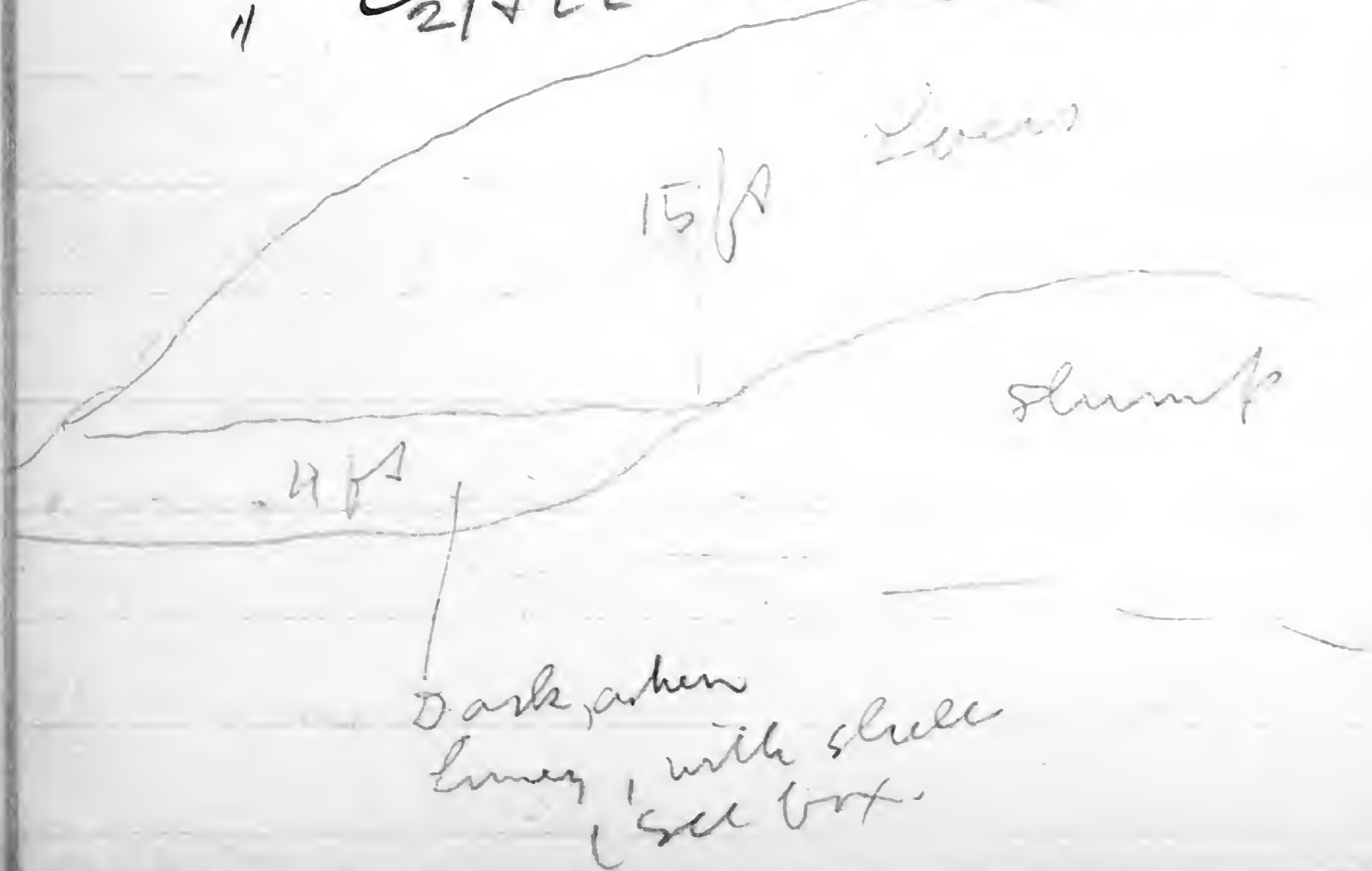
well - 150 yds E. of E. line
 of old road.

It is just a small E. side
 pit - a little north.

The well is 65 ft. above top
 of sand. The ^{old} road is about
 30 ft. above sand.

Went into Snyder Hollow

cut just E. of spring
Photos 15416 more distant view Mud
" 21522 near " "



The same dark layer appears
in my 2nd cut E. run 3 ft
deep. It runs E. of the
road - see shells
run below into heavy yellow
of red & blue sand & coarse
into coarse yellow sand
looking like scummed over.

E end of same cut - at turn
shows much more material,
some like blue limy water
run (see sample) & full
of shells - this is all
part of 2nd cut.
The very E. end has sandy streak
& little layer of broken
shells (some *Linnæus* etc.)
showing water action

2 mnd 2 mnd 2 mnd
(or call it 3 mnd)



10 ft red bands

glaucon, sand, etc
grey shales & sandstone

On the side of Black Rock
bank above the highway
there is a small
part of it very probably
overlooking part of
the section, and
exposing it well

At Smith's pickyard, I found
a block of Kaunau above
Also ~~one~~ red clay

Mr. J. S. Wattle's says
that - add 1006.806 ft.
to elevations in Harin
co. = mean gulf tide
near New Orleans.

The Missouri survey in
Monroe co. & the
overflow map are
Mr. Vincent's - give
credit to him.

The Harin co. work is
Mr. Wattle's.

At city well in the Valley
Saw at 35 & rock at
90 ft. - saw some
below & at bottom
some boulders.

Feb. 4th 1909

Left Iowa City at 12¹⁵ am
 called on Mr. Gilder
 in Oriskany, and saw his
 collection.

He has much miscellaneous
 material, - bones, skulls,
 implements, skulls (clams) and
 a part of a child mummy,
 green with some copper imp.
 Also a charred mat, bone
 hook, needles, etc.

He finds houses on Nebraska
 side & caches with them

Here he has found much
 material, among other things
 the following clams:

Uris occidentalis ^{Several} - some with parts of epidermis
 " rectus ^{several} - both red & white mussel

- 3 valves.
- Unio luteolus* - ^{several} one a pair. Both ♀ & ♂
- " *alatus* - with little ^{several, mostly broken} fragments of epidermis
- " *ligamentinus* - 1, rather young
- " *plicatus* - with some epidermis. ^{2 spec.}
- " *metanev* (*wardii*) ^{somewhat} 2 or 3 valves,
- " *nodulatus* - 1, doubtful - may be
U. plicatus, - but not likely
- " *anodontoides* - one with piece
of epidermis - Several valves
- " *rubiginosus* - 1 with fresh valve
+ epidermis on part. 2 valves
- " *labyrinthosus* ^{several}
^{2 or 3 broken valves,}

Margaritanian implements

Some of the shells are perforated
(artificially) at umbones,

Some appear like scrapers &
some were spoons with
notches for handles.

Trifolts made of shells, - such

as a small fish, etc. are in
the collection.

The bone scrapers, needles, etc.
are (he says) tempered with
heat.

On Jan 19, 1908 he found a
fragment of *Unio* in the
Lange's Hill mound which
shows only umbonal region with
two ridges (v. tubercles) evidently
either *Unio metanev* or *Unio*
labyrinthosus, - probably the
latter.

On Jan 22, 1908, he found, at
a point 50 ft. N. of center
of my excavation, & at a depth
of 3 ft., several bones (some
grounded), shells, & clam shells.
Of the latter 1 is a somewhat

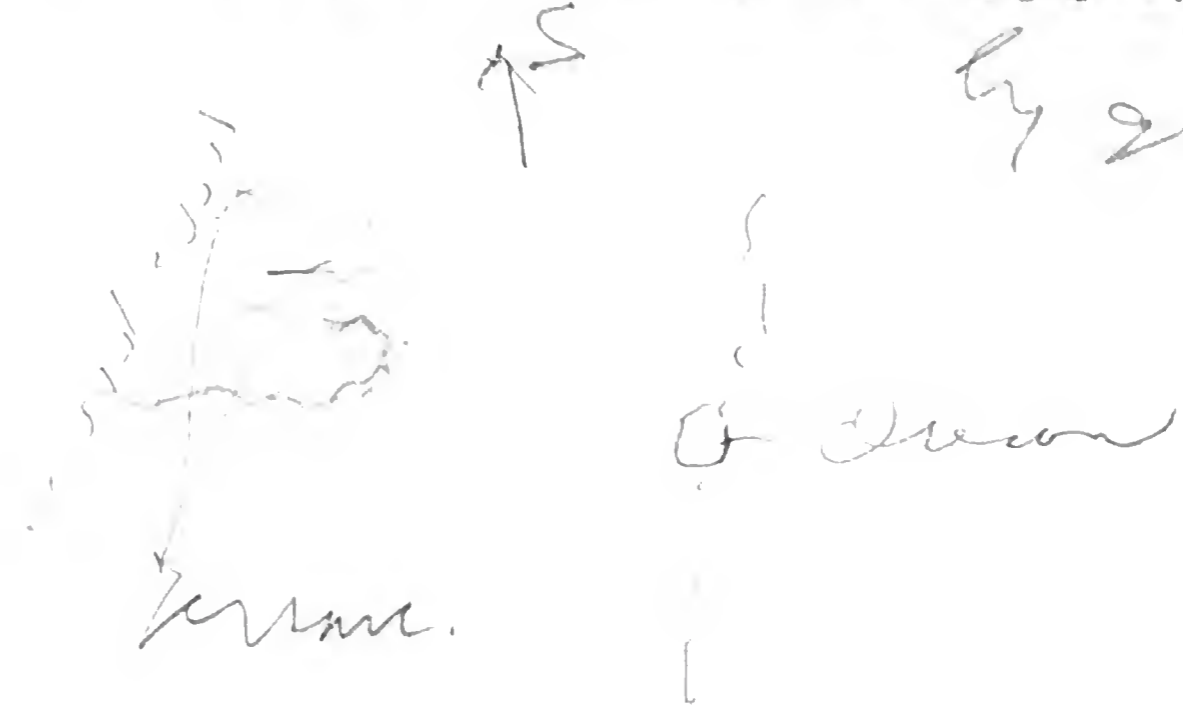
broken valve of Uris alatus, &
6 or 7 valves of Uris
lathyriformis.

Mr. Gidden says mound
on Long Hill is like
other mounds in these
parts.

H. R. Newton & Co,
Cement Works, etc
Mo. Valley

Jan 5 -

Opposite Oregon the
terrace is narrow & divided
by gully or
runnel.



Just below Mac^{William} Lake
the valley along RR is very
narrow, - can't be $\frac{1}{4}$ of a mile -
less evidently. This widens
gradually S. & on E. side
the edge of terrace is just
E. of wagon road.

Above lake the terrace
edge is steeper & steeper all
along E. side.

My terrace opposite Peckham
is probably over me -
Run back.

Feb 16 - On way to San City

Some of the cuts between
Ute and Mapleton, along
the C. M. & S. P. show
considerable drift

One especially, shows a good
many feet (8 to 12²) with
red boulders, & loess, not
thick above.

The bluffs are continuous
from Grant Center to
Green Ellen, the R.R. being on
flat. At Green Ellen the
R.R. enters hills & bluffs
run off to left.

Feb. 4 - Lecture at Bruno,
Wab. "Cyclops edited".

Feb. 5 - Spoke in afternoon
at Farmers' Institute at
Ute on "What shall we
do with our bluffs?",
In evening - scientific lecture
on "The Agave, value of trees".

Feb 6 - Reached Spirit Lake.

Feb. 7 - Visited Salween Lake.

Delwin, Ia. March 4, 1909

In long cut E. of Delwin
along C. & W. R.R., I saw
much brown soil (or yellow
rather) capped with 1-2 ft
of black peaty soil, blending
downward. (See sample.)

In places boulders were
scattered just below
black soil.

The deepest section part
of cut - (at 1 mi. east E.
of Delwin) shows

Iowan - about 5-8 ft

Kanran - ?

Stumps still

cut probably 18 ft deep.

In places stumps still
looked like pre-Kanran.

The Kansan is blue, with small
 pebbles, some white & jointed clay.
 The line between Kansan &
 Kansan is sometimes
 quite sharp, & again ~~is~~
~~this more commonly~~ somewhat
 blended.

There are trees - (as usual,
 Populus tremuloides & reed?)
 in Kansan prairie S.E. of
 Odessa, but I see
 that S.W. there is a
 timbered ridge.
 (Is this a Kansan island?)

102

103

710

J. M. Heald
Nashua
Ia.

711

Mich. 1, 1909.

	<u>Mine</u>	<u>Creditt</u>
✓ Cab Iowa City -	.25	
✓ Iowa City to Cedar Rapids	.65	.65
Transfer " "	.50	
✓ RR. to Oelwein	1.08	1.08
✓ Breakfast - Cedar Rapids	.40	.40
✓ Transfer - Oelwein	.25	.25
✓ Hotel " "	.50	.50
✓ RR. to New Hampton	.67	.67
✓ Hotel " "	1.00	1.50
✓ Transfer " "	.25	.50
✓ RR. to Charles City	.39	.60
✓ Meals " "	.25	.25
✓ RR. to Nashua -	.24	.24
Hotel " "	—	—
✓ RR. to Waterloo 37 mi.	.75	
Transfer	(.25)	
✓ RR. to Marshalltown 48 mi.	.94	
✓ Marshalltown to Cedar Rapids ^{69 mi.}	1.38	1.39
Transfer Cedar Rapids to Iowa City	.25	.65

OR Mine Packed
 Waterloo & C. Rapids 52 mi
 (Three rooms, not in mine
 Packed, all)

Total

~~\$ 13.01~~

75
Total exp. \$ 12.80

13.01
 .21
 \$ 12.80
 .60
 .80
 .29
 21

Mine

Packed

10.89
 .50
 1.00
 \$ 12.39

6.12
 4.50
 3.00

13.12
 \$ 25.51
 \$ 12.75

\$ 13.12

48
 25
 73

March 1 - 1909

Cab. Iowa City - Puchet. \$.25 c
 Fare to Iowa City - 2 - 1.30 c.45
 Transfer - Cedar Rapids .50 c.
 RR to Delwin - 2 - 2.16
 Breakfast C.R. - 2 - .80
 Transfer - Delwin .50
 Hotel - " 1.00
 RR. to New Hampton - 2 fares 1.34
 Hotel. 7.85
 RR. to Charles City 30m 2x 60 = 1.22
 Charles City to Nashua - 11m 2x 22 = .44

3.65
 Puchet $\begin{array}{r} 7.08 \\ 3.54 \\ \hline 2.00 \\ 5.54 \end{array}$

L.M. Utley
 New Hampton
 Down
 Puchet $\begin{array}{r} 2.75 \\ 80 \\ 65 \\ 1.08 \\ .40 \\ \hline 2.58 \\ .22 \\ \hline 7.08 \end{array}$

1 - 1865 - Soft Maple
 2 - 1867 - Walnut
 3 - 1866 - Cottonwoods, + walnuts later
 4 - 1869 - Mostly walnuts.
 5 - 1870 - Soft Maple -
 6 - 1871 - Walnut.
 7 -

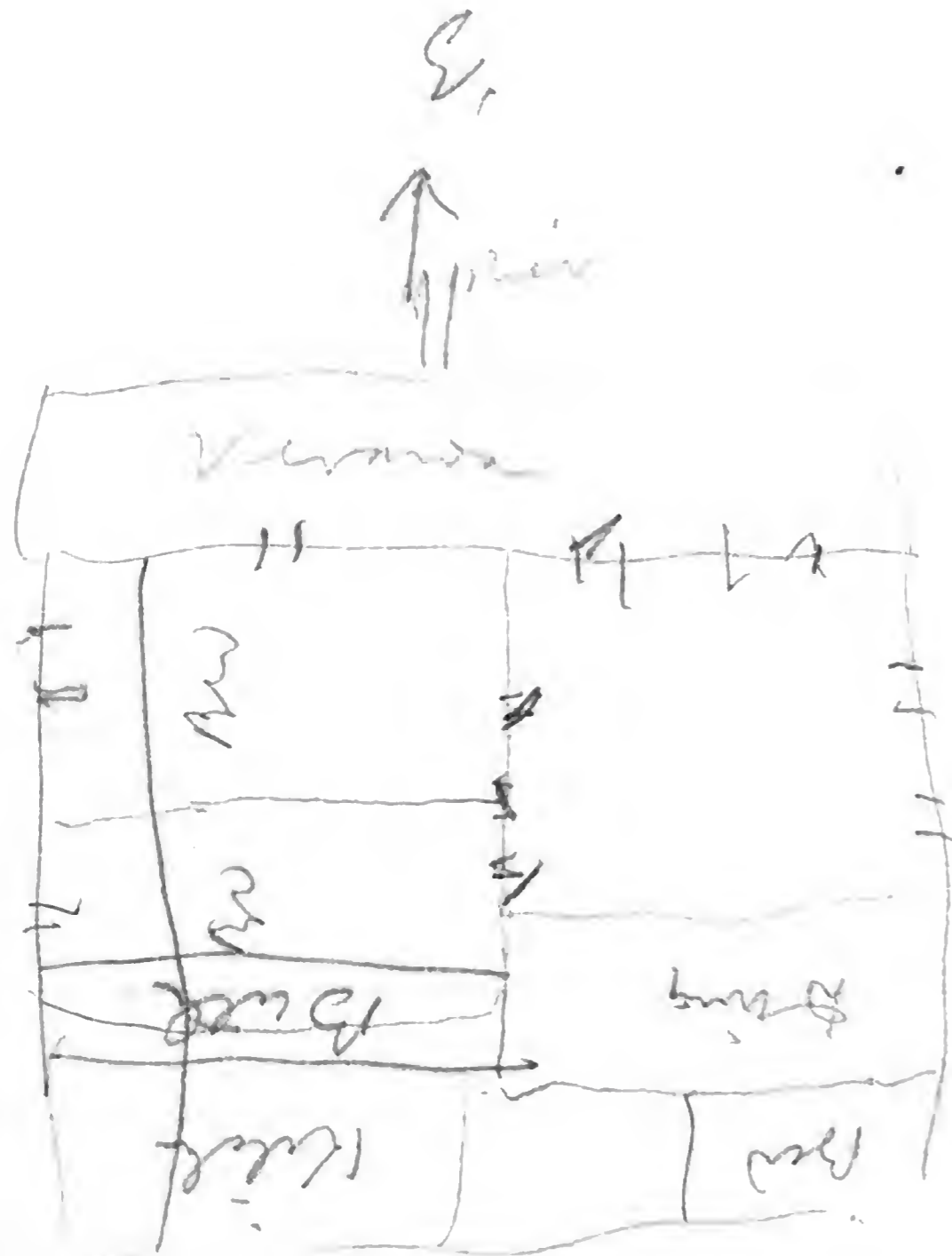
$\begin{array}{r} 9.69 \\ 3.50 \\ \hline 13.19 \\ 2.51 \\ \hline 10.68 \end{array} \times 8^3$
 $\begin{array}{r} 7.65 \\ 8.00 \\ 3.73 \\ \hline 19.38 \\ 2 \\ \hline 9.69 \end{array}$

Nashua to Waterloo 37.
 Waterloo to Marshalltown 48.
 Marshalltown to Cedar R. 69

$\begin{array}{r} 154 \\ 2 \\ \hline 308 \\ 15 \\ \hline 323 \end{array}$

New Hampton 3.00
 Nashua - .50
 Transfer - 2.50

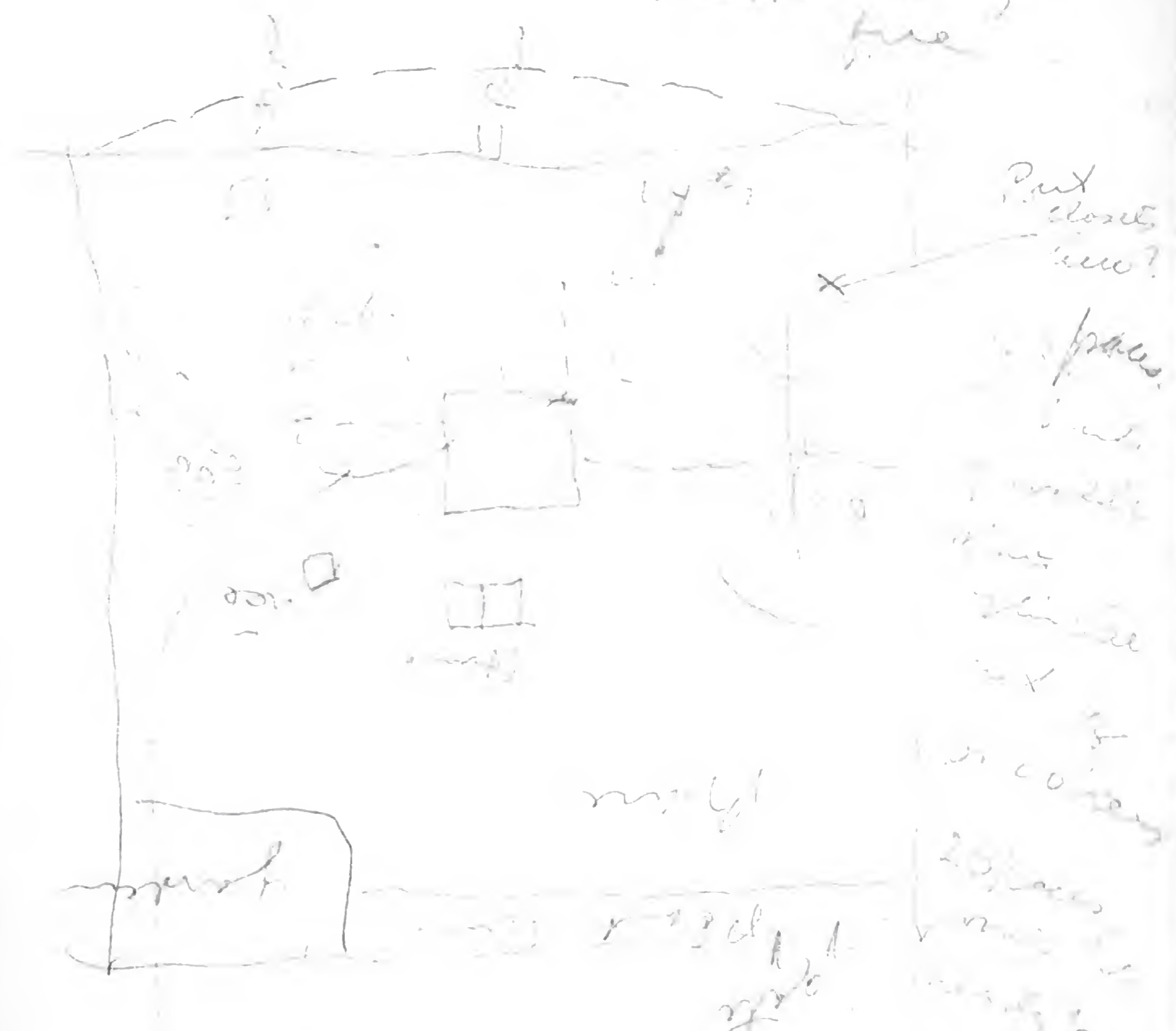
$\begin{array}{r} 3.00 \\ .50 \\ 2.00 \\ \hline 5.50 \end{array}$



The garden is so provided
that it can be irrigated.
Mr. Fr. Goodale of Milford owns hotel &
much of the land near.

Meals 35 cts. \$9 per week. - beds & bedding
furnished, except sheets & pillow cases
Cottage 7 room \$45 per mo
Mr. Smith's cottage - 3 room - \$90 year

about 45 ft
high



30 paces or 10 more is
necessary, & as far forward
as we can.

Mr. Smith's cottage
for lab - about
no beam
1 part overlies with them

Dec. 30 - Fare to C. Rapids .50

" 31 - " " Des Moines ^{CRabbits lunch .35} 5.66

Sleeper ^{2⁰⁰} Breakfast ⁶⁰ ^{1/25} 2.85

Fare to Canton .44

Canton meal ⁵⁰ .35

Fare to Mableton .13

Jan 1 - 1909 - Livery Hotel ^{1.25} ^{1.50} 2.75

Fare to Zuni .28

Livery - Zuni 2.25

Jan. 11 - 1909 - Fare to Whiting 1.36

Jan. 2 - ~~Fare to Des Moines~~ ^{Fare to Whiting} 1.00

Jan 2 - ~~Monroe Hotel~~ ^{Fare to Mo. Valley} ⁷⁷ 1.77

Photo plates ⁶⁰ .60

Fare to Co. Bluffs .43

Jan. 3 - Co. Bluffs Hotel ⁷⁵ ^{1.00} 1.75

Carfare ¹⁰ RR to Persia ⁶¹ .71

Persia - Livery ^{1.25} ²⁵ ^{lunch} 1.50

Fare to Co. Bluffs .61

Carfare ³⁵ .35

RR fare to Mo. Valley .43

Jan. 4. Mo. Valley - Hotel ^{1.50} ^{1.00} ⁶⁰ ^{Photo plate} 3.10

Fare to Council Bluffs .43

Carfare ¹⁰ Lunch ²⁵ .35

RR fare to Iowa City 5.24

\$ 29.39
107

Jan. 16 - 1909

RR. Mo. Valley to Omaha ~~.71~~

So. Omaha. 2 meals .50

Carfare .15

Omaha 1 meal .35

RR to Mo. Valley .66

43
113
156

1205.49

Dec. 17-1908

	Fare to Council Bluffs -	\$ 5.18
	meal " " + bus 25	.25 + ² / ₃
Dec. 18	" " Mo. Valley -	.46
	meal " "	.50
	Home & Crocky "	1.00
	Fare to Logan	.17
	Train - Logan -	1.25
	rr. to Winstan, 16 trucks	-
Dec. 19	Train - Winstan	1.50
	Hotel " "	2.00
	R.R. to Omaha	.97
	Carfare to S. Omaha	.10
	S. Omaha - supper	.35
	Carfare - Omaha	.10
Dec. 20	R.R. to Iowa City	5.49
	cab " "	.25
		<u>19.07</u>
		7.95
		<u>27.02</u>

121

Total exp. \$ 25.56

Receipts - Brown	30.00
- Utes	13.27
	<u>\$ 43.27</u>
	25.56
	<u>\$ 17.71</u>

46
15
81

~~95~~
46
81
200
33
233
4
237

Low lig. to Marin -	\$ 1.30
Marin to Ute -	9.32
	<u>\$ 10.62</u>
bag	.50
Oxygite	1.50
meal	.65
	<u>.76</u>

\$ 13.27

Feb 4

Fare to Co. Bluffs	\$ 2.24
Lunch ³⁰ paper ⁵	.35
Carfare	.15
RR. Co. Bluffs to Ute	1.36
RR. Orem to Bruno	1.42
Lunch ³⁰ paper ⁵	.35
RR. to Fremont	.68

Hotel Fremont	.50
RR. to Co. Bluffs	1.00
Lunch ³⁰ paper ⁵	.35

Feb 6 Ute - Hotel	1.00
RR. to So. City	1.15
So. City - RR. to Sibley	1.47
Sibley - Hotel ⁵⁰ , Compl. ⁵	.55
RR. to Grand Lake	.68
Supper ²⁵ " " cards ²⁵	.50

Feb 7 - Hotel " "	1.50
Team	1.50
Lunch	.20
RR. to Iowa City	5.36
Frank Grovati	.25

Milford: \$ 25.56
77

E. W. Greer
Warren Valley

Well.

Lowland Moreland

Logan
fa.

Davis Teysham

Logan
fa.

Woodbine

Theodore Warren

Ed. Hoelton

Sumner, Dec. 19-1918

\$ 19.50

Millem Hotel Mrs. Vallen

Henry C. Heckert

Mrs. Ella Dunn Heckert

Mrs. Clara Perkins - Day dish

Mr. Steen - night

