

Okoboji 1916

Muscatine
M
E.

Okoboji - 1916
 Lyon co - "
 Muscatine co - "
 Muddyface ca. 1917
 Crete - 1917
 Hamburg - "
 Blair "
 Dune Park - 1916

Crete 1917
Blair
Hamburg



Muscatine 1917
Dune Park 1916

Note Book

No. 312

B. Shimek
Iowa City
Iowa

529 Brown St.

July 31, Mon 1916

Aug. 1, Tuesday

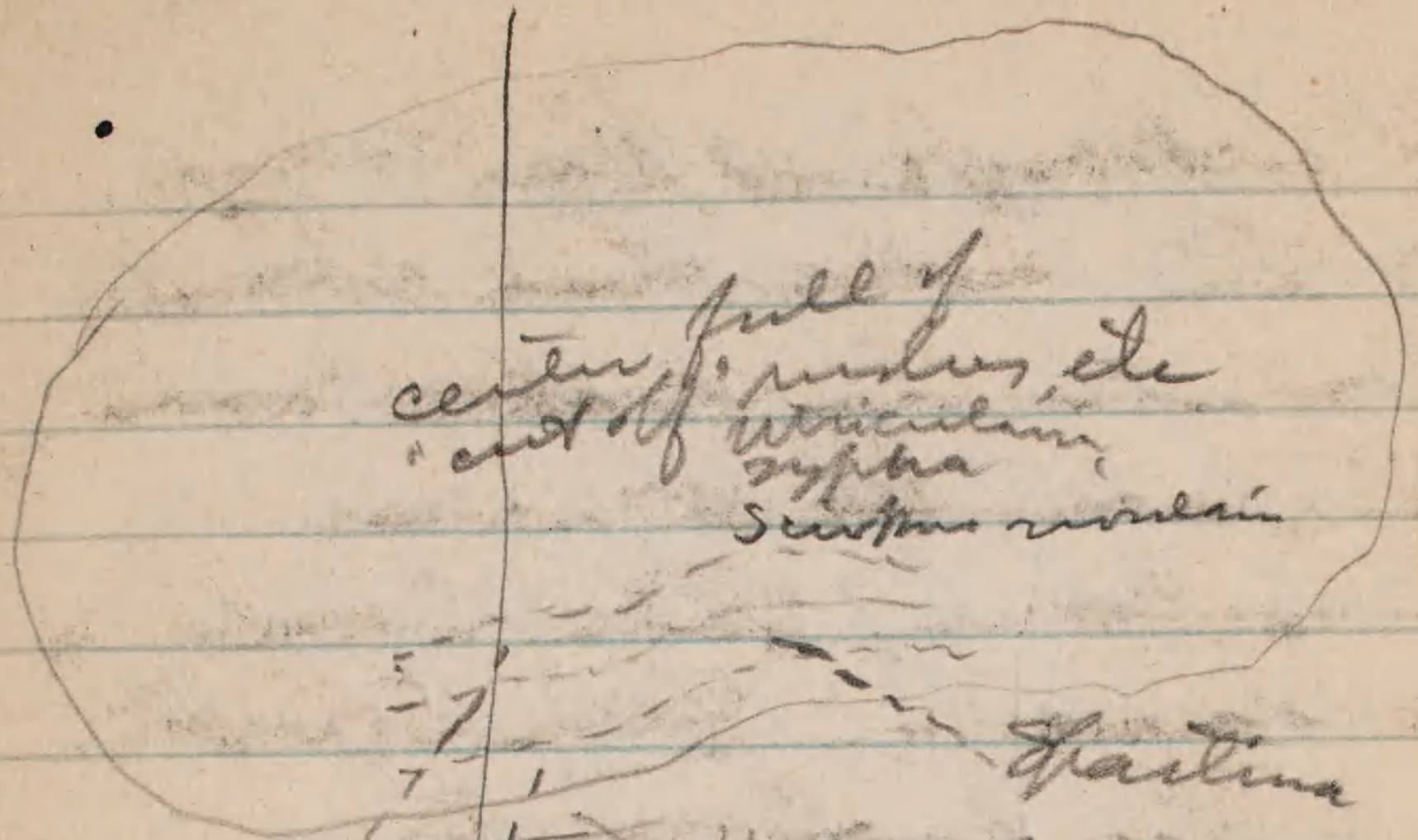
Aug. 2, 1916 - Wed.
Worked at plants all A.M.
In afternoon walked N.W.

at little hole (a) see 22,
took photo (7) looking N.W.
over little hole & oat
field across towards
Demuth's house

Took part of same little hole,
looking E. at muskrat
(photo no. 8). There was a
huge snapping turtle on
the house.

Swamp containing *Potamogeton*
zosterifolius, *Lemna trisulca*,
& eggs have *Polygonum*
umbellatum (fl.), *Martiana* (fl.)
Calamagrostis canadensis (fl.) &
Phragmites (fl.)
Utricularia (fl.) is abundant
out in water

The pond shows several
zones of vegetation?



center full of
 "cut off" *Utricularia*
Zypha
Sagittaria

Sagittaria

Helianthus growth

Calamagrostis + *Phragmites*
Polygonum *Mullus*

Photo 9 - is a small pig-infested
 water hole just S. of house

Photo 10 - S.E. side of Carex
 matted *Utricularia*
 stock & tile

No. 3 - N.E. shore of same
 matted *Carex* (yell.)
 showing belt of
Hydrodictyon

The slope at the W. end
 of this hole has *Scirpus*
validus in deepest water,
 then much *Scirpus*
rubra, then *Scirpus*
obovatus, then *Sagittaria*
 + then *Helianthus*
 growth. - Then
 prairie.

Photo 4 shows this W. end
 swamp cut off by fence
 no stock - On E. side
 is bare shore - stock

Photo 11 - Barley in stock
 looking N.E.

Photo 12 - One stock - look N.E.

Ridge N. of DeWitt's
 house, N. side of road
 The matted *Carex* is crowded
 around broad margin
 with *Scirpus validus*
 + *Zypha latifolia*
 S. of road there is
 no open water.

covered with *Siura*
cicutae from Calamagrostis
 etc. also *Cicuta*
maculata in fruit.
Siura is in flower,
 latter has ~~one~~
 compound leaves,
 The small little hole East,
 on S. side road is crowded
 with *Scirpus plumosus*,
 while on W. side are
Cicuta maculata etc.
 the large one just W. of
 school has *Scirpus*
validus in deeper part,
 then *Phragmites* swamp,
 then *Scirpus plumosus*,
 then *Calamagrostis* &
Phragmites, then
Spartina

In open part *Tricaria*
 that part of big hole west
 of school which is East
 hole S. of road, is

full of *Cicuta maculata*, etc.
 Photo 23 - Wheat field just
 W. of school. Looking N.E.
 Photo 24 ~~Oats field S. of~~
~~school~~ 1 wheat shock.

Photo 31 - Oats ^{Looking SW} S.W. of school
 Photo 32 - 1 shock oats

Photos 29 & 30 - School - 1 baby
 box elder, red bear
 grass (mostly tips)
 at window - Asparagus

Photo 15 - Looking N - corn field
 E. of school -

Photo 16 - Same, from
 road leading S.

Photo 5 - Drains little hole
 E. of school, NW. of turn N.
 Overgrown with
Elymus canadensis
Spartina
Helianthus ground
 Chubby part.

Oats had been sown here
but doesn't amount to
anything, you can hardly
see it when in ~~partly~~

Photo 6 - the small
drained bottle hole.
N.E. from last, just
W. of road.
Shows same capitulum
as in (5)

Photo 21: N.E. across *Erigeron*
bottle hole

Photo 22 - S. along edge of
Cephaelis bog

Photo 1 - W. of S. across
drained bottle hole -
Coarse sedge grass bog

A very hot, close day,
somewhat hazy, with
little wind

Returned to camp & found
Miss Maxwell.
Spent evening in writing
and reading.

Aug. 3, Thursday
Storking in morning.
Took care of plants all
forenoon.
In afternoon went to
canal & to sand spit with
Brook & Miss Maxwell.
Found floating sheep head
which had choked trying
to swallow a perch.
The sheep head was 4.7
decimeters long & 1.7 dm.
wide (counting dorsal fin)
The perch was 1.7 dm. long.
Took photos - 9 + 10 of
fish.

Aug. 4, Friday

Left at 7 am. for Orleans,
with Mr. Ross & Miss Maxwell,
got off at Spirit Lake &
walked to Orleans.

Collected on beach &
boggy muds S & SW of
Orleans.

Found many Lymanian
mollusks on flats around
remnants of ponds where
excavations were made
for fish hatching.

Found Succinea retusa
very abundant along
narrow beach & against
low bank at head of
East Lake.

Walked to Spirit Lake
& took the Des Moines back
dropped at Spirit Lake
dock.

Aug. 5, Saturday

Rained heavily at night.
Spent forenoon in probing
shells from my board
traps at the Lake & the
Spring.

At 3 pm. took launch
for Inverness Park.
Mr. Ross, Miss Maxwell
& I collected on beach
& then went by road to
Lake. Also collected on
prairie S. of beach.

Got in before the
Midford party.

Found Caenothus
ovatus.

Mr. & Mrs. Cratty came
about dark.

1916

Aug. 6 Sunday
left at 5 am, crossed
in launch to Hayward
Mead & walked to Spirit
Lake.

Collected a few prairie
plants on hill south
of center lake road.
Met the folks (Ma &
Miss Caranagh) at
Spirit Lake & went
to lake with them.

Mr. & Mrs. Cratty were in.
Mr. Cratty school
Carex Crawfordii from
Spirit Lake (like summit
C. sychrocephala) &
Carex acutiformis from
Emmett Co. (I saw
also in Iowa Falls)

Spent afternoon in visiting
& taking care of materials.

with Cratty, Miss Caranagh & Maxon

Aug. 7, Mon
Rained a little at night
In morning took class
to Eckhout & Spring
In afternoon went to
Cove & Gull Pt.
Found Wolffia very
abundant in Duchesne
marsh.

on Gull Pt: (Sand)
Asteriscus comata fl.
Artemisia ludoviciana
Spergularia cryptantha
Pentstemon grandiflorus (fr.)
Alyssum sp. (fr.)
Ambrosia leptophylla
Allium stellatum
Allium macrocarpum
Populus deltoides (1)
Amaranthus frutescens
Potentilla pentandra
Rhus glabra (introduced by 1
or Didymus)
Andropogon scoparium
Elymus — 2 or 3

Stipa spartea ²²
Cyperus schomburgkii
Poa ~~spartea~~ ^{capitata}
Salix longistylis ^{tr}
Spartina vestita ^H
Panicum brevifolium
Phragmites communis ^H
Lycopus rubellus ^H
Bidens frondosa ^{var}
Impatiens trifida
Salix v. longifolia
Erigeron canadensis
Salix cordata ^{tr}
Aquilegia vulgaris
Aquilegia (old fr.)

Found fine *Clavaria* in
 woods - see spec. & photo.

Aug. 8 - Tues.
 Crattys & Ella left at
 7 am. Spent A.M. in
 casing for material.
 P.M. went to Green Slough
 (by launch).
 Collected *Wolfia*. Also
Pyzonia on *Panicum arifolium*
 Photo 25. Shows E. side
 of Green Slough (Green) Slough,
 looking W. of S.
 Photo 26 - Looking N. along
 E. side of Green Slough
 along shore is *Veronica*
hastata - to right of
 gap is a lot of
Veronica stricta
 among them. especially
 between are the
 hybrids.
 Photo 13 - *Cirsium canescens*
 clump near Green Slough.
 Photo 4 - Green Slough
 from row.

Walked back to the Lab,
& spent evening in
earning for materials.

The day was quiet &
bright. Good
for photos.

Aug. 9 - Wed.

Spent morning in
getting materials,
for

Aug 10 - Thurs.

Rained at night.

In morning I gathered snail from under boards at pumping house & spring.

Had ride with Judge Judge Hutchinson to Escalante. Discussed legislation for lakes.

Had member of legislation

who promised aid.

afternoon, worked at plants, & the materials in Lab.

Dredged in the Bay at depth of 8 meters, got jar of ooze with diatoms.

Worked rest of time in Lab.

Aug 11 - Fri.

Went S of mail box

Gathered fine Eupatorium purp. & Aster umbellatus in swamp N. of mail box

Photo 21 Prairie S. of mail box, looking S. Meadow part is cut.

Photo 22 Similar - a little west.

Caught many frogs on upland prairie. They probably scatter out to feed.

Returned to care for materials.

Spent most of the remainder of the day at chipping drift, putting down materials, etc.

Found that Oregon mylar had not been straightened, &

much of it was ruined.
In afternoon I
asked Miss Maxwell
to work out prairie
plants in front of
Laboratory, for the
purpose of becoming
familiar with
plants of that type.

Towards evening a
storm came up from
S. & we put up
blinds in dormitory.
The night was
stormy and rainy.

Bob had gone off
to camp, and I
was left. He had
found marking of
cable by meters.

early am. showed Miss Maxwell woods prairie

Aug. 12 - 1916 - Sat.
Spent forenoon on 2nd Lookout
Collected seeds of *Castilleja*
seriflora & *Oxytropis*.
Former had little brown
beetles.

The prairie on Lookout
was cut for hay. The
second Lookout is still
intact.

Found fungi on *Psoralea*
esculenta & *Petalostem candidum*.
Collected *Halimolobos* *canadensis*
in fruit.

Afternoon - went to Cove &
Eull Pt.

Took photos of fairy ring of
Lepista leucogama.

Ring 15 ft. in diam.

There were about 140 fungi
& there about 35 were
fresh.

Neasley is an imperfect
ring of big puffballs (*Mycosclerolobus*)

probably 30 ft. in
diameter,

Photos 11 & 12 show
Sagittaria rough with
Wolffia in all between
short grasses (Calamagrostis,
Spartina, Carex vulpina,
etc.) & 'the sagittaria'
in water. Beyond
Sagittaria in deep water

The day was bright, but
very windy.

Collected materials on
Gull Pt. for pickling,
also seeds.

Returned & cared for
materials rest of afternoon
& evening.

The water was so rough
that at edges it was
muddy.

Aug. 13 Sunday

Spent forenoon in arranging
materials.

At 1 P.M. Max & Min Kussell of
states for head of lake. We
went to Arnold's Park first.
At W. Oshorn's a family was
making hay. Used a brick-
rake, with horses & ran
the stacker with a Ford!
Met Mr. Hanna.

Went by rail to Orem,
then via ^{the} Des Moines to
Arnold's Park. Then Oshorn
to Sun, Hayward's Bay,
Mantle & Muller's Bay.

Large crowd of many people
at Arnold's Park.
At drawbridge a long
line of autos waited on either
side while we went through.
Day cool & pleasant.

Aug. 15, Tues 1916

Spent part of AM in
bay & along canal

Found following on banks

along canal:

Zonitoides nitida

Vitrea humana

Limax conspurcator

Coelocopa laticornis

Buccina retusa

collected much plants.

In afternoon took

photos

Photo 29 - Boys' tents,

looking N.

Photo 30 - Boys' tents,

looking W. of N.

Photo 9 - Ewers' s. bank -

looking N.E.

Photo 10 - Ewers' N. bank,

looking NW.

Photo 11 - looking E. across

lab. & icehouse.

Photo 12 - looking N.E. at Dormitory

Miss Maxwell

Spent some time at spring
with Miss Maxwell.
Went in morning.

Aug. 16 - Wed

In forenoon went to canal
with Miss Caranagh &

Maxwell. Collected mollusks,

moss & parasitic fungi,

Mr & Mrs. Thonbi went
to Spirit Lake.

In afternoon went to
Hayward's Bay by Des

Moines, with Knobbs, French,

Whittle, Miss Caranagh, & Buchanan.

Collected moss, lichen, etc.

The day was hot & close.

The east side is drier

than west or W. side.

Returned from Dun &

Spent evening with Ewers

etc.

Took photos of Cedar trees, etc.

Aug. 17, Thurs. 1916

Stormed at night, - heavy rain.

Spent forenoon in arranging material, naming plants, etc.

In afternoon mat & I went to Arnold's Park & Welford.

Afternoon sunny & hot, - forenoon misty & cloudy.

We did a little shopping and then returned with Miss Holiday & Mr. Ewers by auto.

Spent evening at Ewers' with Armstrong & French.

A hot evening, Really uncomfortable in early part of evening.

Aug. 18 - Friday

Went to head of lake with Mr. French photos.

No. 11 - Ditcher - west of W. Okoboji

No. 12 - small beetle hole " " " "

crowded with *Phygadeuon Muhlbergii*

No. 9 - Looking at prairie knots

just N. of Edwards' looking W.

of S.

No. 90 - Kettle hole (scrub) E. of knots

N. end - planted trees

No. 31 - Near same swamp

2 muskrat homes

Pirakia esculenta breaks off
& whole plant is a "tumble
weed".

No. 32 - Looking a little E. of N

from road - prairie knots

above Edwards

No. 23 - Looking N. at swamp

just west of knots.

No. 24 - *Pirakia esculenta* - broken off

No. 2

No. 1 - Beach at Edwards, looking W.

no 15 - Edward's Beach - looking E.
no 16 - Acorn (bed) & Sycamore
(fore) - N. end.
no. 5 - Towards Edward's Beach
from Acorn swamp - N.E.
no. 6 - Looking N. across Calamin
& Sycamore swamp.
Row of trees in causeway of
boulders.
no. 25 - SW. across lower
Acorn swamp - cattle
no. 26 - NE across
lower Acorn swamp.
Walked in in time to
get dinner. Mr. Archer &
Mrs. White had called.
at 1 pm. took boat for
Arnold's Park with
Boat. Left Arnold's
Park at 2³⁰ & waited
at Mercer until 5⁴⁵
for train for Danborn
& Canton. Reached Canton
at 9 & put up at the Redolphe.

1916
Aug 19 Sat
Arose at 4³⁰ took breakfast
at RR & went to hills opposite.
The pasture strip which rises
gradually from the native
prairie just across river &
east of RR. has only a few
weeds left: Verbena stricta,
Ambrosia artemisiifolia, Griseb.
Euphorbia marginata, Taraxacum
(small) Blue grass, clover (oh)
all the plants here &
towards Best's Station
are stunted.

Worked near border near Best's
Station. Then took belt
about 40 ft below border.
Another about 80 ft below
border about 1/2 way between
border & bench below.

There are few lichens
 in the deep woods
 at about 100 ft below
 under a little opening
 had 3 main ones, a
 Canva & No. 11
 around it & on all ^{these} the
 lichen 'faced' the opening
 I made it about 140 ft
 from border to upper end of
 bench & this is about 40
 ft wide & slope here
 less abruptly
 then follows a more
 abrupt descent to
 bottomland.

Forest station: Juniperus

- ✓ Basswood
- ✓ Rubus ^{lamin.}
- ✓ Corylus
- ✓ Pappel
- ✓ Eupatorium
- ✓ Campoman
- ✓ Juniper

For comparison with upper
 one -

Symphoricarpos

Rubus

Bur oak

For transcription

Symphoricarpos

Bur oak

Eupatorium

2nd (middle station)

Rubus

^{Quercus} Canva

^{Ostrya} Basswood

^{Rubus} Basswood

Rubus

Symphoricarpos

Parts of station is too far
 down. Had to move it up

to within 25 ft. of border.
 Some bare plants which were

also below, those marked x were killed:

- x ^{Rubus} Rubus
- x ^{Rubus} Rubus
- x ^{Rubus} Rubus
- x ^{Rubus} Rubus

Raphanus virginianus
Aspatrum striatum
 x *Passiflora*
 x ^{Fraxinus} *Green ash*
Celtis
 x *Campylocarpus*
 x *Rudbeckia laciniata*
Impatiens pallida (darker)
Geranium sanguinale
Elymus sturatus
 The trees look ragged
 have winter loss
 x *Lactuca floridana*

For prairie & border
Euphorbia maculata
Symphoricarpos
Verbena stricta

Prairie near Port Jervis
Helianthus scaberrimus fl.
Cirsium canescens fl.
Elymus canadensis fr.
Eriogonum canadense fl.
Urtica dioica fl. & fr.
Hordeum jubatum fr.
Brauneria angustifolia fr.
Ambrosia artemisiifolia fl.
Grindelia squarrosa fl.
 10 *Sida calycata* fl.
Rosa fl.
Solidago nemoralis fl.
Solidago rigida fr.
Psittaculopsis fr.
Oenothera serotina fl.
Ambrosia trifida fl.
Linum sulcatum fl.
Eriogonum canadense fr.
Ampelis canescens fr.
 20 *Cnicus cylindricus* fr.
Hedysarum bipartitum fr.
Acta ptarmicoides fl.
 23 *Oenothera biennis* fl.

- 24 - *Parthenocissis*
Schizanthus (2) *seabra*
Petalotum purpureum fl.
Kuhnia macrocarpa L.
Oxytropis hirsuta fl.
Ceanothus ovatus fl.
Lachna (^{ludov.} ~~diff.~~ *pyramidalis*)
 30 - *Aster oblongifolius* L.
Eriogonum ramosissimum fl.
Arenaria patens var. fl.
Alchemilla stellata fl.
Melilotus officinalis fl.
 35 *Verbena stricta* fl. H.
Aster v. spizans L.
Alchemilla ludoviciana fl.
Aster laevis L.
Panicum fl.
 40 *Quercus macrocarpa* bord.
Euphorbia marginata fl.
Symphoricarpos occidentalis
Astragalus medialis fl.
 45 *Euphorbia* (small) fl.
Pseudis fl.
Potentilla *sp.* fl.
Chamaecrista fl.
Achillea millefolium fl.

- 49 - *Stamium* *reticulatum* fl.
 50 - *Synedra* *populnea* fl.
 51 - *Petalotum* *candidum* fl.
 52 - *Asclepias* *vesticillata* fl.
 A tree only at edge of just
 out, - showed 47 rings of
 growth diameter 1 ft
 from ground was a count
 7 in.

- On lower plain near
 the bridge:
 5 *Asclepias*
 1 *Andropogon furcatus*
 3 *Bouteloua curtipendula*
 6 *Stipa sp.*
 2 *Andropogon scoparius*
 4 *Panicum argyrum*
Cirsium *altissimum*
Helianthus perfoliatus
 " *laevis*
Lepidolobos *virginica*
Aster *ludoviciana*
Eriogonum *sp.*
Castilleja (^{ludov.} *pyramidalis*)
Astragalus *canadensis*
Helianthus *scaberrimus*

Pratincola
Helianthus
Prunella angustifolia
Aster v. laevis
Asclepias syriaca
Phlox pilularis
Rosa
Ranunculus mollis
Achillea millefolium
Compositae
Verbena stricta
Veronica perfoliata
Grindelia sp.
Elymus canadensis
Bromus angustifolius
Desmodium illinoense
Petalostemum purpureum
Delphinium
Helianthus scaberrimus
Quercus coccinea
Asclepias tuberosa
Astragalus caryocarpus
Asclepias tuberosa
Silene stellata
Desmodium illinoense

Acropteron
Asclepias
Euphorbia
Ornithoglossum

The last five are rather near border.

The grasses form the greater part of the vegetation. *Sorghastrum nutans*, *Andropogon furcatus*, *Panicum* and *Panicum virgatum* occur in large patches.

Stipa seemed to have been scattered all through.

The prairie rises gradually toward Boole's high point.

The plants on the flat part are more vigorous, those on hills are stunted.

Took train at 12:05 for Arnold's Park.

The day was cloudy in forenoon, but a strong hot wind made leaves at border wilt & curl, especially upper leaves of

Red elm, Green ash &
Basswood. Smaller
plants written as notes.

The afternoon was clear
and hot.

It rained a little
at Cavata this morning
& more night before last.
Went to Menus saw
a lot of *Helianthus*
occidentalis.

Aug. 20, Sun

Went most of day in arranging
& packing material.

In afternoon took photos

1 + 2 *Panicum virgatum* ^{S. of Pal}
also four of *Rhus glabra*
asleep.

Went in bathing.

The day was clear
and quiet, & hot.

In evening I wrote
letters & arranged
my papers.

Didn't get to bed
until about 2 o'clock
AM.

Aug. 21, Mon.
Windy & cloudy,
showered rain.

Blow a gale all
day & cleared up
only partly.

Went to head of lake
with Frank, Stronach,
Dick, Whittle &
Miss Maxwell.

Went to the prairie
N. of West Okoboji &
collected eggs on
Elymus, rusts, etc.

In the logs I found
fruiting Habermaria
leucophora, Liliun,
& flowering Gentiana
crinita. Latter also
in log just S. of
W. Okoboji.

Then worked along
rows of willows on
beach W. of

Edwards, & found
many lichens on the
willows (*Calix fragilis?*)
and mosses both on
willows & on sandy
ground.

Then dredged in slough
W. of Edwards & by
sweeping Lemna triovata
marsh I got a few
large Planorbis like other
a few Plan. eximius,
a good many Plan. alba,
& of Physa sayi (the
latter with spotted
animals) also a few
Amnicola.

By dredging on bottom
I got a few large
Mylaeum.
Returned after 4 PM.
Worked on material in the
evening.

Aug. 22 - Tues.

The day was cloudy & blustering in the morning. It had rained some at night.

Gave up trip to Spirit Lake & worked all day on material. Also made drying shelves.

The afternoon was clear but mostly windy, until evening which was comparatively calm.

It was cool all day. Most worked on fish you co. material.

Spent evening in arranging materials.

Aug. 23, Wed.

Day fairly clear, not very windy, warm.

Left at 7 AM for Orleans & took row boat & dredged (with French & Welsh.) Mine Carver & Maxwell worked along lake shore & Buchanan & Whittle did sweeping.

Dredged in Spirit Lake.

- no. 1 - Diatoms, etc. at a depth of 5 1/2 M. N. of Hotel Orleans
- no. 2 - Mollusks from no. 1.
- no. 3 - Vial - surface towing, near same place.
- no. 4 - Vial - surface farther North
- no. 5 - Diatoms - off Stony Pt. about 1/2 way across to west & a little North. 7 M. deep
- no. 6 - Surface towing - on way to no. 5
- no. 7 - Diatoms, etc. 7 M. about 1/2 way across W. of Stony Pt. also packages.

No. 8. Surface trace on
way to 7.
No. 9. Straight W., about
 $\frac{1}{4}$ way E. from W. side.
Depth 7 m.
No. 10. Sub. about 400 yds
E. of Temple Park
7 m.

No. 11 - N. W. of Orleans
6 m.

at the Des Moines
landing N. end of
Sassaparilla
obtained 3 vials of
Reverdin by
tossing from boat.

Returned to Orleans & took
Des Moines at 3³⁰

Aug. 24. Thurs.
a little windy cold
in morning. Day clear
& cool.

In morning went to Elm
Crest wood.

Collected parasitic fungi
& prairie plants in the
open bar oak woods E. of
canal.

Found Asplenium filix-ferum
in fine print. One plant.

Collected leaves stem &
acorn of scrub bar
oak E. of canal, about
 $3\frac{1}{2}$ ft. high.

Spent afternoon in caring
for materials.

Out up late.

Aug. 25, Fri. 1916

Calm, clear morning.

Night was cold.

Took photos:

Spring

Ambrosia tripartita

Black looking tree

White

Black looking tree

dark Yucca

Eden Ewers

Lab. looking NW

College SW

Started for Gas

Lake at 8³⁰

French, Miss Carver,

Maxwell, Hastings, &

Maider, Stromton,

Whittle, Jack

Buchanan

Became slightly

cloudy

Collected *Ascypha diaphana* —
mostly on very base of Nuphar
leaves & stem.

Collected lichen *Jungermannia* on E
side Lower Gas.

Photo 9 - looking SW (towards

valley) across lower end

of Lower Gas. Rude in foreground

Photo 10 - same.

Photo 15 - Looking NW

across Lower Gas

A threatening storm drove
us home. Rained a little.

Miss Carver found a

number of new moose, -

particularly on the southern-

most bank (wooded) near

outlet of Prairie Lake

entrance. It is very

here.

Stormed a little

when we got home.

Beautiful clouds - mostly

strat but in combination fine

appeared here.

Aug. 26 - Saturday
Spent forenoon in
caring for materials,
after taking Miss
Maxwell to Arnold's
Park in the launch.
A very cold morning,
the sunrise was beautiful.
In the afternoon went
to Arnold's Park on
the Des Moines & worked
along Upper 9th.
Found seeds & fungi &
Miss C. collected mosses.
Returned & took the
Des Moines. A German
American couple on board
had a boy of 5 or 6.
He misbehaved a little
& his mother in reprimand
truly said: "Was willst
der Kaiser sagen?"
She was evidently more
German than American.

Fell asleep after supper
Went to bed early, but
first viewed the
remarkable aurora
borealis. Sheet of light
shot out like from
huge search lights &
extended far south
of the zenith.
This was the finest
aurora I ever saw.
The wavering & shooting
out of streamers
were its most striking
characteristics, - aside
from its size & extent.
This is certainly
worth remembering.
The night was very
cold, - the coldest
we have had so far
up here during this
summer.

August 27, Sunday
morning cold. Later
cloudy. Late afternoon
clear & quiet, but
cool.

Spent the forenoon
in arranging materials.

Took dinner with the
Campfire girls.

Returned to my work,
and at 4 PM.

Talked to the Campfire
girls.

What do you see first, - good wood?
Cumberland Gap story.

Picking wild flowers.

Returned to my work.

Misses Maiden ^{Evans} & Hastings
left by auto.

Spent evening in
arranging materials, etc.

August 28, Monday
Took row boats down canal
to Emmons Bay.

Towed & got vial A - across
Miller's Bay.

Vial B - Upper end of Canal, around
first turn.

Vial C - about $\frac{1}{4}$ way down

Vial D - Near open water near lower
end of "loop" in canal.

Vial E - Open brown water in
canal below loop.

Vials (2) F - In swamp off canal
below loop.

Vial G - Outlet of canal into
swamps at lower end, &

part of swamp near
Vial H - Towing from Cove to
Elm Creek - surface

Bottle I - Surface towing near
shore - Elm Creek

Bottle J - Surface towing near
shore - Elm Creek

Vial K - Scraped from granite
boulders - Elm Creek

Vial L. Toward near shore
Elm Creek to Wab's cottage,
surface.

Vial M. Toward, surface,
to our dock.

Returned to care for
materials.

Miss Conway got some
good worms at Elm Creek.

The day turned out
very windy and it was
fortunate that we did
not try to dredge. We
rowed to the Crescent by
canal & returned around
Gull Point. Pretty rough!

Found a weevil in sheaves
of *Scirpus plumosus* &
another (larger) in reeds of
Juncus verrucosus. Gave them
to Buchanan.

Aug. 29, Tues.

The day opened quiet & cool.
Later a breeze came up
and blew (not strong)
all day.

Spent forenoon in pursuing
plants & arranging material.
Took the Des Moines, with
French & Whittle, to Arnold's
Park & walked down track
to Milford. Collected
ants on my big Camp,
Calamagrostis canadensis, &
Juncus or *Limonium* *umbellatum*,
Leptodermis leptostachya, etc.
Helianthus maximiliani
is in full bloom.

Also from *Scirpus auriculatus*
in prairie (rather flat) along
R.R. south of Arnold's Park
walked to Milford, then to
Pocahontas Pt. & home.

Collected on little frame W. of
Green Slough

Aug. 30. Wed

Started at 9 am. For
the Little Sioux

French wanted to leave at
7 but boat did not leave,
we (Whittet & I) walked
along prairie just N. of
Crescent Dam.

Gathered seeds, etc.

Took photos:

No. 15 Looking E. toward
Crescent Dam. Foreground
cut prairie. Back prairie.

No. 16 Looking to. from
same point across
cut prairie.

Just opp. stack is a
dry turtle hole.

Photo 9 - Pasture with
only *Solidago rigida* left
Snap

Photo 10 Home, young group, etc.
in NW. cor. SW $\frac{1}{4}$ NW $\frac{1}{4}$

see 34

Photo 29 - Home & barn in
NW. cor. SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 33

Photo 30 - same as (10)

Photo 7 - Looking N. of W. across
Little Sioux, diagonally across
line $\frac{1}{4}$ mi. south of ^{the} line
of sec. 33

Photo 8 - Looking NW. from same
point.

Photo 31 - Looking S. E.

" 32 - " SW

from line $\frac{1}{4}$ down from
N. side of 33, etc

Photo 25 - S. down middle of
valley, from same point

Photo 26 - Looking S. E. from
near E. SW $\frac{1}{4}$ sec. line -

Photo 5 - same

" 6 - Looking SW. from same point

" 3 - same as (6)

" 4 - bunch of trees, etc.

" 1 - Looking N. from near bridge
(spoiled)

" 11 - Almost same as (1)

Hillside bog at Luce

Eupatorium purpureum
" perfoliatum
Sollertia appulgent
Najas discolor
Helianthus grosseserratus
Scirpus atrovirens
Meadow Rue *Bizania cymatocarpa*
Silybum lappaceum
Solidago canadensis
S. anglica
Cirsium arvense
Solidago verticillata
Thymus anglicus
Rudbeckia laciniata
Glyceria grandis
Aster latifolius
Zizia aurea
Aster umbellatus
Sharp grass
Thalictrum flavum
Hesperis matronalis
Rumex (like wraps)

Carex
Impatiens capensis
Epilobium
Lycopodium obscurum
Helminthophila
Verbena hastata
Agrostis alba
Ryegrass
Panicum capillare

Photo - Hillside bog, looking SW.

Photo 12 - W. end of road below
Hillside bog
Looking S.

Photo 23 - Looking down the
road - S. slope timber
W. slope prairie

Photo 24 - Looking E. - gutter
slope from SW. near
cement bridge

Photo 25 - Looking SE. toward
Big Top

Photo 26 - Looking SW. from
same point
walked home

Aug. 31, 1916. Fri

Took photos around Lab.
In afternoon rowed
Whittle to Arnold's
Park & I then rowed
to Lower Gas Lake &
collected many *Ancylos*
diaphanous, - nearly all
on very base of stem
& petioles of Nuphar,
& also about 300
Ancylos parallelus, -
nearly all farther up
on petioles & stems
of same plants.
Returned (towed by
Des Moines from Choboy)
& arranged & packed
material. Was
up all night, & barely
finished packing.

Sep. 1st
Drove away at 8⁰⁷
am., & young Livingston
got us to Montgomery
in time for train
(due 8¹² - came 9¹²)
Shipped stuff &
Miss Cunningham, Michigan
& I took train.
Hot & crowded.
Got home at 8²⁰
PM., safe.

Oct. 13 - Friday 1916

Left Iowa City at 8³⁰ pm
for Davenport (fare \$1.08)

Then, at 10⁵⁰ got train for
Massena (fare 51 ct)

Young + Bert had gone
ahead.

U

Started N. along road
from Mayfield

Q. big oak (Red?) on
E. side road, near home,
30 in in diam. Low,
branching

See acorn & leaves, No. 1

Oak 2, W. side of road
also low, somewhat
smaller, ^{about 20 in} similar
See low & acorn

Oak 3 - in *Q. velutina*
with 4 trunks united at
base, low, spreading,
trunks 12-18 in
See low & acorn. This
is at S. edge of grove,
see low & acorn

Oak 4 is of the broad
black oak type.

Oak 5 - *Q. velutina*
see low & acorn

Oak 6 is on E. side of road
at entrance to Jos. M. Huber's
house, - at shed.

See low & acorn

Large also, - over 1 ft (1 1/2?)

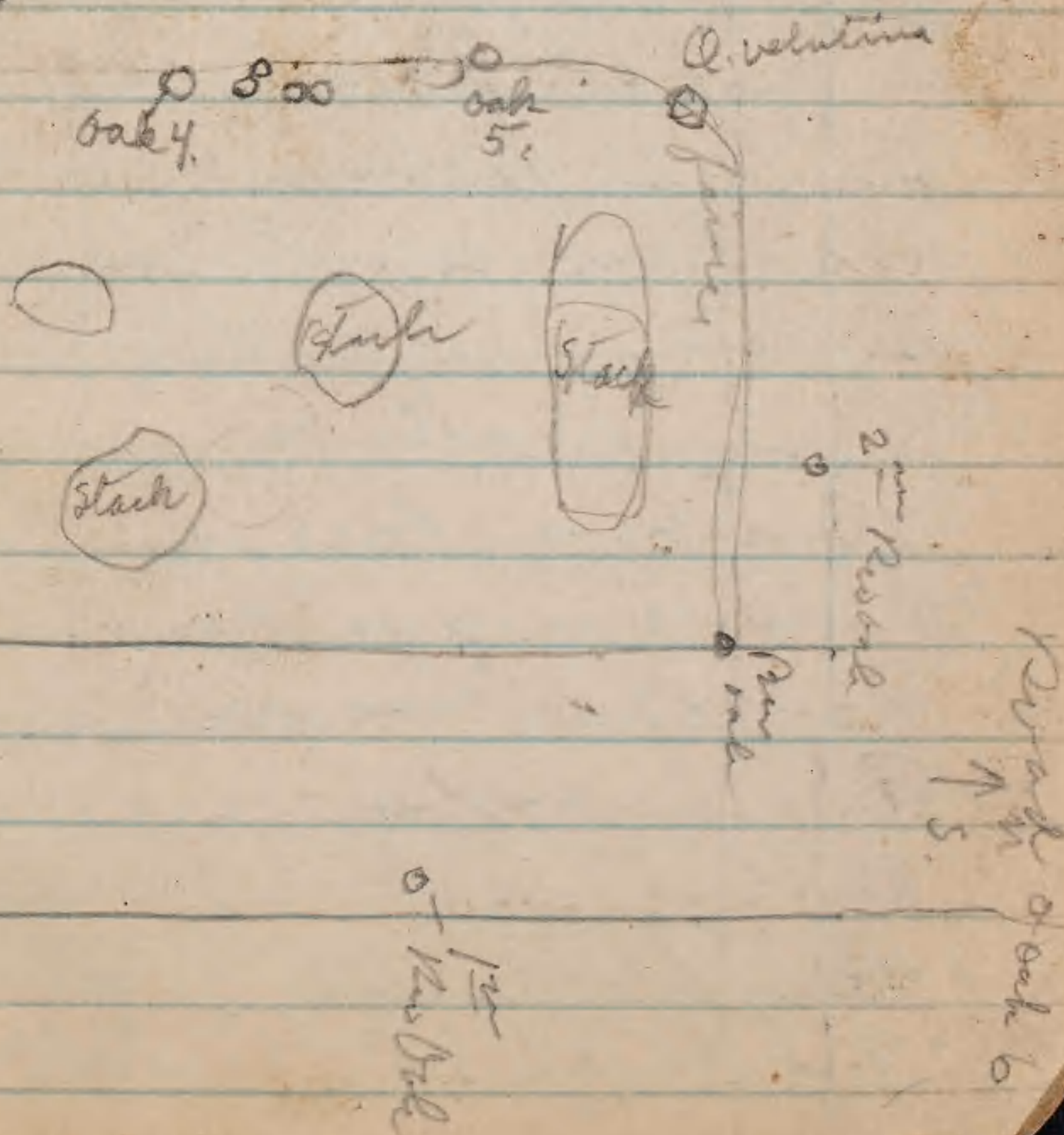
Photo 3 - oak (1)

" 4 - looking N.E. - old dunes

Photo 25 - Old dune - looking W.

Oak 3

Other *Q. velutina*
oaks all
through here -
large, low



Old dunes, Mt. of Buzzards

- ✓ Euphorbia corollata
- ✓ Helianthus scaberrimus
- ✓ Panicum subnigrum
- ✓ " virgatum
- Lespedeza capitata
- ✓ Andropogon scoparius
- ✓ " furcatus
- ✓ Solidago nemoralis
- ✓ Ambrosia psilostachya
- ✓ Liatris scariosa
- ✓ Aster multiflorus v. exiguus
- ✓ Phytolacca pruriens
- ✓ Erigeron pectinatus v. spicatus
- ✓ Cereus carolinianus
- ✓ Euphorbia corollata
- ✓ Rosa pratincola
- ✓ Onoclea biennis
- ✓ Kalimeris eupatorioides v. corymbosa
- ✓ Xanthoxylum commune? (?)
- ✓ Poa compressa
- ✓ Crataegus capitata
- ✓ Carex cephalophora
- ✓ Penstemon rhombifolius

- ✓ Erigeron canadensis
- ✓ Asclepias verticillata
- ✓ Gnaphalium polycephalum
- ✓ Trifolium virginicum
- ✓ Coreopsis palmata
- ✓ Helianthus major
- ✓ Cassia chamaecrista
- ✓ Lithospermum Gmelini
- ✓ Hedysarum hispidum
- ✓ Artemisia racemosa
- ✓ Polygonum tenue
- ✓ Chenopodium leptophyllum
- ✓ Petalostemum sylvaticum
- ✓ Liriodendron tulipifera
- ✓ Desmodium canadense
- ✓ Artemisia canadensis
- ✓ Erigeron canadensis
- ✓ Stachys palustris
- ✓ Helianthus grosseserratus (dy)
- ✓ Achillea millefolium
- ✓ Polygonum commune
- ✓ Sida acuta
- ✓ Liatris pycnostachya
- ✓ Solidago speciosa v. angustata

- ✓ *Lachnophora pinnata*
- ✓ *Solidago graminifolia*
- ✓ *Ceanothus americanus*
- ✓ *Sorghastrum nutans*
- ✓ *Mulleum verticillatum*
- ✓ *Rudbeckia ^{no} hirta*
- ✓ *Schizanthus lappula*
- ✓ *Artemisia ludoviciana*
- ✓ *Achillea millefolium*
- ✓ *Cypripedium acaule*
- ✓ *Platanus graveolens*
- ✓ *Morone punctata*
- ✓ *Verbena stricta*

56 4.

Photo 26 - Looking NW
Rhus trilobata on oak
 inner bark
 in bark,

Photo - *Mulleum verticillatum*

Photo 33 " "

(off Interurban)
Stewart, along Muddy Run

May 5, 1917

Bright, but cool, after
week of dusk, now, rain.
along sandy edge

Quercus velutina

" *macrocarpa* (few)

Rhus copallina

Rubus

(*Rubus*?) with *Fragaria*?

Prunella

Acer glabrum *Fragaria virginiana*
Acer rubrum *Acer rubrum*

Vitis cuneata *Rhus glabra*

Dryopteris *Acer rubrum*

Erythronium *Ground Hog* *Glechoma*

Claytonia *Carex pennsylvanica*

Polygonum sanguinale - on black oak sticks

Lythrum hyssagifolium - wild cherry

Antennaria plantaginifolia - Red Oak

Vernation

Straight

Brown Dog *his* *catnip*

Mullein *Phlox divaricata*

Monarda *Salix humilis*

Hedeoma pulegioides

Galium
Arenaria latifolia

Inflexed

May apple (convolute)
Oralis (conduplicate) *fructu*

Conduplicate *Red Clover* (flat)

Prunus cerasus - *Am Elm*

Plantago major *Crab*

Rosa (*pratincola*?)
Strawberry (conduplicate plicate)

arbuta " "

Prunus serotina
Sederling (conduplicate)

Plicate *Potentilla canadensis*

Raspberry (conduplicate & plicate)

Cornus (plicate) *hoochery* - *Involute-plicate*

Box Elder *Golden currant* (=)

Burdock (plicate) *Soft maple* - *Lophoceros pinnata*

Cirsium - *Crataegus mollis*

Rubus occidentalis
Ribes gracile *Hicoria*

Hazel

Circinate
Cyrtopuntia fragilis
Asplenium filix-ferre

Convolute

Rumex

Aster Drummondii

Urtica grandiflora

Involute *Viburnum lentago*

Salix fragilis

Antennaria nodosa

Pie plant

Lactuca?

Sapronia aff.

Salix discolor

Aster v. exiguus

Viola cucullata

Prunus americana

Lonicera (red)

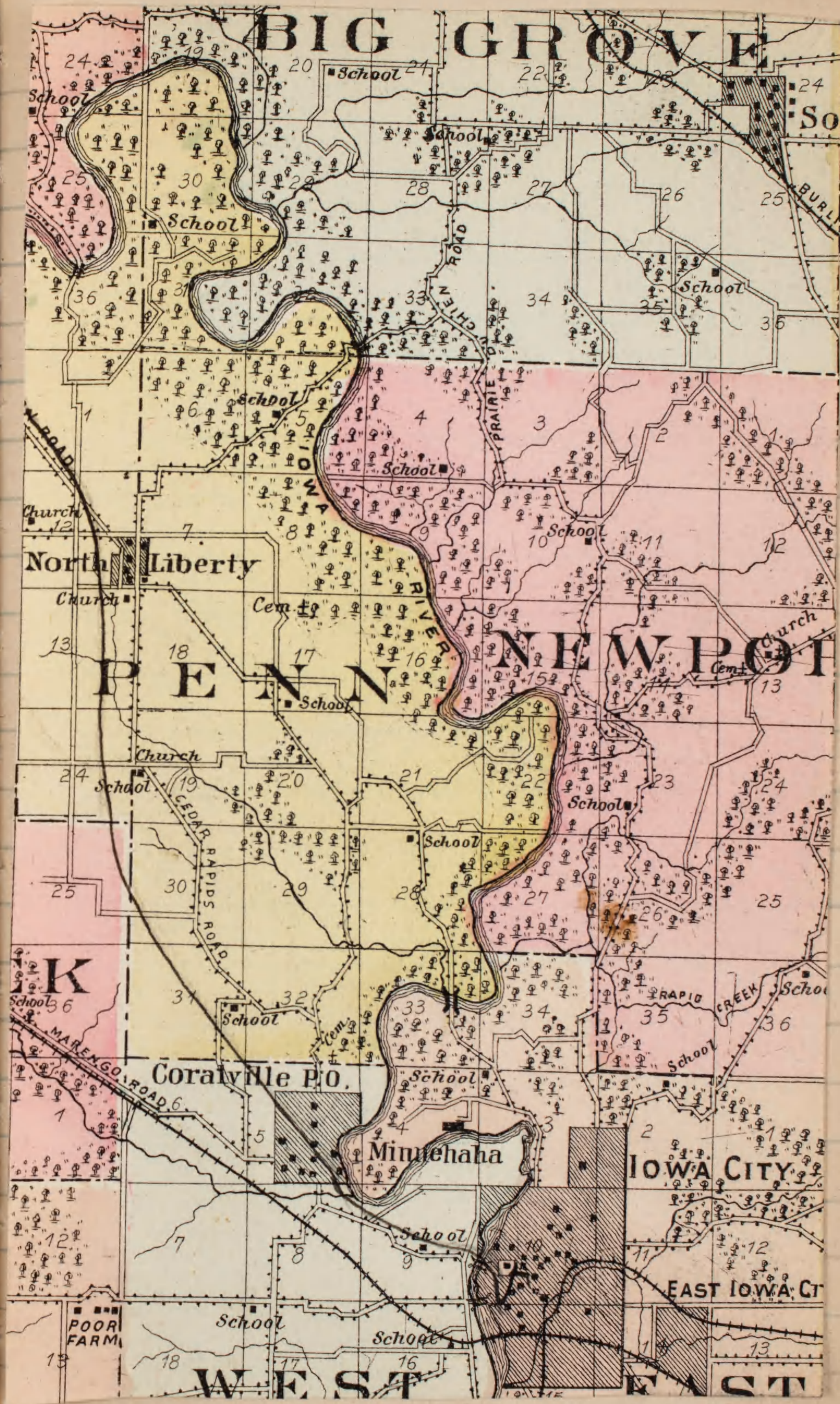
Senecio platensis

Erigeron phillyria

Revolute

Imbricate

Valvate



Civitate

Valvate

Sandy soil

Helianthus scaberrimus

Theridopsis canadensis

Mullein

Ambrosia artemisiifolia

Tagetes virginiana

Aschillea

Antennaria canadensis (?)

Carex pennsylvanica

June 1, 1917

Went out to prairie along
R.R. E. of Iowa City

Found in flower:

Phlox pilosa albiflora

Lithospermum canum

Comandra umbellata

Sisyrinchium campetris

5 *Hypoxis hirsuta*

Poa pratensis

Viola pedatifida, - mostly fruit.

Ranunculus macconnii - wet.

Senecio platensis

10 *Scrophularia leporella*

Heulandias hirsuta

Opalis violacea

Sisyrinchium canescens

Ellisia mytilica

15 *Pedicularis canadensis*

Potentilla canadensis

Anemone cylindrica - just beginning

FIRST CLASS.

P.L.

RETURN AFTER FIVE DAYS TO

Mrs. Bertha Melleker

Instructor District No. 15

Wellman, Iowa

Trip to Crete, etc. 1918	
Taxi, Iowa City	\$.25
RR. to Omaha	6.56
Pullman	1.50
Breakfast, Dinner	1.15
RR. to Crete	1.50
RR. Lincoln to Omaha	1.10
Aug ²⁷ RR to Blair	.80
Breakfast - Blair	.50
Lunch	.30
Supper Blair (dinner)	.50
RR to Omaha	.50
RR to Hamburg	1.02
Car fare Co. Bluffs	.10

Aug. 26, 1917 - Sunday
Left Iowa City at 12⁰⁵ am
for Omaha & Crete.

at Omaha changed to
B & M. Found Kutak & Mik
going, & at Lincoln
Pursell was on train.

Reached Crete at
12³⁰ Met Gen. Hastings
(the Dean's brother), Mayor
John Tully & later,
Chancellor Avery

The crowd was very large
and very good-natured and
well behaved. Several
remarks on the improvement
since liquor has been
prohibited.

The program was
long and tedious, and
I got through about
6³⁰ The crowd
diminished very much,
went to Lincoln with Chancellor Avery, Pursh
Kutak & Mik.

I spent the night
at Mrs. ...
I got up at 5:30^{am} & left
quietly

1917
Aug. 27. Monday

Went to Blair from
Webster str. station

4 mi. N. of Florence
we passed the Withaway
farm where Mrs. Withaway
was murdered by a negro.
Reached Blair at about
7:30 & took breakfast
at the Clifton Hotel.

Walked to Blair bridge.
The watchman wanted to know
all about me. He said that
at night a deputy sheriff
& two guards watch
the bridge -
I walked across.

Sand along road on flat
Sporobolus cryptandrus
Panicum ringletii
" capillare
Stipa glauca
Cymbopogon aculeatus

Dunes among cottonwoods (some
4-6 in diam.)

Cassia chamaecrista - dominant	
Lycopodium rotundifolium	Verbena stricta
Eragrostis fine grass	Stropholobos helianthoides
Grindelia squarrosa	Ranunculus
Penstemon	Crotalaria
Sporobolus cryptandrus	Euphorbia (juv)
Muhlenbergia	" (42ms)
Chenopodium	Rhus glabra
Orthocentrus	Panicum scribneri

<i>Polygonum</i>	<i>Cornus paniculata</i>
<i>Setaria viridis</i>	<i>Lactuca ludovici (juv)</i>
<i>Euphorbia maculata</i>	<i>Asclepias</i>
<i>Lepidium apetalum</i>	<i>Cyperus helimifolius</i>
<i>Xanthoxylum</i>	<i>Rhus toxicaria</i>
<i>Hedeoma</i>	<i>Elymus canadensis</i>
<i>Desmodium canadense</i>	<i>Aster</i>
<i>Panicum capillare</i>	<i>Kuhnia</i>
<i>Witchgrass</i>	<i>Petalostemum purpureum</i>
	<i>Chenopodium</i>

Most of the dunes & also
flatter plain (except very low)
are covered with *Cassia*
chamaecrista - mostly in bloom,
some very old.

An occasional fresh dune
has *Cassia chamaecrista* or
in some *Apocynum* 'cristatum'
or in one *Cucumis* - but
first look fast species.

The dune with dying willow
now has none. It is more
or less covered with *Cassia*
& grass (fine ones)

My big smooth *Artemisia* is also
somewhat common.

Very little loose sand appears.
The big cottonwood in old wood,
measures better than 2 ft in
some cases.

On flatter ground

Rosa -

Asclepias verticillata

~~*Chenopodium*~~

Erigeron -

Gerardia tenuifolia

The other dunes in some
places are covered with
Cornus.

There is very little
loose, shifting sand. The
most seasons since 1909
seem to have produced
a marked effect, and
vegetation has developed.

The most striking feature
of the vegetation is the
great predominance of
Cassia chamaecrista. Two
crops seem to be in evidence,
one brown and dead (mostly
on the larger dunes) and

another fresh & flowering
On only a few dunes
in the sandbar common.
I found a "real willow"
out on flat.

The flat between the
dunes and river is quite
wide (must be nearly a mile)
and is not very sandy, but
more like the characteristic bar
mud (somewhat sandy) of
the Missouri.

This flat probably furnishes
the sand for the dunes.
Dense growth on it prevents
new dunes from forming.
Cottonwoods have also
been planted, - clumps in
rows parallel to road,
and this has had its
effect in checking new
dunes. Altogether the
transformation is very
striking.

Walked back to Blair,
noting incidentally the
low, broad (almost dome like)
bench of loess which
irregularly extends to
Blair. Several cuts
in RR show laminations
some nodules & a few
fragments of shells. (Did
not examine closely this
time).

went to the Clifton Hotel,
had supper & left for
Omaha at 6¹⁵ (really 6³⁰)

On reaching Omaha
took car for Cornish
Bluffs.

Pressed plants at
C & O depot, & left
at 11³⁰ for Hamburg.
Reached Hamburg at
1³⁰ AM & put up at the
Julien Hotel.

Aug. 28 / 1917 Tues.
arrived at 8 am!

Went up on ridge at Hamburg.
The top is too well
occupied by *Salsoia* grass,
Melilotus alba & *Setaria*
viridis.

On slope going up I found
Euphorbia heterophylla (in bank)
Syntherisma racemosa (rust) "
Near top of ridge, between
water reservoir & point the
following were noted:

Spiza in fr.
Melilotus alba - old - common
Helianthus annuus, fl. not many
Setaria viridis fr. common
Galium hali fl. & fr. common
Liatris punctata - some - buds
Bouteloua racemosa - very common
Elymus virginicus some, fr.
Veronica novboracensis - fl. few
Forficula fl. "

10 *Solidago speciosa* var. yellowish, fr.

Euphorbia marginata - several fl.
Aster sp. fl. not many
Lycopodium complanatum - common fl. fr.
Solidago ^(var. *serotina*?) narrow lvs - buds fr.

Chenopodium - some buds
Aster multiflorus - small some
Solidago canadensis buds - a little lower

Towards edge of ^{on slopes} thicket

Monarda virginica - fl. com. on top
Composita artemisiifolia fl. not rare

20 *Aristida bairdiana* fl. - common

Panicum capillare (fl.) few

Helianthus scaberrimus fl. few

Cirsium (dis. *altissimum*?) fl. - few

Verbena stricta - fl. few

Ceanothus ovata fl. several

Prunella virginica buds "

Verbena cuscutifolia buds "

Polypodium virginicum - fl. well up l.

Houstonia missouriensis few fr.

30 *Bouteloua curvata* few fls.

Large grass - mts. fr. 3 clumps

Hedeoma pulegioides old fr.

33 *Petalostemum purpureum* fr. few

34 - Euphorbia - small - fl. 1

35 - Euphorbia - on top fl. ^{Rock} ^{common}

36 - Ambrosia pedunculata fl. - ^{very}
in say N. - still high, but
just n^o of reservoir added:

- Anaphalis comosa - fr.
- Euphorbia occidentalis - fr.
- Achyrocline satureioides - fr.
- Mimosa mollis - fr.
- Rhus glabra - fr.
- Rosa - fr.
- Asclepias verticillata - fl.
- (Ambrosia pedunculata)
- Sparganium - fl.

At marriage N. added

- Gerardia aspera - fr. - fl. ^{very}
- Andropogon scoparium - fr. ^{very} ^{common}
- Aster laevis - fr. - ^{very} ^{common}
- Equisetum hyemale - several
- Asclepias tuberosa - fr. ^{very} ^{common}
- Monarda hirsuta - fl. " "
- Solidago nemoralis " " "
- Dalea - " " "
- Oxytropis - fr. " "

- Lactuca scariola - 1 - fl. - ^{several}
- Ruellia ciliosa - 1 - fl. ^{several}
- Erigeron canadensis (straw) fl. few
- Oxytropis occidentalis - fr. ^{several}
- Solidago rigida - fl. ^{several}
- Petalostemum candidum fr. "

(60) Castilleja sessiliflora - fr. - ^{very} ^{common}
a little dry, less small
just before reaching highest high
N. (N. of beach where), by
no means the highest point
here, has the following
very xerophytic flora:

- Solidago nemoralis
- Verbena stricta
- Dalea -
- Euphorbia maculata
- Petalostemum curtipendula
- " " ^{very} ^{common}
- Solidago nemoralis
- Lactuca scariola
- Oxytropis latifolia
- Astragalus -
- Gerardia aspera
- Aristida hirsuta (fr.)
- Melilotus alba (fr.)
- Castilleja sessiliflora
- Euphorbia occidentalis

Veronica serotina Sw.

Adapted on high ridge - north

61 *Cornus canadensis* 1 stands fl
(minor)

Veronica bartramia

Taraxacum

Scleranthus scaberrimus

Erigeron annuus

Gynandia polycephala

Verbascum

Rumex crispus

Ranunculus

Oxalis stricta

Tenoreum canadense

Linum sulcatum

Cassia maritima

Rubus odoratus

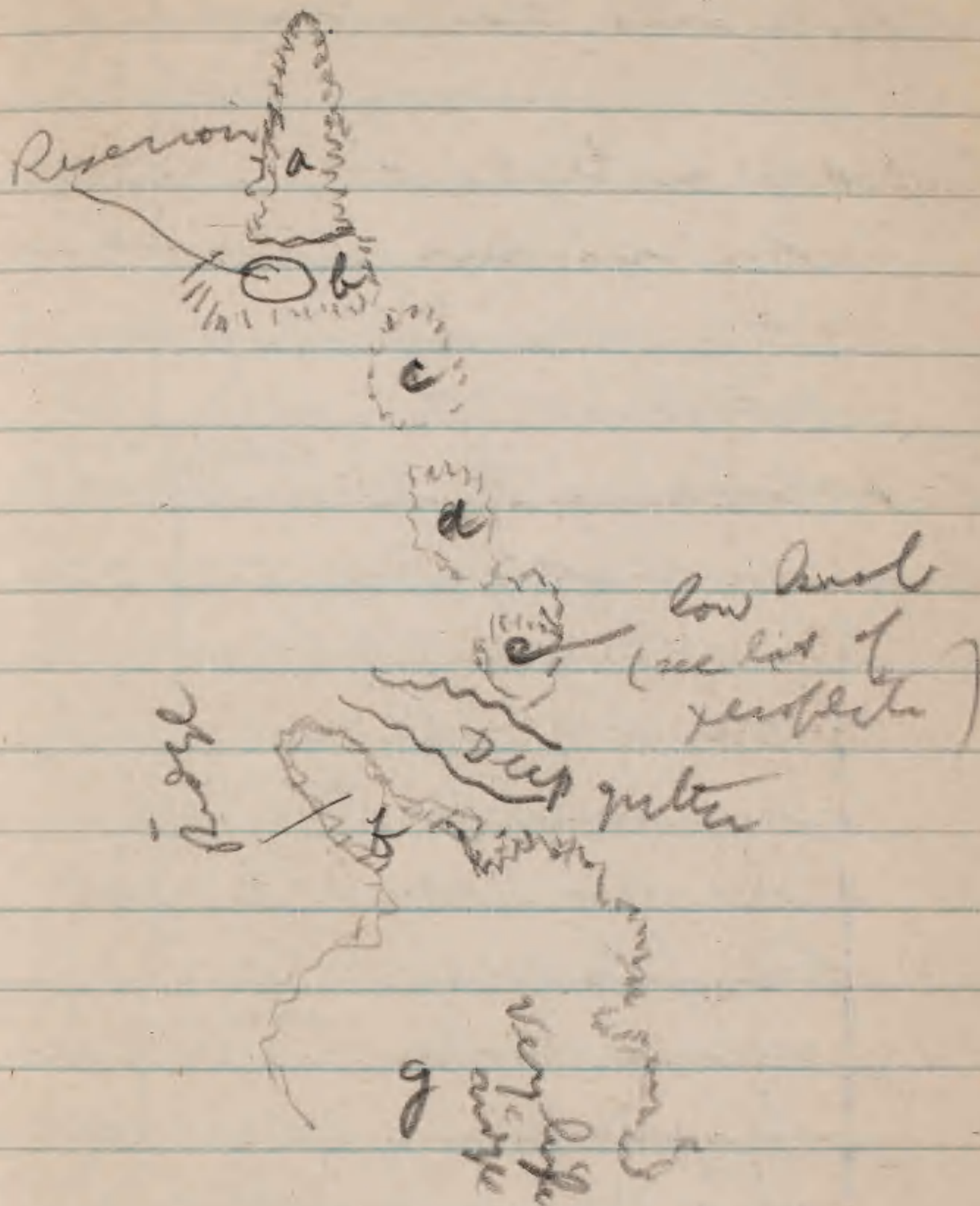
Plantago aristata

on (b)

Alphitonia integrifolia

Desmanthus biocladus

S
↑
N



a - sharp, narrow ridge at end -
b - lower flat part (mostly
excavated?), which has reservoir
c, d & e are part of a lower
ridge running down from c
to d. c is a shade lower
than b.

f is ridge running down
towards d-e

g. is a high top level
of bluff running from
N. a little west.

Solidago minor was
very common (in flower)
on this

Walked along this high top &

found following:

Solidago minor, fl. very common
Verbena stricta fl. & fr. quite
Ambrosia artemisiifolia fl. - ^{very abundant locally - (fruit)} rather common
Bartelera cuneifolia - fl. ^{very} common
Liatris punctata - bud - "
Kuhnia eupatorioides - bud - not "
Helianthus scaberrimus - bud - common
Astragalus - low - fr. rather common
Solidago nemoralis - fl. quite "
Horsenia angustifolia fr. (a few fl.) ^{rather} common
Cassia vesicaria - lf. - occasional
Euphorbia - small smooth - fl. ^{few}
Melilotus alba - fl. ^{very abundant} not rare ^(locally)
Andropogon scoparius - bud - common
Panicum capillare - fl. - few
Bartelera hirsuta fl. - frequent

Lycopodium junceum - fl. - frequent
Euphorbia rugosa - fl. - scattered
Salvia - fl. - scattered
Hedeoma pinnatifidum (dry) - few
Yucca arborescens fr. - scattered
Rhus glabra - lf. mostly lower (few)
Zaraxium
Dandelion - fl. - scattered
Solanum rostratum - fl. - scattered
Erigeron canadensis - fl. scattered
Delphinium viridiflorum - fl. scattered
Ambrosia parviflora fl. - common
(moss) - fr. few
Verbena bracteata - fl. - few
Philadelphus - lf. - scattered - few
Dioscorea perfoliata - bud - some
Helianthus annuus fl. ^{scattered} scattered
Rumex crispus (2) fr. 1 - should
Quercus - fl. - few
Compositae - ^{com. on N. slope} on N. slope
Ammophila canescens - fr. ^{near top} few
Andropogon furcatus - on N. slope
Salvia hirsuta - scattered
Oralis stricta fr. scattered
Ceanothus ovatus lf. ^{common} common N. slope
Euphorbia purpurea - fl. - scattered
" - fl. - com. small

Aster-like *Caninum* (?) - fl. - seen
Senecio *canadensis* - fl. - edge fields
Cenchrus - fr. " "

Ornithoglossum *versatile* - fl. - scattered

Linum *catenatum* - fl. - very

Cacalia *torreyana*

Rubus *hirsutus* - fl. - scattered

Plantago *virginica* - fr. - local

This upper part is much

pastured, & locally weeds like

Aster *acuminatus* - A. *perfoliatus*,

Euphorbia *marginata*, *Dryopteris*

Pappus (barren spots) taken

common.

Melilotus *alba* & *Ambrosia*
artemisiifolia (A. *perfoliatus* less

so) are badly killed in

open. In little gulches

they are better.

Native plants are fewer.

Euphorbia - & *Senecio*

considerable are also killed

in the open.

Corn runs up from No. 9

is stunted at edge at top.

See few stunted *Cassia*

in pasture - at top)

On the very point of (g) *Verbena*
strucka is wilted (leaves drawn
up to stem)

Went down along (f)

and saw:

Helianthus *argenteus* - fl.

Asclepias *verticillata* - fl. common

Desmanthus *virginicus* - fr. - small

The day was dry & windy,
though the wind was odd.

I returned to the hotel

& waited for my train -

3:50 PM

The bluffs show up finely.

The timber is in valleys

& pockets, except where

orchards are planted.

There around the first big

bed in bluffs is a crescent

with hopes trees covered

much of the way. Beyond that

The front is again ^{treeless}.
Parts of the bluff between
Pacific Jc & the station
with all lower, less
deep & not forested on
the face.

Above Pacific Jc the
bluffs are quite woody
for a distance. Then a
break, - a valley, - &
more woods.

Then the RR. comes close
to bluffs, which are steep,
mostly bare on face, with
wooded valleys. This is
just before 1st station N. of
Pacific Jc.

This little station looks
good, both woods & bare bluffs.

Muscatine, Nov. 16, 1917.

Left Iowa City at 2⁴⁴ PM,
+ reached Muscatine at 4³⁰
via Wilton. Put up at
the Hotel Muscatine.

In the evening I spoke
to a good audience at
the Public Library, Miss
Chapman presented me
for the Ethics club.

Talked 1 1/2 hours.

RR. .84 05

Subber .75 To Boyfield .16

Hotel 2.00 To Iowa City

Breakfast .60

Porter .15

4.34

84

5.18

1.00 new crown

6.18.

1917.

Nov. 17 - Bayfield.

Outline of my talk.

Changes in 3 yrs. - aologies

3 yrs ago - none now.

Show those who are ^{of the Kahn} German
situation in Europe.

German duplicity - & disregard
of rights

Austria -

Why we are at war.

Sinking French, loss of
our 200 lives

Bombs

Intrigue - Mexico, etc

Dumb

Fight for Democracy.

Applause continued long, - and as
an encore,

Met Miss Hudson; Senator &

Miss Titus (McIntosh) were
present.

1919

Trip to Okoboji - May 11-12-

Left at 9⁴⁵ AM for Cedar Rapids
with Mr. Fisk. Left on
Rock Island at 11⁰⁵ AM
for Montgomery.

May 12 - Cepha Livingston
met us at Montgomery &
drove to Lab.

But only show small leaves
& very young catkins.

Flowers everywhere very few.
Anemone in fine flower on
bank. Few Viola (hairy)
in grove near mine's closet.

Agropyron is in bud on
banks.

The Lookout showed a good
many Anemone ^{neglecta} ~~retrofracta~~
in fine flower, a very few
Anemone patens & Astragalus
caryocarpus, & quite a lot
of Carex (is it pennsylvanica or
Tetaria v. Mackii?)

Okoboji May 12, 1919

Tools in box over

Wart puller

Square

2 saws -

Chisel -

Wrench

Shears -

Screw knife

Stone for scythe

Saddle

Plane -

Pinch bar

In Livingston's yard I found
a few small Carex stendophylla
in flower.

On the drive to Cepha's farm
& Milford saw very few
flowers. This is a poor year
for Anemone patens & Astragalus

carystus.

Left Milford at about
3:20 PM for Spirit Lake.
At Arnold's Park found
Menyanthes grandiflora just
in good flower, with
leaves small.

Left Spirit Lake at
4:23 PM.

Along RR on flat
Wisconsin plain are rather
few flowers. Some good
patches of *Pedicularis canadensis*,
a very few *Lithospermum*
canadense, a few *Viola*
pedatifida, some *Antennaria*.
On the whole very scant.

Trip to Des Moines & Gowie
May 15, 1919 left at
4³⁵ am,

about 5 min. ride W.
of Grinnell, on N. side,
is a patch of prairie (?)
with *Viola pedatifida* (?) and
Pedicularis canadensis,

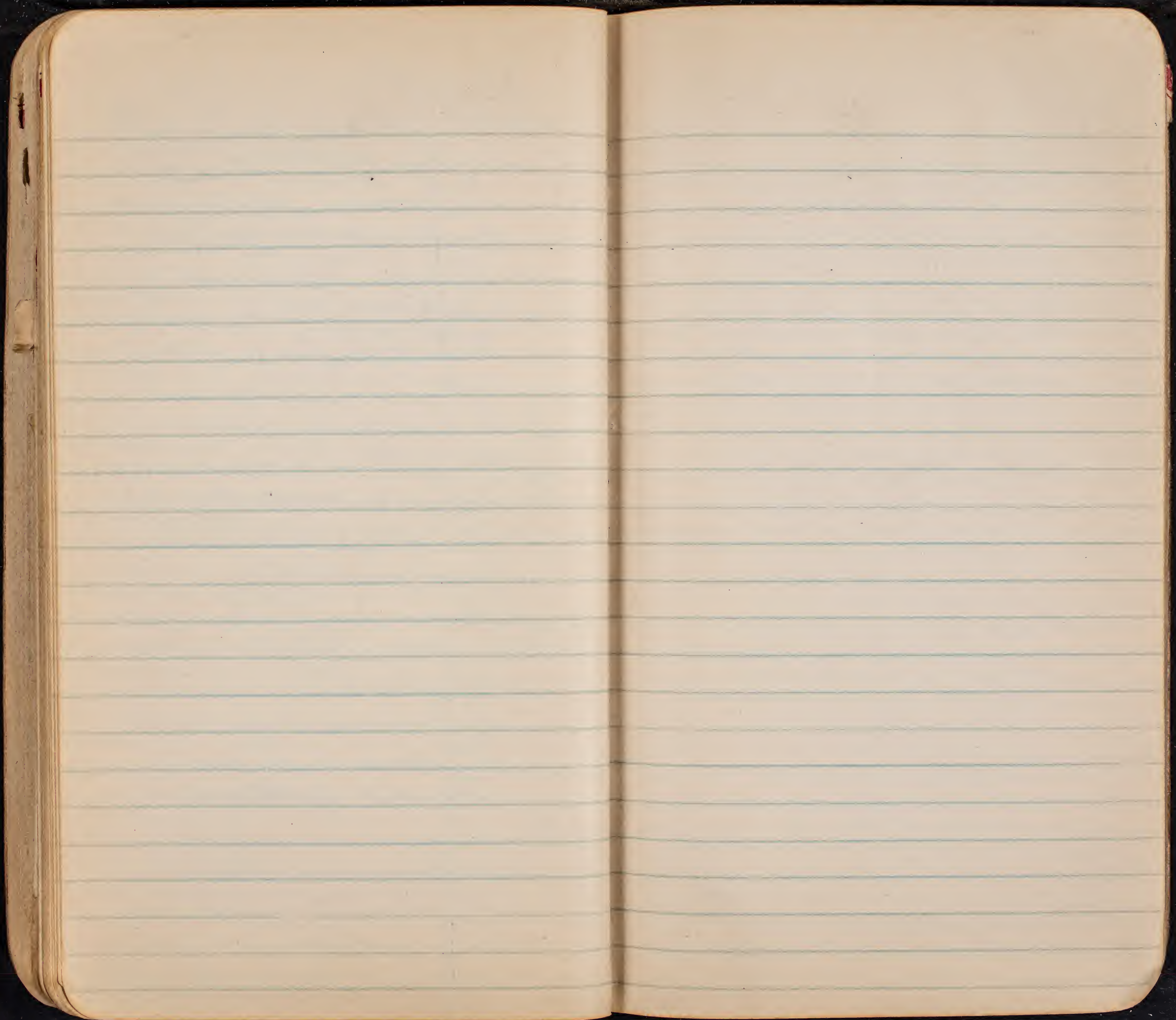
Just as we were coming
to Des Moines, opposite
State Fair grounds, saw
many *Lithospermum*
angustifolium in flower
along Rd.

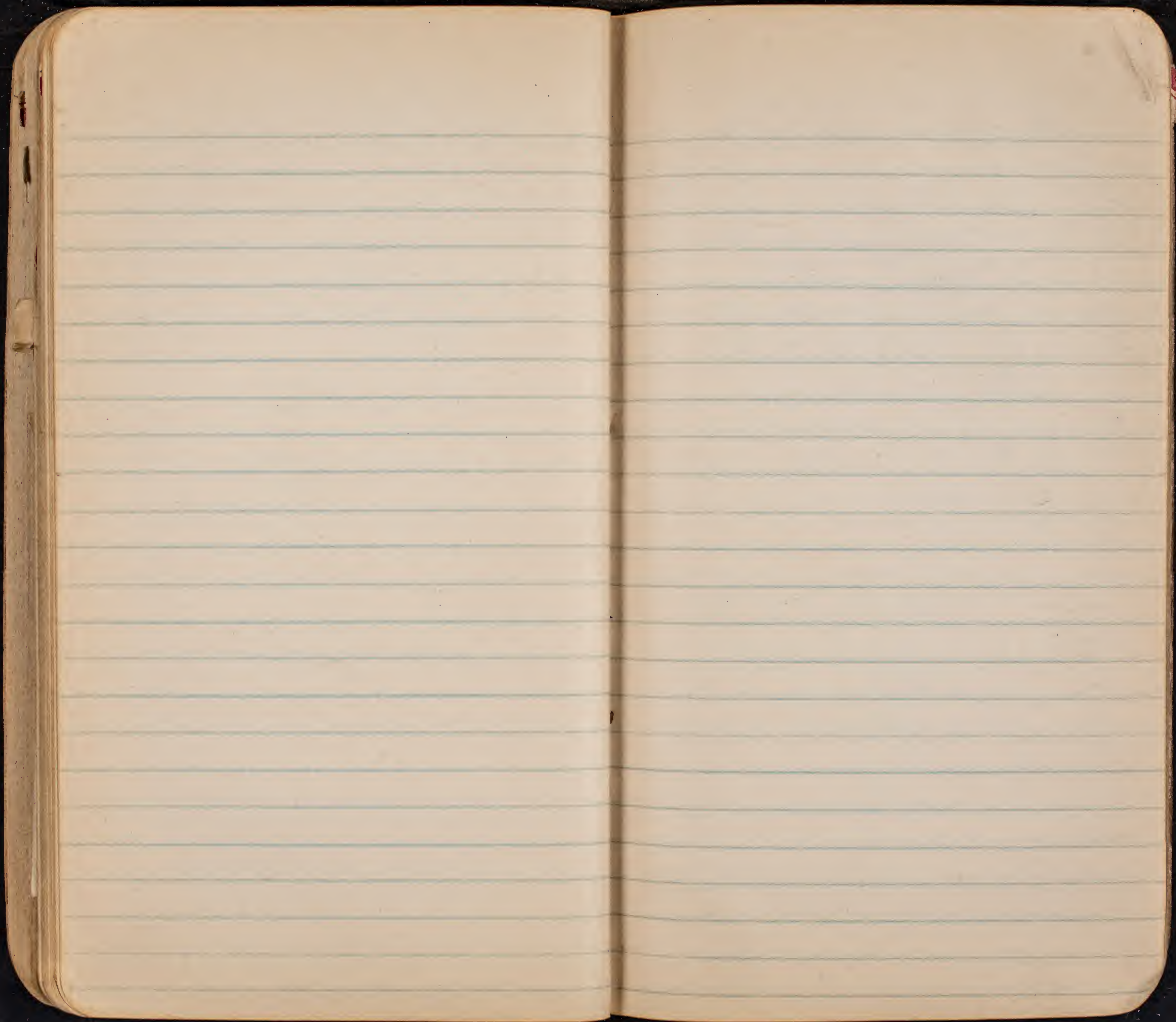
Few flowers along
line so far.
Pedicularis canadensis
Sisymbrium officinale
Fragaria virginiana
Lithospermum canescens

Story Co.
At Kelley saw in fl. -
Oxalis violacea
Lithospermum canescens
Viola pedatifida
Fragaria virginiana
Lithospermum angustifolium
Dandelions many

Just outside of Boone
a pond had a good many
Ranunculus acris -
with flowers standing 2 or
3 in. above water.

Greene Co.
At Hope took
Sisymbrium officinale
Lithospermum canescens
Fragaria virg.
Oxalis violacea
also saw
Antennaria dioica
Lithospermum angustifolium
Viola pedatifida
Sisymbrium officinale (lf.)





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Sheldon account

RR to Cedar Rapids	.86
RR to Emmetsburg	5.99
Pullman + porter ²⁵	1.87
Breakfast, wares, hotel	.65
RR. to Sheldon	<u>1.95</u>

\$ 11.32

\$ 11.32 coming

1.87

10.71 return

\$ 9.45

\$ 22.03

and

1.26

10.71

$$\begin{array}{r} .86 \\ 5.99 \\ 1.95 \\ \hline 8.80 \end{array}$$

$$\begin{array}{r} .86 \\ 6.94 \\ 1.71 \\ \hline 9.51 \end{array}$$

RR. to Waterloo 6.94

Supper - dinner .65

RR. to Cedar Rapids 1.71

RR to Iowa City .86

10.10

1919

To Sheldon, Ia. May 18-19
Left Iowa City 9⁴⁵ of Cedar
Rapids at 11⁰⁵ - went to bed.

May 19th

Near Emmetsburg -

A few good patches
of very small *Pedicularis*
canadensis - a few
scattered patches of
very small *Fragaria*
virginiana, and one
or two *Lithospermum*
A few *Sisyrinchium*
(white).

Walked E. along C. M. & GP.

Found a few low *Tradescantia*
in bloom, on RR gravelly bank.

Saw a couple of patches of
Pedicularis, a number of
Lithospermum canescens, a few
L. angustifolium, scattered
Vicia pedunculata & *V. circulata*
a few *Gilia* spp., a few
Scrophularia leporella in bud,

quite a lot of *Fragaria*
virginiana, a few *Hypoxis*
hirsuta, *Vicia* spp. in bud,
Lithospermum various in bud,
Oxalis stricta quite common
Antennaria ^{neg.} racemosa rather
old, *Senecio ^{neg.} platensis* a
few, hardly open.

Along RR west - I saw

Lithospermum canescens - few

angustifolium - more

Pedicularis canadensis - ^{common} beds

Astragalus ^{common on knolls} caryocarpus - bunches

Vicia pedunculata - scattered

" circulata - "

Oxalis violacea - bunches

Ranunculus ^{septem} alptum - lower ground

Sisyrinchium - mostly white

Taraxacum
Dandelion -

Saw 2 *Ranunculus* with few *Ranunculus* - multiple

Ajacis cuneata - several

Antennaria racemosa - bunches

✓ *Fragaria virginiana*
Hypoxis aurea - scattered
 ✓ *Ranunculus fascicularis* ^{aggr} higher
 all in flower, + clear to
 Ruthven.

West of Ruthven

those checked above were
 seen to Crippen.

West of Crippen ^{mostly flat} ^{Hartley} ^{Sandborn} ^{Sheldon}

	Spencer	Everly	Hartley	Sandborn	Sheldon
<i>Agrostis</i>	✓	com			✓
<i>Astragalus</i>	✓	✓	✓	✓	✓
<i>Antennaria</i>	✓	✓	✓	✓	✓
<i>Taraxacum</i>	✓	✓	✓	✓	✓
<i>Juncus</i>	✓	✓	✓	✓	✓
<i>Hypoxis</i>	✓	✓	✓	✓	✓
<i>Fragaria</i>	✓	✓	✓	✓	✓
<i>Litho. canescens</i>	✓	com.	✓		✓
" <i>angustifolia</i>		✓			✓
<i>Pedicularis</i>	✓	✓	✓	✓	✓
<i>Ranunculus fascicularis</i>	✓	✓	✓	✓	✓
" <i>septem</i>	✓	✓	✓	✓	✓
<i>Disynochium</i>	✓	✓			✓
<i>Viola pedatifida</i>	✓	✓	✓	✓	✓
" <i>crucifera</i>	✓	✓	✓	✓	✓
<i>Anemone patens</i>	✓	✓		✓	✓
<i>Senecio</i>		✓		✓	✓
<i>Oxalis violacea</i>		✓		✓	✓

Capella in flower at
 Emmetsburg, Everly, Hartley, Sandborn
 numbers scattered - W. of Everly
 at Hartley the pastures + sides of
 way are yellow with *Sanselvia*.

Rosy grass W. of Hartley
Compositae along RR W. of "
Agrostis in on knolls, with
Astragalus

Anemone patens common
 between Sandborn &
 Sheldon, several in fl.

Reached Sheldon after 12
 Had dinner at Hotel
 Shook in afternoon on
 Cyclops Road
 Left via Ill. Cent. for Waterloo
 at 5 PM

Ill. Cent.

from
Sheldon

Bringham
Gaza
Calumet
Lumber
Cherokee

<i>Agoseris</i>					
<i>Antennaria</i>	✓	✓	✓	✓	✓
<i>Astragalus</i>	✓	✓	✓	✓	✓
<i>Anemone pat.</i>		✓			✓
<i>Fragaria</i>		✓	✓	✓	✓
<i>Hypoxis</i>		✓		✓	✓
<i>Lithospermum</i>	✓	✓	✓	✓	✓
" <i>angustif.</i>					
<i>Oxalis viol.</i>					
<i>Pedicularis</i>	✓	✓	✓	✓	✓
<i>Ranunculus form.</i>			✓	✓	
" <i>repens</i>		✓	✓	✓	
<i>Senecio</i>					
<i>Sisyrinchium</i>		✓	✓	✓	✓
<i>Viburnum cuneol.</i>		✓		✓	✓
" <i>pedatifid.</i>		✓		✓	✓
<i>Toxocarpus</i>	✓	✓	✓	✓	✓
<i>Carduus bulbos.</i>		✓		✓	✓
<i>Sisyrinchium canesc.</i>					✓

Bringham & Cherokee Co.

Rev. Geo. F. Barrows
Whiting
Iowa
Wants Calvin's 2nd paper

Print of Barrows
folds
Guide to Museum in
Boh. Museum

Mr. Barrows speaks of
cut with drift at base
& loam above between
Sioux Center and Maurine,
Iowa, on Gr. Northern.

2.14
11.50
3.94 6.63

To Brighton July 1, 1919

Taxi, Iowa City	\$.35
RR. to Grinnell	2.14
Hotel - Grinnell - ^{room & bed}	1.55
RR. to Brighton	2.59
RR. to Iowa City	2.14
Taxi -	.35
	<hr/>
	9.12

Tues

Brighton, July 1, 1919

Left Iowa City at 11:50
Remained in Grinnell

July 2 -

Left Grinnell at 9:30 AM

near Muscatine:

Keokuk Co.

Rudbeckia hirta fl. very com.
Ceanothus americanus fl.
Fraxinella repens fl. white
Achillea millefolium fl.
Erigeron annuus fl.
Hemlock, *hispidus* fr.
Desmodium illinoense fl.
Asclepias syriaca fl.
Parthenocissis vitacea fl. sp.
Thalictrum dasycarpum fl.
Zizia aurea - yellow (pyramidal)
Rhus glabra fl.
Verbena stricta fl.
 (Even where timber the
 strip along RR is prairie
 except where ditches)
Salix humilis fl.
Poa pratensis fl. fr.

Verbascum thapsus fl

Lithospermum capitata bud

~~Trifolium pratense~~ fl

Phlox pratensis fl

Asperula cynosuroides fl

Melilotus alba fl

Hordeum jubatum fl

(all this a slightly broken
plain)

to Ollie - there on →

(usual increase in weeds near
station)

Rudbeckia hirta fl

Eriogonum ramosum fl

Rhus glabra lf

Cudonia - yellow fl

Hordeum jubatum fl

(Scirpus atrovirens fl) low

Lithospermum capitata bud

Asclepias syriaca fl

Verbascum thapsus fl

Convolvulus sepium fl

Lithospermum capitata fl (low)

Asclepias tuberosa fl

Asclepias tuberosa fl

Veronica virginica low

Hesperis matronalis fl

Claytonia virginica fl

Elymus canadensis fl

Aster multiflorus var. low

Andropogon furcatus lf

Lithospermum capitata low

Pastinaca sativa fl

(Zinnia - from wild)

to Richland

+ Achillea millefolium fl

+ Eriogonum ramosum fl

+ Rudbeckia hirta fl

+ Convolvulus sepium fl

+ Verbascum thapsus fl

Poa compressa fl

+ Andropogon furcatus lf

+ Euphorbia corollata lf

Lithospermum capitata lf

Veronica virginica bud

+ Rhus glabra lf

Equisetum hyemale lf

+ Pastinaca sativa fl

+ Lithospermum capitata bud

* *Hordeum jubatum* fr
 + *Veronica lupina* fl
 + *Aster multiflorus* bud
 + *Melilotus alba* fl
 + *Phlox pilularis* fr
 + *Trifolium pratense* fl
 + *Pastinaca sativa* fl + fr
 + *Aurearia* type 1 fl
 + *Urtica rubra* fl
 + *Asclepias syriaca* fl
 Washington Co
 + above
Helianthus grosseserratus fl
Lepachys pinnata bud
Rosa pratincola fl
Asclepias tuberosa fl
Elymus canadensis fl
Tradescantia reflexa fl
Ceanothus americanus fl
Cyperus alab. - low

Saw the following in
order of numbers.

July 3-1919 - Between Downey
and Iowa City - N. side RR

7 *Rudbeckia hirta* fl.
 76 *Erigeron annuus* fl
 25 *Euphorbia corollata* fl
 10 *Desmodium illinoense* fl + bud
 28 *Lepachys pinnata* bud
 18 *Tradescantia reflexa* fl
 21 *Achillea millefolium* fl
 1 *Hordeum jubatum* fl + fr
 20 *Asclepias syriaca* fl
 34 *Elymus canadensis* fl
 12 *Aster multiflorus* bud
 11 *Helianthus grosseserratus* fl
Rosa pratincola
 23 *Asclepias tuberosa* fl
 30 *Convolvulus sepium* fl
Phlox glabra fl
 3 *Trifolium repens* fl
Melilotus alba fl
 22 *Pastinaca sativa* fl + fr
Lepachys capitata bud
Andropogon furcatus fl
 2 *Phlox pilularis* fl

- 4 Poa pratensis fr.
 Carex americana fl.
 Veronica virginica fr.
 Desmodium canadense
 Henchira hispida fr.
 26 Equisetum arvense sterile
 " hyemale fr.
 31 Agropyron Purshii fl.
 Bromus arvensis fl.
 33 Salix humilis lf.
 9 Stipa spartea fl.
 Sigynanthus albidus fl.
 Baptisia ^{capitata} leucophylla fl.
 Liliun canadense fl.
 27 Artemisia ludoviciana lf.
 Urtica vulpina lf.
 5 Ambrosia trifida lf.
 " artemisiifolia lf.
 6 Cirsium tuberosum fl.
 8 Conyza americana lf.
 12 Chaetochloa dasy^{carpa} fr.
 27 Silphium laciniatum fr.
 19 " integrifolium lf.
 29 Bromus tectorum
 29 Bromus sp. fr.

- 14 Bromus pectinatus fl.
 17 Pastinaca integrifolia fl.
 8- Gypsophila sepium fl.
 18- Habacusa leucophylla fl.
 24- Anaphalis americana fl.
 25- Verbena thapsus fl.
 32- Helianthus scaberrimus fl.
 35- Eryngium yuccifolium fr.

Prairie

E. Iowa City RR July 16, 1919

- Rosa pratincola fl
- Achillea millefolium fl.
- Canna diarrhoides fl.
- Elymus virginicus fl.
- Lepachys pennata fl.
- Desmodium fl.
- Lepachys pennata fl.
- Desmodium illinoense fl.
- Petalostemum candidum fl.
- Desmodium fl.
- Euphorbia corollata fl.
- Cirsium Hillii fr.
- Bontelone verticillata fr.
- Solidago nemoralis herb.
- Eryngium yuccifolium fl.
- Elymus canadensis fl.
- Composita sp. fl.
- Helianthus scaberrimus fl.
- Zizanthium ^{alatum} fl. (low)
- Cicuta maculata fl. (very comp)
- Agrimonia canadensis fl.
- Verbena hastata fl.
- Silphium laciniatum fl.

- Oxalis filipes fl.
- Hyssopus unifolius fl.
- Pyrenanthus florum fl.
- Hordeum jubatum fl.
- Helianthus annuus fl. (1)
- Pentstemon (very) fl.
- Acerates viridiflora var. lanata fl.
- Cacalia tuberosa fl. + fr.
- Salix humilis fl.
- ~~Syrphium~~ (C. umbellata) fl.
- Prastium leucophloeum fl.
- Asclepias sulcata (old) (musk) fl.
- Aquilegia canadensis fr.
- Veronica virginiana fl.
- Silphium laciniatum fl. (very #)
- Desmodium canadense fl. (few)
- Eryngium yuccifolium (old) fl.
- Potentilla norfolkensis fl.
- Asclepias tuberosa fl.
- Carex festucacea fr.
- Stemona altissima fl.
- Santhemum integrifolium fl.
- Potentilla arguta fl.
- Koeleria cristata fr.

Asclepias syriaca fl
Heuchera hispida fl
Linum sulcatum fl
Asclepias verticillata fl
Scrophularia leporella fl
Mimulus ruber fl
Verbena stricta fl
Eryngium yuccifolium fl
Physalis peruviana fl
Sida acuta fl
58 *Ancistrum cylindricum* fr & fl
Polygonum sanguinale fl
60 *Pectis carolinensis* fl
Polygonum pennsylvanicum fl
Trifolium
Red clover fl
Milvula alba fl

The people *Petalostemon* &
Lycium were in patches,
 also *Silphium laciniatum*
 & *Eryngium*, latter very
 abundant.

Carex *peruviana* was scattered
 here & there.

To Dune Park - Sep. 23, 1916

A. = Sand, B. = usually sand, C. = waste place, D. = wet.

List of my dune plants:

- Aster ptarmicoides
 Aster dumosus 8/30 1909.
 " sericeus
 " sagittifolius
 A " linearifolius
 acerates floridana
 Asclepias syriaca
 A Ammophila arenaria
 B Artemisia caudata
 arctostaphylos
 Anemone cylindrica
 andropogon furcatus
 " scoparius
 Antennaria plantaginifolia
 C Ambrosia artemisiifolia
 asclepias tuberosa
 D aspidium thelypteris
 Bromus purgans
 A Cyperus Schweinitzii
 A " filiculmis
 Coreopsis tripteris
 B. Commelina virginica
 Chenopodium leptophyllum
 ? Campanula rotundifolia
 Ceanothus ovatus
 Coreopsis palmata
 A. Cycloloma atriplicifolia
 B. Cynchris caroliniana
 A Cakile maritima

- Desmodium canadense
 " sessilifolium
 Elymus canadensis
 Euphorbia polygonifolia
 C. Echinochloa corollata
 Equisetum hyemale
 Erigeron ramosus
 " canadense
 C. Eupatorium
 D. Fragaria virginiana
 ? Galium pilosum
 1 Gerardia aspera
 Gnaphalium polycephalum
 D Gerardia tenuifolia
 Hieracium umbellatum
 " longipilum
 Helianthemum canadense
 Helianthus hirsutus
 " occidentalis
 Henchera hispida
 D Iris varicolor
 D Juncus Torreyi
 Kuhnia eupatorioides var.
 Koeleria

- Lobelia Nuttalli
- Lactuca canadensis
- C " scariola
- B. Lithospermum Gmelini
- Liatris pycnostachya
- " scariosa
- " cylindracea
- B. Lupinus perennis
- Lepidium apetalum
- Lespedeza capitata
- D Lythrum alatum
- D Lycopus sinuatus
- Monarda mollis
- A Mollugo verticillata
- C Melilotus alba
- A Monarda punctata
- D Nuphar advenum
- B. Oenothera rhombifolia
- " biennis
- A. Opuntia Rafinesqui
- D Osmunda regalis
- A Polanisia trachysperma
- 2. Polygala cruciata
- Pycnanthemum flexuosum
- Pedicularis canadensis
- Phlox hirsuta

- Panicum Scribnerianum
- A Polygonum tenue
- D " amphibium
- D Prunella vulgaris
- Rudbeckia hirta
- C Rumex crispus
- Solidago nemoralis
- " graminifolia
- " speciosa v. angustata
- " racemosa v. Gillmanii
- 2. Sorghastrum nutans
- Smilacina stellata
- Salix humilis
- D Setaria viridis
- Stipa spartea
- Scrophularia leporella
- A. Strophostyles helvola
- C Salola hali var.
- D Scirpus angularis
- D Spiranthes
- D Spiraea salicifolia
- D Steironema quadrifolia
- D Stachys
- D Scirpus validus

Sasstrapas

- Tradescantia reflexa
- A Tephrosia virginica
- C Trifolium pratense
- D Zizia latifolia
- 2. Xanthium commune
- Bizia aurea
- Verbena craccosa
- " angustifolia
- " hastata

A = Sand	14	+ 2	16
B = Usually sand	6		
C = waste places	8	+ 2	10
D = Wet	19		
- = Prairie	59	+ 15	74
? =	6		

- ✓ Achillea
- ✓ Xanthoxylum
- ✓ Sida
- ✓ Arctostaphylos
- ✓ Geranium crinitum
- ✓ Panicum virginicum
- ✓ Junco 3 sp.
- ✓ Populus
- ✓ Hypericum
- ✓ Salix
- ✓ Aster novae-angliae
- ✓ " argenteus
- ✓ Rosa
- ✓ Ambrosia sp.
- ✓ Phytolacca
- ✓ Sida
- ✓ Apocynum
- ✓ Equisetum
- ✓ Sporobolus
- ✓ Polygonum
- ✓ Cyperus 3 sp.
- ✓ Solidago
- ✓ Sida 2 sp.
- ✓ Panicum
- ✓ Rubus
- ✓ Punicea
- ✓ Rudbeckia hirta
- ✓ Disynochia
- ✓ Silene am.
- ✓ Abies top

Left on N.Y. Central suburban train for Dune Park. (Fare, round trip \$1.72). Day clear & cool, at Robertsdale are weed patches, evidently with much native flora. Many RR tracks. To the it is all city. Runs much the same to Gary, Puffington. Offhand sketch at Puffington is scrub growth, some pines, etc. also oaks? Visit this sometime. Also no groups. At Pine are more trees & a flat traversed by railways. Looks better for trees. Looks very sandy. Good all the way to Gary. Lots of scrubby Black oaks just beyond Curtis. This is the place to go for Oaks.

Beyond Gary quite
dense, & with more or
less scrub growth, - oak,
Pine, etc.

At Millers a heavy
woods of low oak,
Quite dense, & dense
well covered!

At Dune Park (W of station) a
rather low sandy tract along

RR gives follows:

Geranium crinale com

Solidago nemoralis "

Aspidin thelypteris "

Panicum virgatum very "

Juncus — rather "

Poa (like *canadensis*) "

Geranium teniflorum "

Sagittaria arifolia "

Andropogon scoparius quite "

Salix longifolia

Aster (dumosus?)

Lactuca —

Onoclea regalis

Hespericum (shrubby)

Juncus —

Fragaria virginiana

Cirsium triflorum

Mnemonia mollis

Aster novae-angliae

Asplenium —

Solidago graminifolia

Celastrus? ? ?

Juncus tenuis

Proplectis bulbosa

Galium pycnanthum

Aster laevis — on low rising dune

" *asper* ? ?

Aster novae-angliae

Galium cylindricum

" *searson*

Lepidogon capitata

Antennaria plantaginifolia

Ceanothus americanus

Aster sericeus

Cirsium palustre

Galium humile

Andropogon furcatus

Rosa

Arctostaphylos

Panicum Scribnerianum

Andropogon distachyoides

Phragmites pubescens (V)

Asclepias tuberosa

Polygonum convolvulus (cut by the)

Hibiscus

Andropogon cylindricus

Syntherisma

Lactuca scariola

Grass - close top

Mimosa pudica

Lepidium alatum

Euphorbia corollata

Hesperis matronalis

Ambrosia psilostachya

Echinops angustatus

Scirpus (A. steud.)

Hieracium

Eriogonum canadense

Achyrocline

Spizanthus

Solidago var *Gollum*

Equisetum arvense

(*My. old sand grass?*)

A. lactea var *recepta*

Cyperus - *Silvestris*

Sporobolus - *flavus*

Cyperus (brown, long) low grass

Juncus - small

(a packet from along track at station)

(Low density)

Grass tall

Asclepias coronata

Lythrum candidum

Pyrus (malangensis?) black tree

Solidago v. *angustata*

Euphorbia corollata

"

Solidago v. *giganta*

Canthium Carolinum

Cyperus - *cellularis*

in swamp just N. of station

Juncus

Cyperus (see spec) long

at last

From sandy flat N. of station

Geranium asperum

Yucca, *P. pulchra*, *Veronica*

Opuntia

Salsola

Lactuca scariola

N. of the station & beyond
the RR tracks a flat
dune area extends to the
abrupt higher dune.

The latter to N. is
cut off abruptly on fence &
top is timbered.

To N. is an opening (low)
& to W. big dunes which
are nearly bare.

On the flat area just
N. of RR the dunes are
low, irregular & the flat
dune area extends to
less vegetation. Dunes
mostly are 1 to 3 ft. high.
I found following plants

N. of RR - low dunes - flat area

Andropogon scoparius

Amphispiza bilineata

Panicum virgatum

Tall, low-stemmed sand dunes - large dunes

Salix humilis

Moronea punctata

Panicum Scribnerianum

Sparganium angustifolium

Silene antirrhina (old)

Lithospermum

Euphorbia corollata

Artemisia - ^{viridis} green one

Nida (flat) see spec.

Antennaria

Cyperus

Helianthus occidentalis

Carex

Helianthus (see spec)

Trifolium

Salix longifolia

Callitriche from gully

Populus (small)

Epidendrum

Aster - white - medium low

Rosa — (one spec)
 Cyperus — capitate
 Galium — broad leaves
 Panicum capillare
 Anemone verticillata
 Solidago geminata
 Rubus — creeping
 Hypericum — shrub
 Spiranthes ciliolata
 Anemone cylindrica (det)
 Cyclamen
 Asplenium latifolium
 Euphorbia — erect stems
 Anemone nemorosa
 Rudbeckia hirta
 Pycnanthemum flavum
 Trigonotis virginica
 (Blackberry shrub — Pyrus —
 Aster paniculatus
 Grigerson cuneata (spec)
 Prunella umbellata (det)
 Solidago — see spec
 Cirsium carduifolium
 [Solidago pygmaea (?)

Cyperus — small, brown
 Cyperus — large
 (Cyperus?)
 Gerardia tenuifolia
 Aster sericeus
 Prunella?
 Rosa Engelmanni
 Solidago nemoralis
 { Juncus — } rather low
 { Iris (spec) } draw
 Sissypheum — all hand
 Zephura virginica
 in low place
 Juncus — small
 Viola — narrow leaves
 Hypoxis — small
 Gerardia tenuifolia
 Urtica hirta (?)
 Gerardia aspera?
 Aster paniculatus
 Equisetum
 Moss
 low ground
 Bidens
 Cyperus — (spec)
 Equisetum
 Sphagnum
 Polygonum acre

dry.

Tridax cantina - old
Scirpus americanus
Gnaphalium polycephalum

The preceding tract, up to near
R.R. track, has evidently been
cleared/old stumps are here &
grades for saw. This then
represents a recent invasion.

N. of the next R.R. track
wood has been cut (in cordons)
and a dense vegetation is
here, soil almost pure sand.

Some flora observed: +

Phlox pilularis v. c.

Hebecladon v. c.

Salix humil.

Achillea scabra

Ceanothus ovatus

Asplenium platyneuron

Helianthus laetiflorus

Lithospermum gracile

Aster laevis

Achillea scabra

Cnicus arvensis

Knautia virginica

Euphorbia corollata

Pteris aquilina

Pyromoneta flexuosa

Rosa

Helianthus annuus

Centium crinita

Azoxis annua (seeds)

Pedicularis canadensis

Panicum vulgare

Aster planiflorus

Aster nasutus

Asplenium platyneuron

Asplenium platyneuron

Asplenium platyneuron

Asplenium platyneuron

Asplenium platyneuron

A long swamp filled with
Achillea scabra extends E & W
& just beyond it is another
bench, a little higher.

This upper ^{area} surface seems to
be little disturbed except
near big dunes, where
the R.R. has been getting

(Slip 3 pages)

Expenses -	Photopi	
Elec. tape -	Aug. 26 -	.05
2 poles - dretjes	Aug. -	.30
Nails ¹⁰ ,		

Brook - 2 meals	
French - 8 meals.	\$ 1.50
Buchanan 5 " + 4	1.50
Whittle 11 "	2.00 1.85
PS. 11 " + 4	2.50
	<hr/>
	37.00
	8
	<hr/>
	45

Living exp:	
Bread - Melfin	.30
Yeast	.15
Oatmeal	.10
From Mrs. Maiden	3.92
Arnold's Park -	
Bread	.20
Crisco.	.30
Mutter	.66
Milk - 14 quarts	1.00
1/2 lb. flour	.35
	<hr/>
	6.88

Exp. Whittle	1.50
	1.85
	<hr/>
	\$ 3.35

List of plants in Formalin alcohol

- I - Scrub *Convolv* along canal 8/24/1916
II - *Hippuris* (?) W. side Upper Gas 8/26/1916
III - *Muphar adon* - *Gayluss* 8/26-1916 Flora
IV - " " " " " " Alm
V - *Gerardia acuminata* S. of Arnold's 8/29
VI - *Boltonia* - high prairie - 8/29

(Con. from 3 pages back)

- ✓ Photo 7 - Small stems -
tall, low top grass
✓ Photo 7 - E of S. Jan. obtained
of *milium* (2 new ones -
lanceolata)

Returned to Deer Park & found
that my train had just left.
Learned that they had been working
the same for 30 or 40 yrs.

Cinders & old ties indicate that
they have run over about
all of it.

Took trolley for Gary (15 cts)
where I got rubber, & took
train at 9¹⁵ for Chicago.

Took sleeper ^{for home} & went to
bed.

(see last page in book)

Muhlenbergia mexicana

" racemosa

Oenothera biennis

" muricata (?)

Oxalis

"

"

"

Oxybaphus

Panicum capillare

"

"

Parthenium

Pentstemon

Physalis peruviana

Plantago

Poa

Polanisia

Polygonum

"

Polygonum

"

Potentilla

"

Prenanthe

"

Psoralea esculata

Pycnanthemum

Quercus

Ranunculus

Rhus

Ribes gracile

Rosa

Rubus occidentalis

Rudbeckia hirta

Ruellia

Rumex

Salix

Salvia

Scrophularia leporella

Senecio

Senecio

Silphium

Silphium
Sisyrinchium
Sisymbrium
Sulcatum
Solanum

"
Solidago artemesia
" " gigantea
Specularia
Sphenopholis striata
Spiraea polifolia
Sporobolus

"
Stachys palustris
Strophostyles
Symphoricarpos
Ternstroemia
Talinum
Teucrium canadense
Thalictrum
Trichostema

"
Trifolium

"

Verbena
"
"
Veronica
Viola

"
Xanthoxylum
Yucca
Zizia
Zygadenus

Dr. G. W. Root
Peoples Gas Bldg.
Chicago, Ill.

Heridium puberulum

Hypericum

Hypoxis

Iva

Ralph Whittle

Juncus

1326 Penn Ave

Koeleria

Des Moines

Krigia

Iowa

Lactuca

Citas Ohioji Bull

"

Laers Paper

"

Long Frutiger

Lappula

Conserwolden

Lathyrus venosus

artificial Penn

Ammer 7054

Lepachys columbinis

Lepidium apetalum

Listris cybia drona

" *repens*

Lilium philadelphicum

canadense (?)

Linaris canadensis

Linum sulcatum

Lithospermum bachelini

Lobelia leptostachya

" *puberula*

Mollugo

Monarda fistulosa

Check 9 pages

