



Subjects worthy of spe

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Rhya

George W. Dawson
McGill College
Montreal

1874

Year Book 1871? for
W. Dawson Article on Lakes

Year Book 1871? for
Kumpton's Article on Lakes.

Expenditure Montreal to
Superior April 1874

Apr. 6. Ticket & pullman	\$ 40.25
Cab.	50
Ex. Luggage to Van	2.50
7. 14 3 meals	1.25
Ex. Luggage to Chicago	1.50
8. Cab at Chicago	50
3 meals "	1.25
Pullman	2.00
9. Transfer Luggage	1.50
2 meals	1.50
10. Hotel St Paul	2.25
RR to Moorhead	15.00
Extra Luggage	3.00
Dinner	0.75
11. Hotel Brainard	2.25
Dinner.	.75
12. Hotel Bell Fargo	2.25
Dinner.	.50

Hotel Mainland

0.75
2.125

	Dinner.	.75
12.	Hotel Bell Forge	2.25
	Dinner.	.50
	Stage to Pembina	18.00
	Extra baggage 250 lbs	9.00
13	Hotel Georgetown	1.50
	Dinner. Goose R.	.50
	meal hand forks	.50
14	Two meals lodging Fort R.	1.50
15.	Dinner	.50
	Supper	.50

no ice visible in lake
O some Schooners & E
to Le Sun.

Montreal first Robins
Leard. April 2.

ap. 8.

Aspe dropped his
pocket book off the train
near Calumette & had to
stay behind to recover
it. Arrived at Chicago
however about half an
hour after at 9:20.
Drove to Station of
Chicago & N.W. Ry in
haste expecting to
go on by 9:30 train!

Found that it did not
make connection &
that it would be best to
wait for 10 P.M.
Wandered about town
Had breakfast, saw
performing "Educated Lof"
G.C. Saw a new one
rail overhead railway
a short length which
is being constructed for
trial in a recent lot.
Dinner & Supper at
Merchants Ho.
Left by 10 P.M. train

op. 9.
Breakfast at Elroy.
for several hours.

op. 9.

Breakfast at Elroy,
for several hours
passing through rather
good scenery. Isolated
hills of Laurent all
stratified sandstone
standing up picturesquely
from general level.
More or less snow
still remaining along
the whole line but
much of this due to
fall of Saturday &
Sunday last. Sharp
frost of ground hard

14057
LUNCH

frozen this morning.
Dinner at San Clark
where owing to the simul-
taneous arrival of 2
trains a great crowd.
Arrive at St Paul
by 7:10 on time. Write
home re: St Croix
& Mississippi Rivers
still icebound here though
ice very rotten.

April 10.

Left St Paul by 7:45
A.M. Train. Arrived at
Brainard nearly on

time & shortly after 7 P.M.
though several delays.
on L.S. 531 P. road brake

arrived at
Brainard nearly on

time shortly after 7 P.M.
Though several delays.
On L.S. & St. L. road brake
rod broke & trailed on
the ground causing two
stoppages. When about
a mile E. of Brainard
the train parted. Engine
went on with a number
of wagons of coal which
were in front & left the
two last cars standing
on the track for some time.
Engine ran to Brainard
before discovering loss.
Country after leaving St. L.

Somewhat wooded from
"oak openings". Surface
undulating & pretty.
Soil rather poor & sandy
& not much settlement.
Near Wyoming & Rush
City however some pretty
extensive farms etc.
North of these places country
becomes more uneven
with much swamp
& the dry ground sandy.
Much pine & some
good timber. Tamarac
in swamps. Soil
all reddish & continuous

So, tile within a short
distance of Brainard
the becomes more with

see reddish & continuous

So tile within a short
distance of Brainard
when becomes pale yellow
Surface of the country
undulating from being
composed of unmodified
drift. That is to say
drift unacted on by
streams &c & not showing
any determinate systems
of valleys.

The ridges of greenish
slaty rock begin about
two miles S of Johnson
Junction on the RR. &

do not extend more
than half a mile W.
yet. Their longer
axes run not far from
E & W & the strike of
the slate is coincident
apparently. The lakes
& swamps among the
drift mounds show
a curious tendency to
assume long winding
river like shapes. The
ridges are often flat
topped terrace like
but shut in the
swamps on all

swamps on all

sides. The sand &
gravel are roughly
stratified.

The history of the lynching
of two Indians at
Brainard seems to be
as follows. A white
girl living between here
& Ft. — was lost.
No trace could be found.
Suspicion fell on the
Indians, & became
fixed on two, though
apparently without any
conclusive proof. These

Arrested, Captured by
the Citizens of this
place or hung on a pine
in the "Square" without
any form of trial. She
professed to confess
& promised to show
place where girls bones
were. But this may
have been merely a
scheme to gain time.
Bones supposed to be
those of the girl afterwards
found but turned out
to be deer's bones.
Indians still much

Indians still much
exasperated at the
death yet their friends
use it as excuse for
their actions.

Some Indian trouble at
present at Seech Lake
about 60 miles N of
here. Indians claim
certain lumber now
being cut to be on their
reservation. Indians
have assumed a
threatening aspect, some
of the white residents have
come down here for
Safety & a Company

U.S. Troops now here
on their way up.

A U.S. Officer who has
been at Birch Lake tells
me that limestone is
found there forming
"ledges" below the waters
of the lake.

Had a crew of rough
lumbermen on board
the train this morning
for a time. Dressed
in coats made of red
& green blanket &
picturesque though
dirty.

11. Started at 8
A.M. & took all
day to get to Fargo.
Much time wasted &
running of train very slow.
By cutting delay the
Engine driver managed
to prevent arriving
ahead of time. 5:30 P.M.
Engine once again broke
away & left the cars
standing on the line for
some time. Another
peculiarity of the road
seems to be that the
engine draws up

at the platform while
the passengers scramble
out of the first class
car, at the end of a long
train of trucks as best
they may.

Many sections today
resembling those seen on
the Roseau R. Stratified
sands & gravels, the strata
often undulating & sometimes
showing false bedding.
General colour pale yellow.
Generally a layer
of coarse pebbles at
the top, & this often

the top, & this often
seems to lie unconformable
on the denuded edge
of the undulating beds
below. Large boulders
also at top. The
stones composed of
Laurentian & much
Huronian & some
yellowish & whitish
limestone especially west-
ward. Some of the stones
glaciated & many with
slight calcareous
incrustations from
the general calcareous
nature of the matrix.

Some good sized limestone boulders. The transition from the Leifer country eastward to the Red River bottom land is much more gradual than where observed Northward on the line & on the Dawson Road. The farrest growth does not stop so suddenly & there is not the same well marked bounding ridge.

The snow which in the wooded country melt with soon after

The wooded country
met with soon after

Leaving St Paul,
begin to appear in
considerable quantity,
before reaching Thomson
Junction & from thence
several Stations W of
Brainerd quite covered
the ground to the depth
of nearly a foot.

On coming toward the
Prairie however it became
less & when the forest
growth disappeared
was no more seen
except where drift had
formed. Considerable

Quantities still lie
in such places but
otherwise the Red River
Valley is bare.

The ice in the Mississippi
at Brainerd is still
firm. That in the Red
R. perhaps even stronger
than it & will not
probably give way for
ten days or so. The
stages making pretty
regular trips & all
looking prosperous.
The river is quite low

The river is quite low

It does not seem that any serious flood is likely to take place this spring. Ice in the Missouri at Besmark reported quite rotten.

Saw this morning the company of U.S. Soldiers spoken of yesterday, plodding along the road toward Leech Lake with several wagons of stores & camp equipage.

Secured places in
Stage & made arrangements
to get luggage taken
to the Stage office.

12

Got baggage taken to
Stage office. Had dinner
at Bramble House & got
away about 20°C.

Roads very bad. Not much
snow but large pools of
slush water around.
Occasional dry patches
quite dusty. The road
cannot be followed, but
a new track made on

cannot be followed, but
a new track made on

the unbroken sod. The
Coulee's all full & ascending
Large detours found their
upper branches. About
4 miles out of Moorhead
overhauled by a buggy &
two men. One gentleman
stated that his valise
had been taken on the
stage. Having found it
he returned. Much
excited & would give ten
dollars to know who put
it on board.

Our driver did not
know the road well

not having travelled it
for two years. When getting
dark near Bopalo creek
he began to be doubtful
of the way & especially as
to the position of the bridge
Hauled up at a Settlers
house to enquire & after
hunting about in the
dark for some time found
the bridge. Had to make a
detour to get down to it.
all got out of stage &
crossed bridge on foot.
Stage. Stage in descending
the bank got stuck

the bank got stuck

15, ~~Left Fort R~~

in the snow. Horses taken out. Walked up to Georgetown about 3/4 mile through horrible mud.

Got supper & bed. Georgetown consists of two or three Hudson Bay stores & a stage station.

April 13. Up at 6:30 & got breakfast. Much delay however in getting the stage hauled out, & then about getting across the Red R. Stage could not cross as the ice too

Wotton. Another stage on the
W. side however I managed
to get things over to it
in a boat. To Elm R
where expected to get
dinner but found none
ready. on to Goose R.
station where had supper.
Left again at 7:30 &
drove on against a gale
wind from the North
with wind & snow.
off the road & wandered
about for some time. Only
one of the stage lanterns
could be lighted & that

not the one side had
been stopped by Canvas.
Saw a distant light
steered toward it. It
fortunately turned out
to be Frog Pt.

April 14. Started at 8
a.m. 3 miles out
the stage got into a
couple feet of snow & the
fore wheels pulled out
from under. The driver
thrown from his seat &
the Ring bold bent.
Unloaded stage stowed
it out.

A few miles further on
Came to a second coule
full of Snow too soft
for horses. Had to unload
stage & haul it over by
hand on blankets &
buffalo robes. At the
next coule 3 miles from
Grand forks. Tried to
pull stage over the ice
by hand but it cut
through & nearly overturned
sinking into about 3
feet of water. Unloaded
again & got the stuff

again to get the stuff
astore with some difficulty
got poles &c & broke the
ice away & managed to
get the stage out after about
3 hours work. Arrive
at Grand Forks 5 P.M.
Start at 5-45 with a
good team but driver
drunk. Got through
several swamps & bad
places & finally into
one in which the wheels
sank to the hubs & the
stage nearly overturned
jumped out into the
water. Horses down

o plunging violently.
Quite dark. By pushing
on the stage got it out
o drove on safely for a
time. Snow became worse
worse o could not
see the light of Lurttle
R though pointed out to
him by a man on the bot.
Horses found the road
o the driver then drove
us in at a furious
pace o at great risk
o overturning. We then
went into the house lay
down on the floor o

down on the floor &

fell asleep. Had
support & lay down on
floor for night as no
beds.

April 15. Started early
& made a good day
arriving at Pembina
between 9 & 10 P.M.

Crossed the Big & Little
Salt Rivers the water
was up to the bridges
but did not cover them.
Though so full the
water tasted perceptibly
the saline.

Hollows in prairie
"Swales" or "Slews" now
holding water. Said to be
formed by the fires which
when the weather is dry
burn away patches of
the soil. Saw many
telegraph poles which
had been burned by the
fires last autumn.

Got into one had hole
with the stage & had
the four horses all in
a pile for a few
moments. Got out

at least however without
damage. On arriving
at Pembina found a
Commission team for
which had telegraphed &
drove up to Duffryn.

Saw a good many
ducks during the day,
mostly quite small
birds back again already.

April 16. Enjoyed fully
stays to right & Spoke to
Cameron Anderson & about
reports &

April 17. Answering questions
given by Capt. Cameron on
County between Red R. &
Lake of the Woods, & getting
things arranged.

April 18. Answering questions
above reported to. Reading
& Have got a cold from
the staying which still troubles
me.

April 19. Reading & writing

April 19. Reading & writing

home. Getting report ready & making arrangements about it. Snowing slightly but not cold. A half-bred came in today with a strayed commission pony, which he had found about 18 miles west of Scratching River. Got \$10.00 for his trouble.

April 20. Writing out answers to Anderson's questions & mailed letters for home. A. & P. letter on questions connected with publication of Report.

Got- Duckworth to work
arranging things &
& preparing specimens.
River ice lying to be
very rotten here. Water
rising pretty rapidly. Hear
y telegraph that water
has risen 26 ft at
Georgetown owing to a
jam of ice. Temperature
of water 2 P.M. 33.5.0 F.

April 21 Tuesday

Finished writing out notes
on Roanoke R. Day cold
& disagreeable. River rising.

& disagreeable. River rising.

& ice begins to break up.
Temp of water 38°F . at
4 P.M. Two Red River
Carts arrived from Turtle
Cree with furs from Hill
who is trading here for
the Commission. Report
river fordable but Coulie's
bad & had to make
long detours. Posted
letters for home. A V.P.
letter on furs to be connected
with publication of report.

April 22.

Day still cold though
fine. Ice in River beginning
to break up. Temp. of
water at 4 P.M. $33-5^{\circ}$
Writing or.

April 23. Day fine &
warm. River breaking up,
an open space half a
mile long opposite here.

Temp. of water 34° at
4 P.M. Drawing out
sections of lignite or.
A heavy prairie fire rages
on the opposite bank of
the river tonight.

the river tonight.

April 24. Day warm
& pleasant, but in the
afternoon the everlastingly Northern
wind springs up again.

Ice moving down the
river rapidly & river still
rising. Drawing sections
for report & walked down
to H.B. Post in afternoon.

Ploughing commenced on farm
today. Almon says frost
much finer in the stubble
ground than in the original
prairie sod.

April 25. occupied
drawing sections & writing.
walked to H.S. Post. Day
chilly with North westerly wind
Ice rapidly running out of
river. Steamer said to be
at Georgetown on way down.
Temp. of water at H. Post. 33°F .
Ground rather hard for
ploughing yesterday & two
ploughs broken during the
operation. Capt. Anderson
tells me that from comparison
of observations the mean
winter temperature of Sarry

of observations
Winter temperature of Garra

about 2° above that of
Dufferin. Also that Summer
heat slightly greater there. This
would fully agree with observations
by Self & others on way up here.
Learn that at a shallow place
in the Red R near Louis the
next station past Scratching
R. going North; many large
boulders in river bed. Probable
occurrence of boulder clay.
Heard first frog croaking this
afternoon.

April 26. Still mild
day. River still rising
& ice running down.
Saw a Citta in the
evening. Many ducks, geese,
& Cranes flying northward.
The latter apparently the
first of the season.

Walked about a mile
up the river to a grove where
Indians tapping *Nyctanthes*
aceroides for sugar. Sap
has a taste less pleasant-
than that of true maple.
Shot a few small birds.
Mail arrived from S &

shot a few small birds.
mail arrived from S.S.

N. Had a letter from
Russell at ferry.

April 27. Writing v.2.
Day warm overcast,
For the first time quite
a concert of birds in the
bushes. Nearly all the
ordinary varieties have
arrived. Buds of
earlier willows & poplars
bursting. Not much
ice in river. Flat boats
from Northhead arrived
at Custom house today,
in advance of steamer.
Temp given at 4 P.M. $36^{\circ} F.$

Noticed curious phenomena
of cracking of bark of
Neyundo. Some fresh
cracks as from frost.
Some of last year partly
healed at edges. Some
of many years standing.
of forming bare streaks
exposing dead wood down
the sides of trees. Possibly
connected with severity of
winter frost, but looking
like overgrowth of wood
as compared with bark.
Capt. Cameron Les Seeding

Compared with bark,
Capt. Cameron Les Seelie

Hubert of last year
now coming up well.
Wrote home A.W..

April 28. Day warm
& cloudy with strong
southerly wind. No ice
passing down river which
is falling. Temp^l at
4 P.M. 40° F. Steamer
Selkirk arrived here this
evening being the first boat
of the season. Landed
a lot of stuff for the
Commission. Got
sections for report, & home

letters of this warning.
Sent also cheque
made payable to J. W. D.
First mosquito said to
be seen today.

April 29.

Day clear & summer
like. Max Temp 74° .

Temp of river at 4 P.M. 42° .

There are mosquitoes becoming
numerous. Frogs very
noisy.

Drew out diagram of Fleet
Logwoods & finished
Report. Got home letters
today.

Report. Got home letters
today.

April 30. Fine & warm
day, occupied writing &
drawing. River still falling.
Temp of water 44.5° F.

Caught a specimen of
the first *Wolfe*
Sever. Preparations on
foot for starting out on
the train & the greater part
of the scouts. To carry
out 25 days provisions
for whole party to Woodycut
& two months rations
for themselves.

May 1. Fine & warm day
but with strong wind.
Prairie fires burning in
several directions on both
sides of R. Practice of
half-breds to burn over
pasture & lay ground at
this season. Unjustifiable
however, as may spread
any distance & fire fences &
& also run into timber &
bush & destroy many trees.
St. International passed
up today without calling,
Lunched Section & Log W.

Sampled section 2 - 27th.
Got sample of River water
& filtered as preliminary
experiment.

Temp of water at 4 P.M. $46^{\circ}\frac{2}{3}$.

Grass beginning to look a
little green in swampy
hollows.

May 2. Arranged
plant-paper apparatus &
got samples of River
water. Filtered 10 oz through
weighed filter. Got
evaporating basins &
put 20 oz to evaporate
on extemporized sand-
bath.

Temp of River at
4 P.M. 46° F.

Day windy but not
cold. Scouts & Commsaz
train preparing for
start from early morning.
Got off about 5 P.M.
All confusion & trouble
as the men understanding
the business have been
discharged & crew hands
put in place.

The party force out
consists of

Mr Crompton & 12 Scouts
Loupkins & 6 oxmen
10 pony carts.
20 or teams.

The Scouts & oxmen to
go ahead & build depot
at Woody Mt. to be
stocked with 25 day rations
for entire party.

May 3. Day warm
& beautiful. Reading &.
Visited an Indian
Camp. Wrote letters.

May 4. Getting
arrangements made
about party & transport.
Camp material. Translators
etc. Day very warm
& summer like. St. L.
Shyenne going to ferry
passed this morning.
Temp 9 P.M. shortly after
4 P.M. $49\frac{1}{2}^{\circ}$. Broke
pocket thermometer
by accident today

May 5. Weather fine
& summer like. Order

issued & Capt Cameron
that all parties shall go
into camp on Thursday
near the farm fence?

Idea to get things into
moving order before start,
but rather premature.

Getting arrangements made
Camp of River near 4 P.M.
51.5° F.

May 6. Low & warm
day. All in confusion
of bustle packing up &
getting gear & baggage out
of store. River near
4 P.M. 54° F.

Send Photos. Invoice. Letters
& W. O. P. Letter with
cheque for \$79.

May 7. A day of bustle
& confusion. Parties
got off gradually to
camp. Day very hot.
At Anderson's suggestion
combine my camp
with his both parties
being quite small.

Stickworth incapable.
After dinner an
alarmering prairie fire
appeared to the south

Then watched it - &
lost it out a little
till it passed out of
range of camp. Fire in
long grass forming a
line on the prairie
looks wonderfully
like the rayed edge of
the solar Chromosphere
as shown in drawings.
Same rayed edged
flames & detached flakes
of flame. Colour
similar.

May 8. Terribly hot
day. Wind blowing
half a gale from the
South as dry as a
Sirocco & carrying much
dust. Thermometer
100° in the shade at noon.
almost incapacitated
from work. Towards
evening a thunder storm
(the first of the season)
came up but - passed
without giving us any
rain. Much cooler
however in the evening.
Sky all over with prairie

fire on opposite side
of Red R. Air full of
smoke.

Hear first Sow-the-wheat
& first Whip-poor-will
today.

May 9. 74. Getting various
little arrangements
& parts of out fit - attended
to. Collecting willows
&c. First strawberry
flowers (of *Vaccinia*)
found today. Many of
the willows & poplars
in full bloom or even a
little past. Found

also specimens
in
full bloom. Elur
& Nequindo in full
flower. Day not very
hot - being a northerly
wind. Temp. of river
at 4 P.M. 60° F.

Began to rain about 9.30.
but did not rain much.
Rumours have been
afloat that some Peubina
soughs were going to
stampede the commission
horses. Guards put
on the camp at

night - prevent anything
of the sort.

May 10. 74. Warm day
with strong wind.

Steamer International
arrived from South about
noon. Towards evening
thunder storms came
up & it suddenly became
quite cold. Raining at
intervals all night.

Grass beginning to have a
green tint.

May 11. Blowing & raining
from the N. W. all day.

Miserably wet - cold & dirty
in camp. Forced to turn

in during a part of
the afternoon for the sake of
warmth. Got a frying-pan
of hot coals in the tent
& after dinner which made
it more endurable.

May. 12. Fine & moderately
warm. Strong wind.

Got buckboard into trim &
harness fitted to "Jerry"
Brewell's horse of last year,
which I think I shall
adopt for buckboard &
perhaps for riding.

Mosquitoes still only
seen in ones & twos

is not at all troublesome.

May 13. Day fine warm
& pleasant. Getting various
arrangements made about
outfit - 8⁰⁰. Not feeling
very well on account of
extra cold caught.
Thermometer last night
showed minimum of 23⁰.
Sponge frozen in tent.
Spent the evening round a
fire which very grateful
after sunset though day
warm.

~~May 15~~

May 14. Fine day
not too warm & quite
chilly in evening. Wrote
letters to A. L. Russell,
Whitney, & Home.

All horses inspected by
Cameron at 6 P.M.

He took several of strongest
horses from parties &
gave to commissariat.

My white water wagon
team exchanged for a
lighter. Got one from
R.R. cart in addition.

May 15. Fine day
but began to rain
about 4 P.M. I went
on far into the night.
Wrote, & read a little
make out Travelling
bills &c. St. Gallway
with Coster crossed
the Red R. to-day to go
E. as far as 20 in ridge,
to put in mile posts based
on Meridian of Winnipeg.
By order of the Commission
Leaves told of this evg.

to go to assistance of
of train but start
delayed till morning
on account of rain.

16. Rather cool but
fine day. Temperature
sinking rapidly toward
evening. Reading 85.

Spent some time hunting
for land snails & found a
few.

May 17. Magnificent day,
though hard frost last
night. Got all camp

equipment - weighed.
Saw a humming bird
today which Duckworth
afterwards succeeded in
shooting. Male of ordinary
ruby throated variety.

The wagons having met
the train returned here
this morning. Others may
be ready for trip out in
a day or two. They arrived
before dark & camped out
at the little lake.

May 18. A beautiful
day. Occupied getting
things put in order.
Drove down to H.B. Fort
with Burgess in Buck-board
to do some business there.

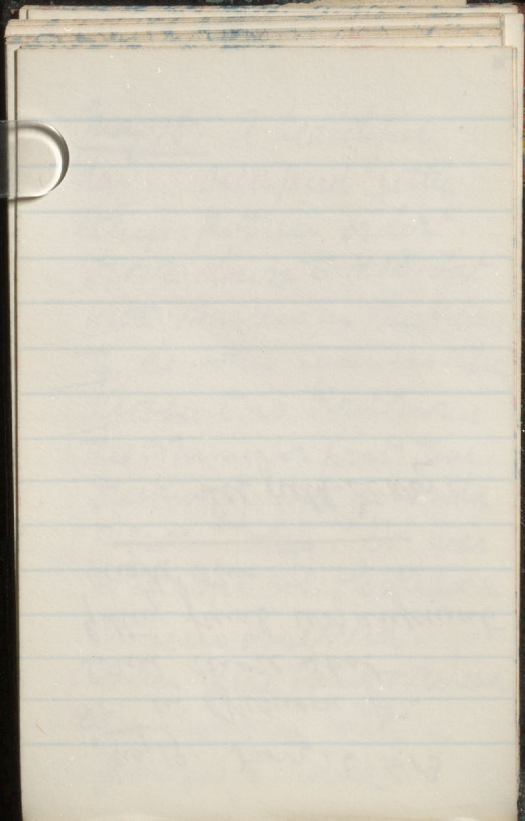
Mosquitoes troublesome
this evening for first time.

Duckworth shot first wild
pigeon today. It was
solitary & no flocks have
yet been observed.

Many geese flying overhead
this morning with a
favouring S. wind.

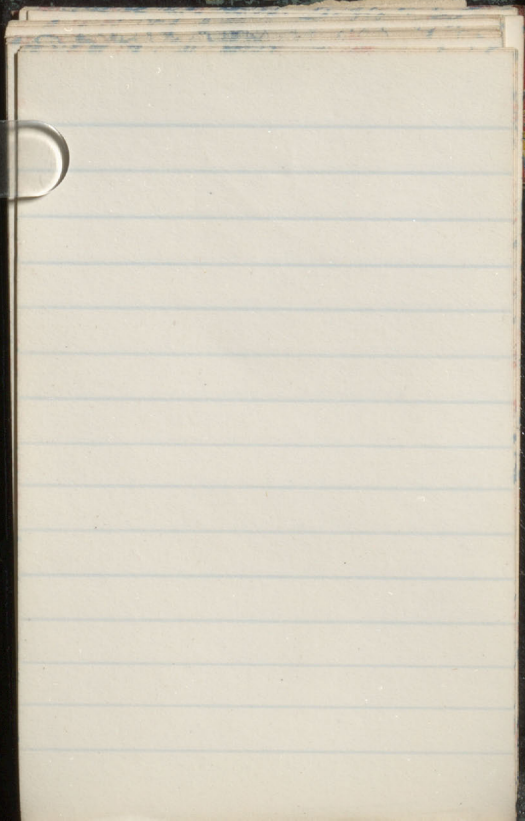
May 19. Drove to H.B.
St. in afternoon for
some more shot.
Getting final arrangements
made etc.

See field diary.



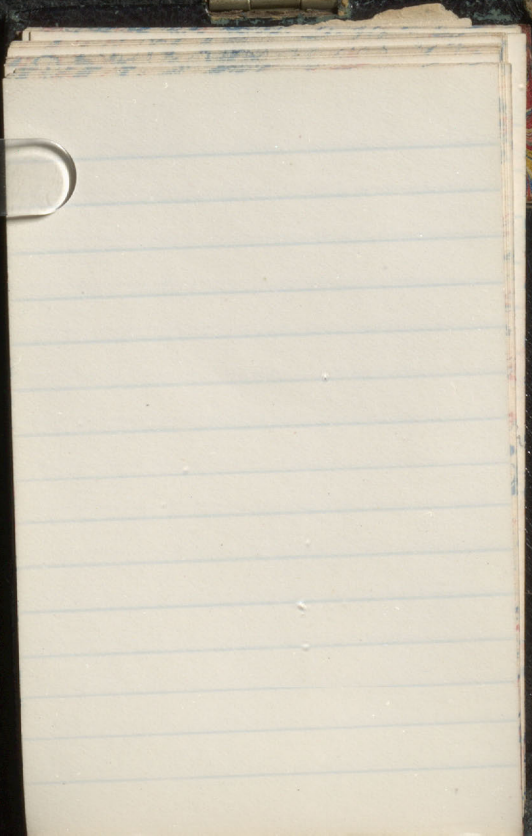


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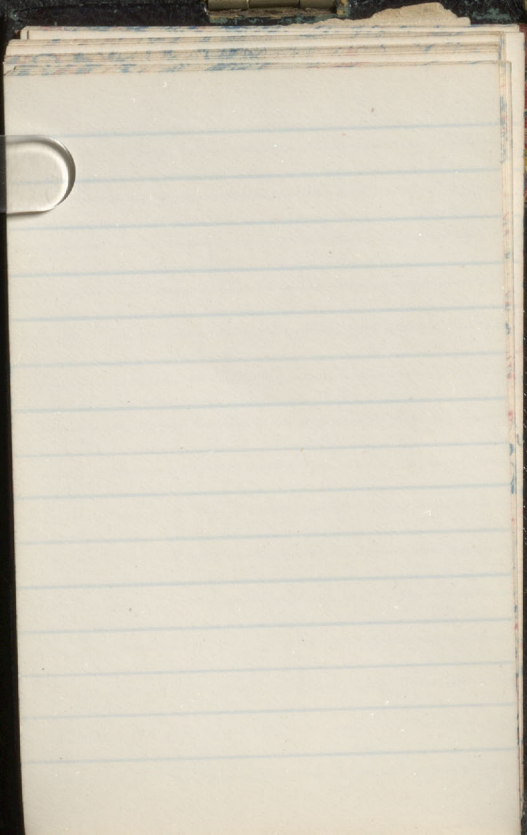




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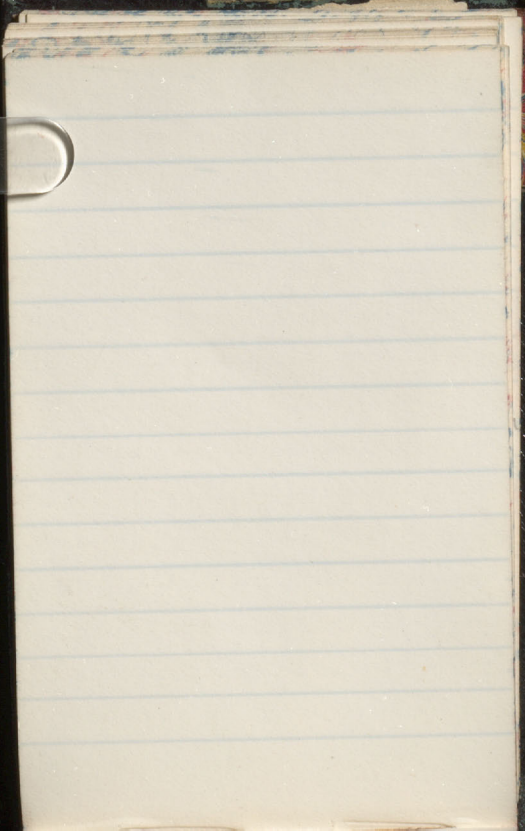






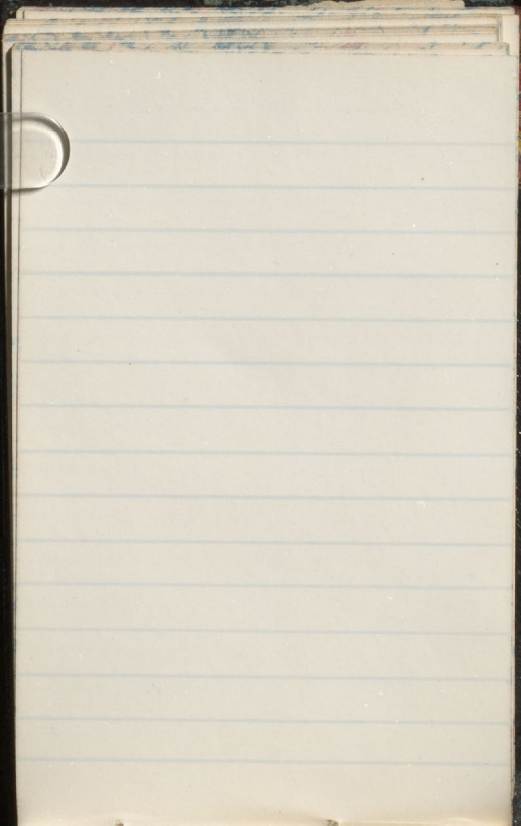


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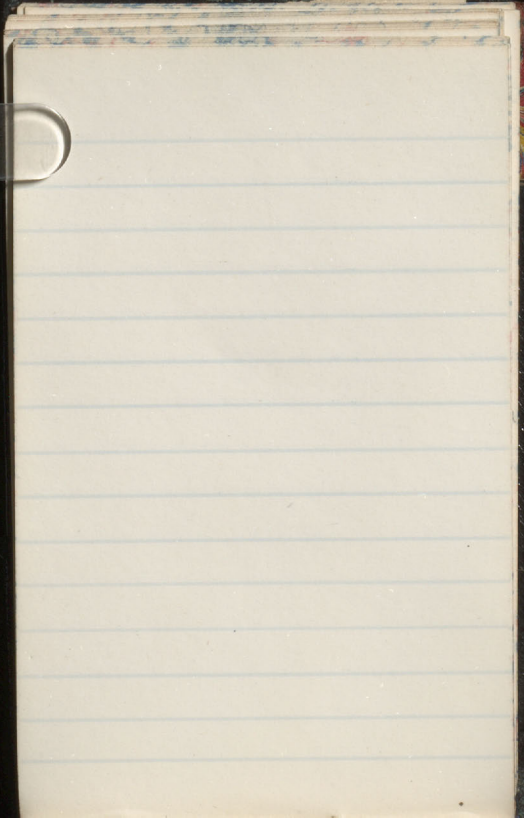


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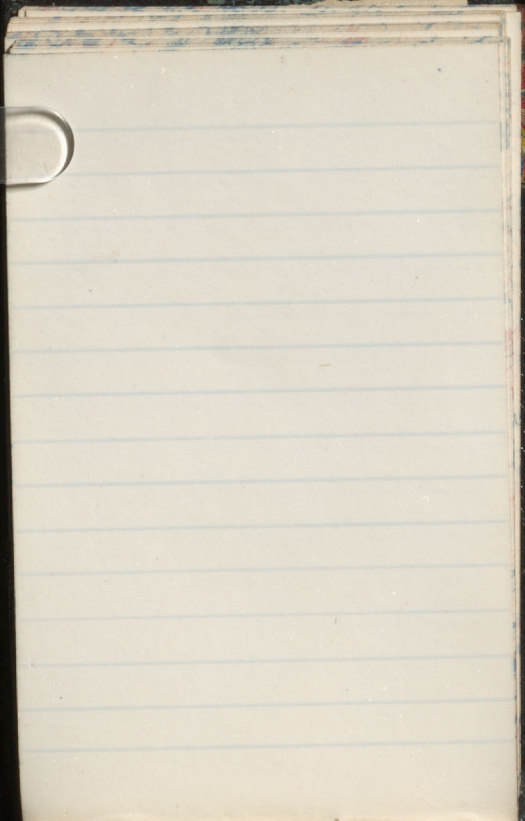


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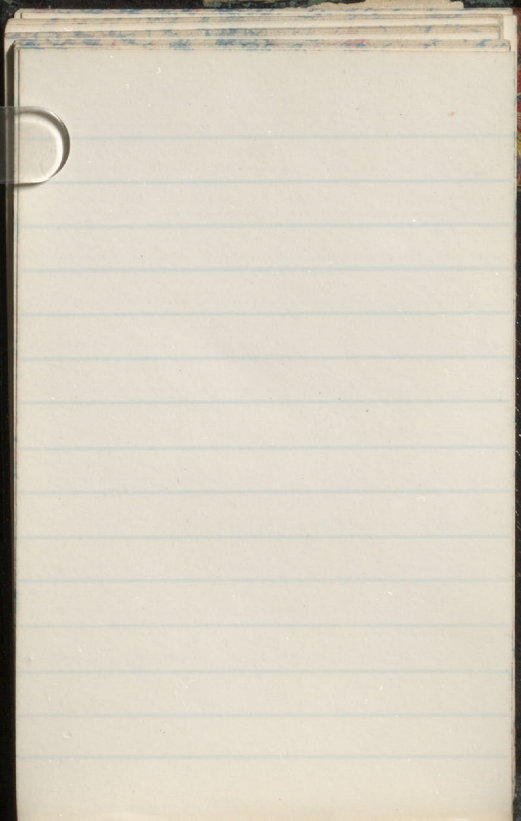


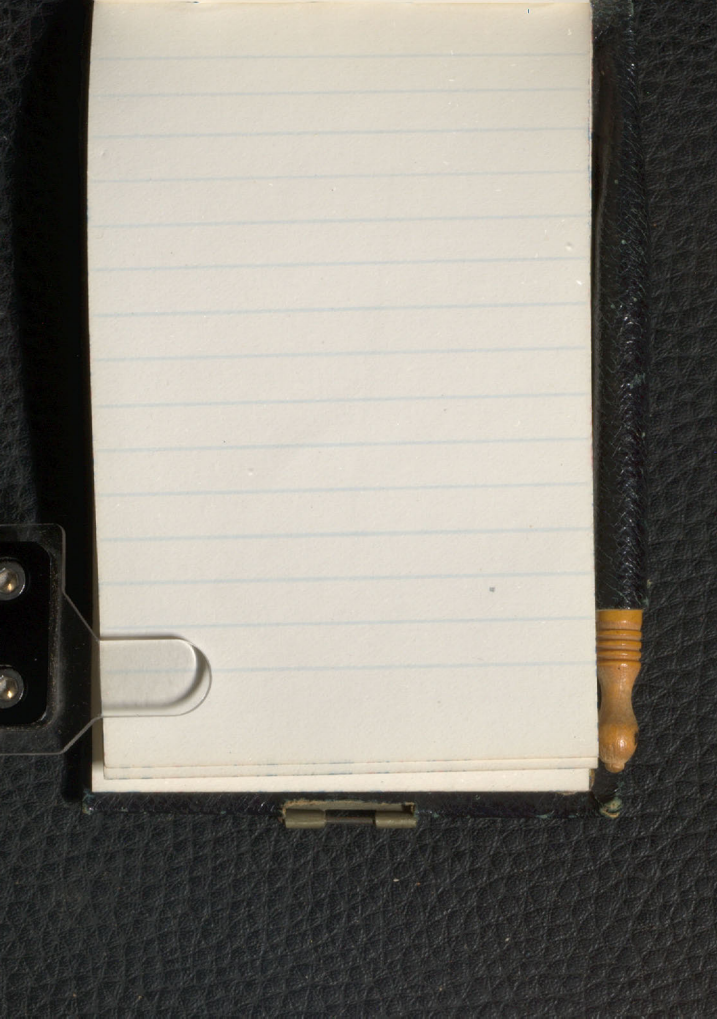


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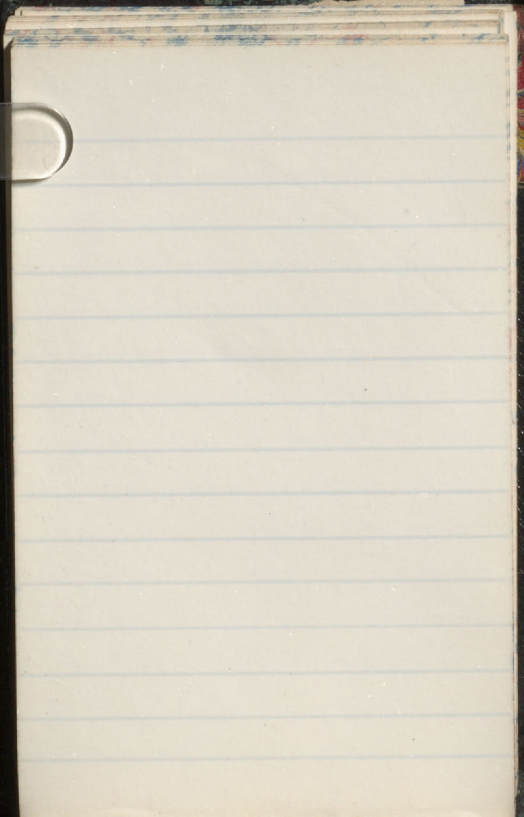




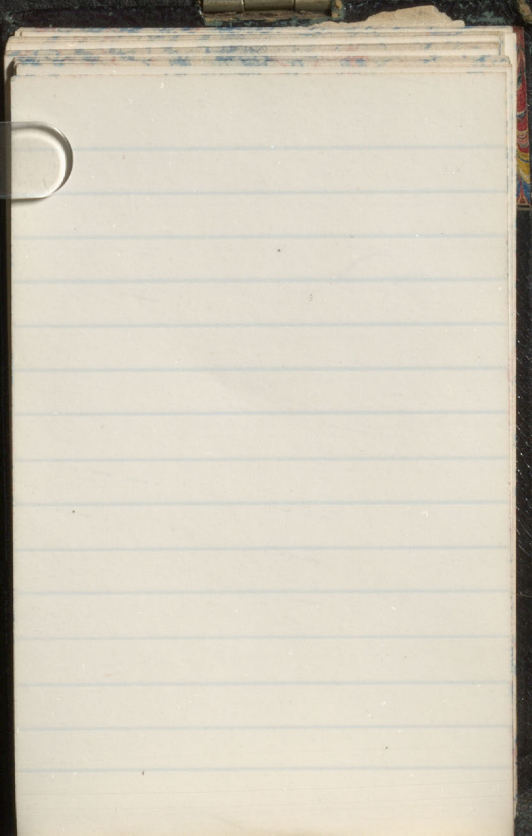


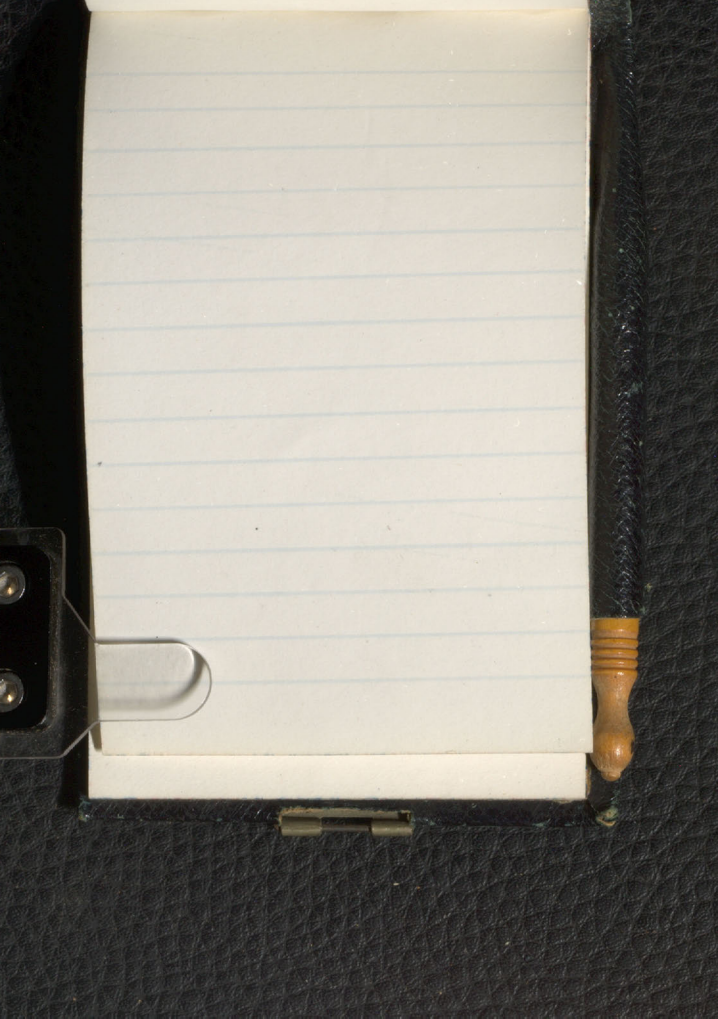


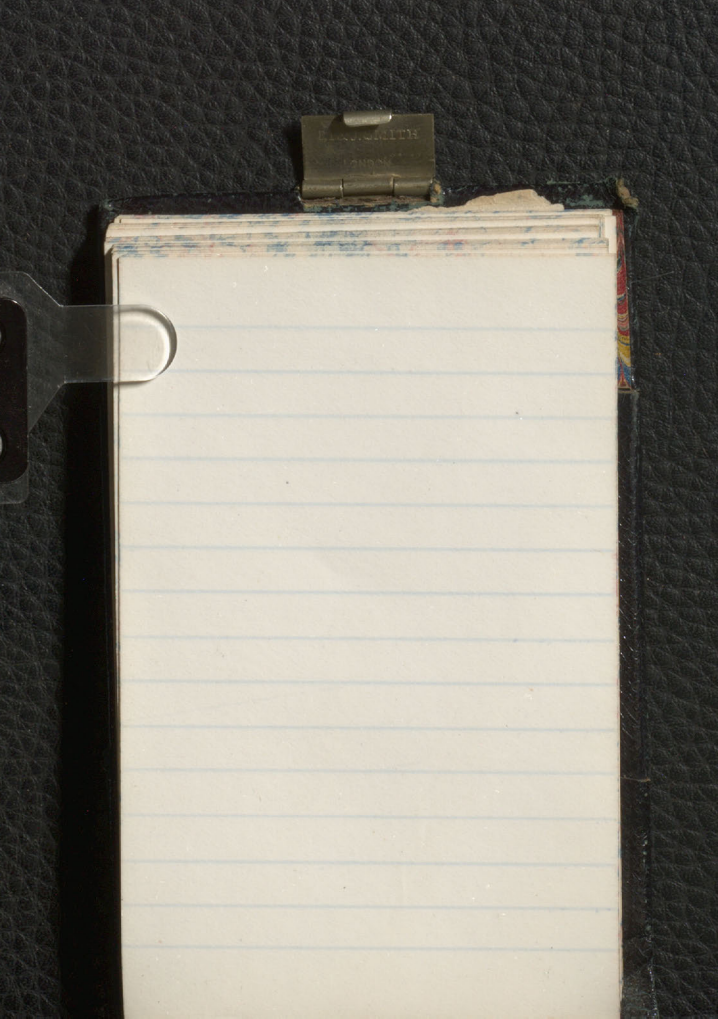
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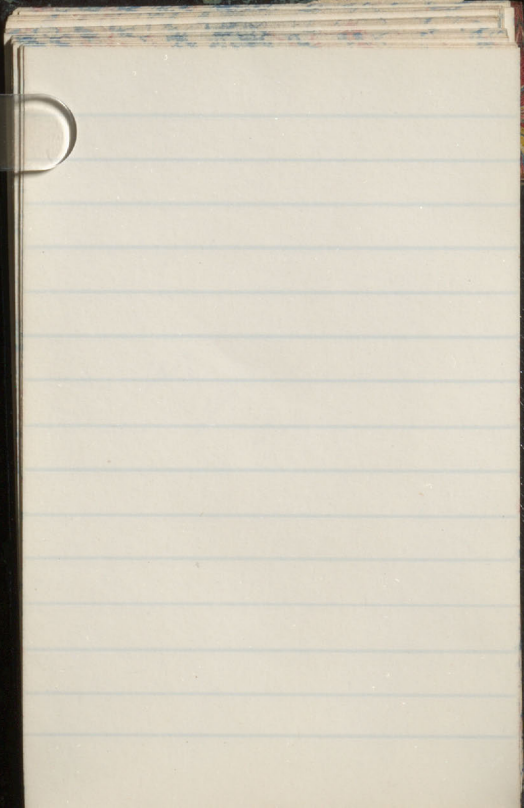






m
v
w

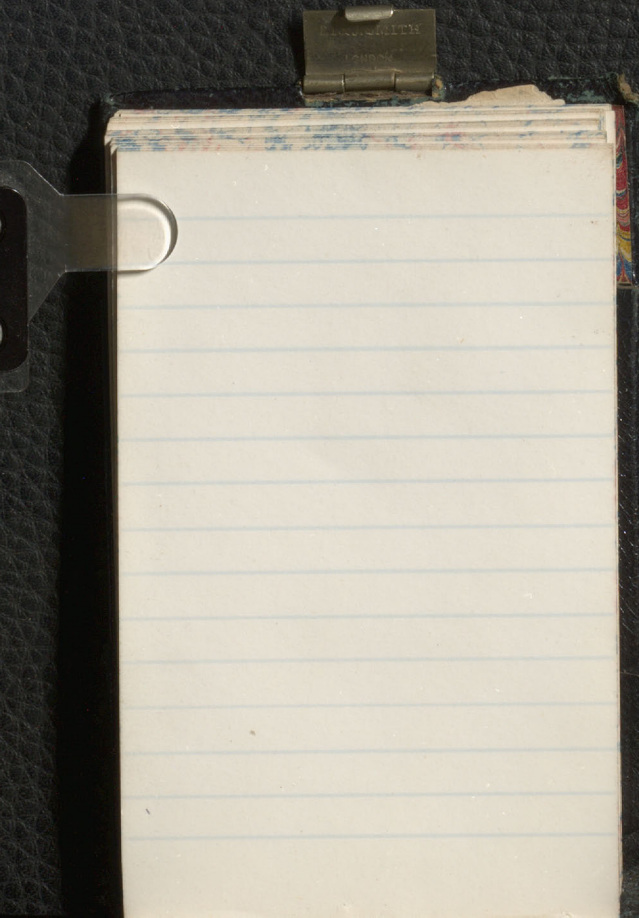




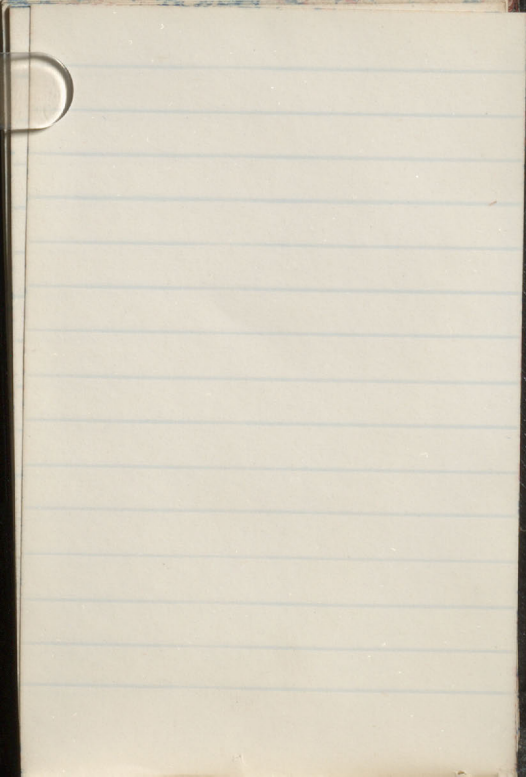






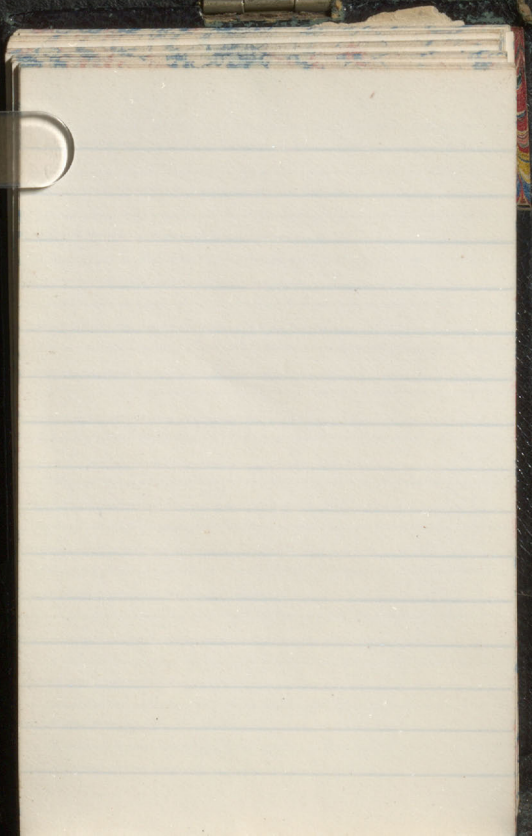




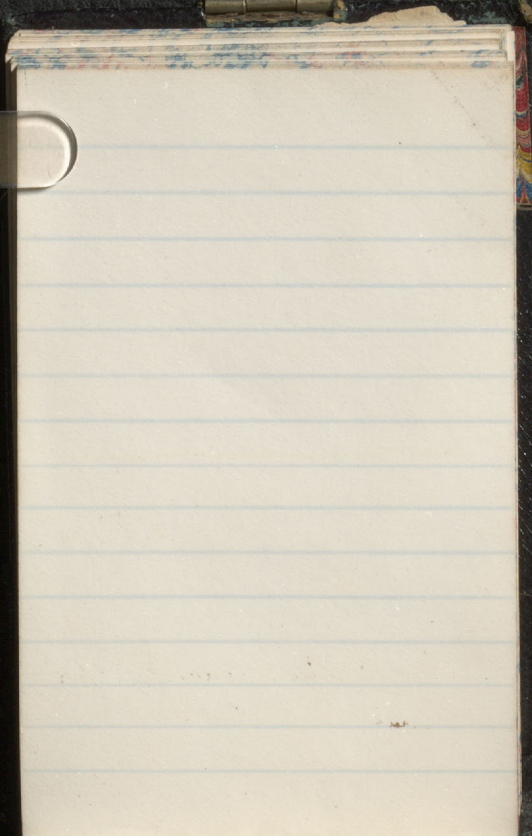




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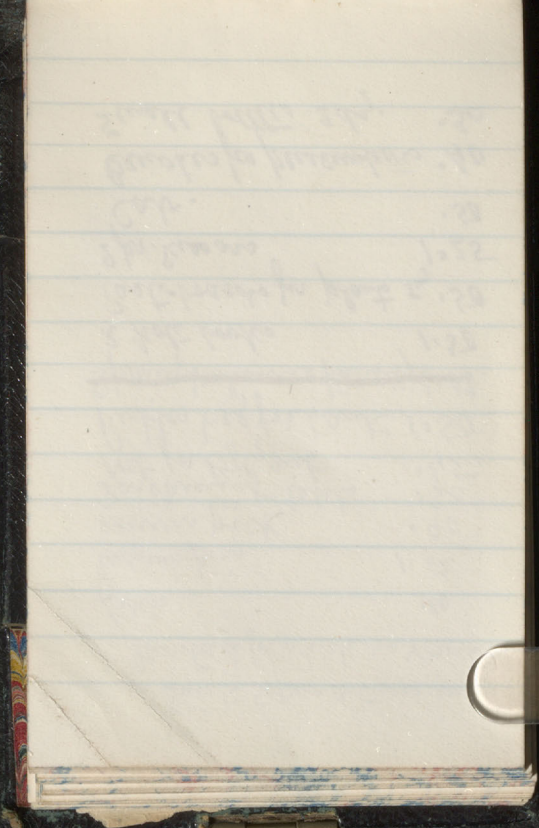






Small Expenditures in
Montreal for which no vouchers.

Labels	.60
Entomo. pins	1.62
Miners pick	.90
Parchment labels	.30
Net for Bfly net	1.45
Rubber bag for tank	1.50
Spring balance (small)	1.50
2 note books	1.50
Paste-boards for plants 5	1.50
2 pr. Scissors	1.25
Carb.	.50
Brushes for preservatives	.40
Small bottles 2 doz.	.30



Outfit for 74.

Leather pouch for Remington
cartridges.

New insect-cases.

About alcohol tank.

Correct line of Dawson Rd

April 18.

See Buckworth about gun.

also get all things looked
over & put right for start.

write home about report.

Telegraph " "

Draw out Sections

Return Cameron's?

Answer Anderson's?

Lake of Woods map.

Furs & Skin clothes.

at Dufferin

Levels from DT L of W,
for comparison map with
levels Moorhead to Duluth

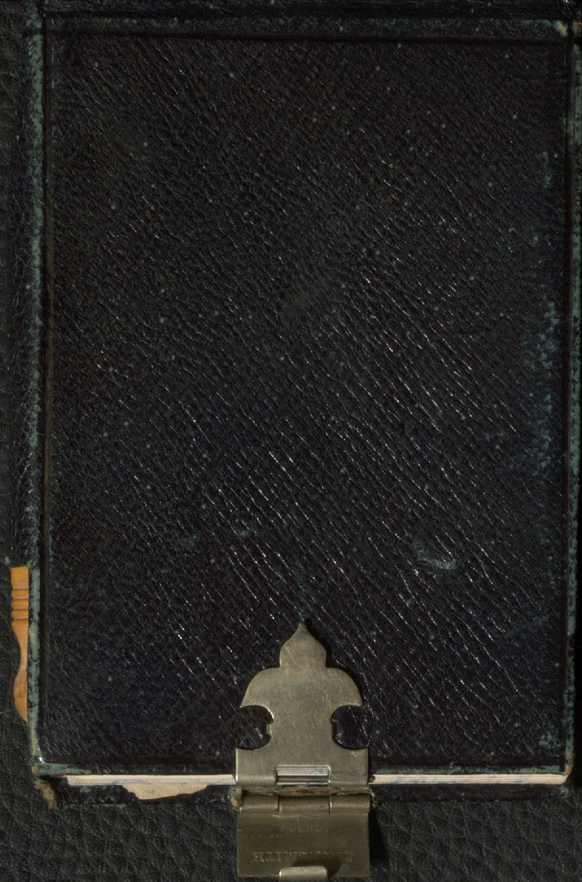
granite "Islands" in L of W
swamps.

Soundings from East &
Forrest L of W.

Correction youtube
L of Woods.









4781
JUNE 10 1874
Robt. G. Oliver
Pat. of U.S.A.



HENRY PENNY'S
 Improved PATENT Metallic
 Books
 BEST PREPARED PAPER

WARRANTED IF WRITTEN ON WITH HIS
 PREPARED PENCILS
 TO BE AS PLAIN & DURABLE AS INK

They will be found of great advantage
 to Travellers and all persons who wish
 to preserve their Writing.

No. 8 $\frac{1}{2}$



c/a

Referend list- of
Specimens of all
Sorts Collected.

May 1874. B.N.A.B.C.

Each specimen to bear
a Roman figure indicating
locality & a special
reference number in
arabic numerals.

Please return
to G. M. Dawson
McGill College
Montreal

II. Specimens collected at
& near Dufferin ^{& in the Red R. valley} from May 1
to May .

I. 1. First week May. Low
damp thicket.

2. First week May. Low
damp thicket.

3. May 8. Low open prairie
♂ & ♀. a small bush.

4. May 8. Elm.

5. May 8. Thicket.

6. May 8. Negroes.

7. May 8. Low bush.

8. May 8.

9. May 8. A large straggling
bush with grey
spotted bark. ♂ & ♀.

10. Low prairie May 8.
♂ + ♀
11. May 8.
12. May 8. Hayle.
C. Americana. Thicket.
13. Poplar the common
everywhere. Usually not
very large hereabouts. Say
30 or 40 ft. as usual. Bark
whitish grey & nearly smooth.
14. May 19. Thicket,
15. May 20. Open Pr.
Common,
16. Dry open prairie.
May 20.
17. open prairie. common
in certain spots, May 21.
Most of flowers past
best. *Artemisia patens*.
(also May 21. Dr. Sullivan)

18. May 21. open pr.
Scum triflorum?
19. Coule' near faults.
 May 21.
20. May 22. Thicket
 near foot Pemb. Mt.
21. Same.
22. Same. w. Cherry.
23. Same. w. Plum.
24. Open pr. May 22.
 plant with fetid odour.
 ? if a Sanicula.
25. Open pr. May 22.
26. May 22. open pr.
27. " " " "
28. " probably *Androsace occidentalis*
 see note.
29. " " " "
30. May 23. Thicket.
31. Swamps. May 24.

30. Brook where line
Cuts foot of Pembina Mt.,
Fish remains in shales
like those seen on Pembina
R at the regular crossing.
31. Selenite from same place
32. Septarian nodule,
Same place.

II. Pembina Mt to
Turtle Mt. Via.

II. 1. May 23, Pemb. Mt.
Thicket, Sanguinaria,
In flower, only one seen.

2. May 23. Pemb. Int.
Thicket & wood.
3. May 23. Pemb. Int.
Thicket. Seems to thrive
only where ground has been
moved by Gopher mole etc.
4. Shale bank. Pembina R.
on the line.
5. Pembina Int. Thicket.
6. " " May 23.
7. May 25. Pembina Int.
along St Joe & Ft Totten trail.
8. open pr. Pemb. Int.
May 25.
9. May 25. Pemb. Int.
Thicket.
10. Pembina Int. open pr
May 25.

11. Pebble silicified wood
Pembina R. at St Joe.
12. Limestone pebble.
Camp way 25.
13. Pemb. Mt. Thicket way 27.
14. " " " "
Ribes cuneata.
15. Open pr. Pemb. Mt.
Way 27. nearest
Lithospermum canescens.
16. Pemb. Mt. Thicket.
Way 27.
17. P. Mt. Thicket. Way 27.
V. cuneata The open pr
variety is smaller, leaves
& flowers deeper coloured.
Spur longer. No beard
on inside of lower petal.

18. Open Coule, P. mt.
May 26.

Ran. Tharuborideas.
Smaller specimens collected
by you on Red R. prairie.

19. Open pr. P. mt. May 26.

20. Gravelly bank. open.
P. mt. May 26. Grows
in dense tufts from
strong fleshy roots.

21. Gravelly bank. Open.
P. mt. May 26.

Astragalus Caryocarpus.

22. Thicket, P. mt. May 27.

Platanthera bracteata.

23. Thicket, P. mt. May 27.

24. " " " "

25. Coule's trib to P. mt.
May 26.

26. Nest on open pr.
9 eggs original. A duck.
See notes in diary.
27. Egg of ^{Lays} Hawk? 3 eggs
original. Pumbwa R.
May 27. Young fully formed.
Bates susansoni.
28. Open pr. Lark
Loy R. May 29.
nearly done blooming.
Phlox laevigata?
29. Swamp near Loy R.
May 29.
30. May 29. Open pr.
31. May 30. Dry gravelly
banks. open pr between
Loy R & Badger Cr.
Fl. yellow. Lateral petals
bearded but not the
lower. Spur short &
broad.

petals with purple lines
purplish shaded behind
nearest Viola hastata
or Nuttallii.

32. May 30. Dry hillsides.
Open pr. near Badger Cr.
Flowers white. Leaves not
lollow. Stamens much
shorter than petals, which
pure white with a purplish
midrib.

33. May 30. Dry open pr.
near Badger Cr.

34. May 30. Dry story banks
Open pr. near Badger
Creek. Flowers yellow.
dissepiment transverse
Several seeds in each side
in two rows. Vesicaria
See V. ludoviciana H. G. L.

35. Blue winged Teal eggs
7 in nest. Nest a few yards
from edge of swamp. Lined
with feathers
36. Mountain plover. Nest
~~a few~~ near a Swamp.
Lesso originally.
37. May 31. Swamps between
Badger Creek & Turtle Mt.
38. May 31. do - do - do
39. Stells from Same Swamp.
40. June 1. open pr. Turtle
Head Creek. Androsace
? sp. (See "Flora Colorado")
Differs from I: 28. has
cordilla distinctly visible
beyond calyx. Flower white.
expands wheel like lobes
obtuse entire. Leaves not
entire.

41. Open pr. June 1, near
Turtle Mt. Fragrant.
Flower pink.
42. June 1. Turtle Head Creek
first Hossorus. Corymbora
umbellata? see C. pallida.
43. Oak. 2. Macrosarpus?
June 1. Turtle Hd. Cr.
44. June 1. Turtle Hd. Creek.
Open pr.

III. Between Turtle Mt
& Coléan de Missouri.

1. Open prairie June 2.
W of Turtle Mt.
2. do - do - do
3. " " "
4. June 3. Souris R.
valley & open pr.

5 June 3, Souris Valley,
low ground.

6. Souris, June 3.
Dry open prairie on
gravelly banks.

7. June 3 - Souris valley.
Thermopsis fibracea? Fl. Col.
seems to agree exactly with Leavenworth
Slightly prostrate characters.

8. June 3. Souris valley
dry gravelly banks.
prostrate fl.

9. June 3. Souris valley.
dry bank.

10. June 3. Souris valley,
dry gravelly bank,
forming dense tufts.
Astragalus? flower
white with purple lip.

11. Souris Valley.
June 3.
12. Souris Val. June 3.
Low damp ground.
13. Souris Val. June 3.
Low damp ground.
14. Souris Val. June 3.
dry bank.
15. June 3. Souris Val.
Thicket.
16. June 3. Souris Val.
dry bank.
17. Souris Valley. June 3.
18. Souris Valley. Thicket.
19. Souris Valley. June 3.
^{See H. col}
~~sp. Litho spernum longiflorum.~~
20. Souris Valley June 3.

21. Sours, valley, June 3 -
Thicket.

22. Sours, open pr. June 3.

23. Mountain plover.

Nest - in grass. Eggs 2 or 3

4. (an odd egg from another
nest added) June 1.

24. Blue winged Teal.

June 2. Bank

Sours R. Eggs just

laid. 7 in nest.

25. Tree Sparrow June 2

26. Sours valley June 5.

Also common on prairie.
~~Bairds~~ Bairds ~~Rattles~~.

27. Sours val. June 5.

28. Eggs Wilsons phalarope

Styanopus wilsoni

Found in nest among grass

About 20 yds from Sours R.

June 5. Nest laid.

29. ~~Spo~~ Ground Sparrow?
Nest of pine grass $2\frac{1}{2}$
inches internal diam.
~~Plectropterus auratus?~~
30. N. Antler Cr. June 6.
Edge of stream.
31. Near N. Antler Cr.
June 6. open pr.
32. Near N. Antler Cr.
June 6. Open pr.
33. N. Antler Cr. open pr.
First-blossoms.
Slightly papery.
June 6.
34. N. Antler Creek. June 6
open pr. Fl. bright
purple.
35. N. Antler Cr. June 6.
low ground but
common on open pr.

36. N. Antler Cr. low
ground June 6.

37. N. Antler Cr. bank.
June 6.

Think a Mertensia &
near M. Siberica & M. alpina
in Fl. Col. but differs in some
points. Corolla blue-purple
tube paler. ~~Stamens~~ inserted
in throat by filaments which
dilated to as long as, or slightly
longer than anthers. projections
between filaments partly closing
throat. Tube hairy at the base
within. ovary 4 cleft. Right
one. central. Calyx 5 parted.
acute, not noticeably ciliate.
Stouter than tube of corolla.

38. Juncos 7. open prairie

39. " " open pr.
Flower white.

40. June 7. Open pr.
41. Second Crossing Souris.
June 8.
42. " " "
or common everywhere on
prairie
43. June 8. Second Crossing
Souris R.
44. June 8. Second Crossing
Souris.
45. June 8. Second Crossing Souris
46. June 8/18 between the
Souris Crossings.
47. June 9. Hill hundred
Scout. By open pr.
48. June 9. Riviere des Lacs.
Shells from
49. Eggs of *Plectrophanes ornatiss.*
4 in nest which on ground.

50. Short-creek, June 10.
dry clay bank, prostrate,
yellowish white. Leaves pink
or Eriogonum see E. trilobum ⁸⁴⁶

51. Short-creek June 10.
Shrub, dry clay bank.

52. Short Cr. open pr. June 10.
Small resinous aromatic.

53. Short Creek open pr
June 10. first blossoms.


54. Short Cr. June 10.

55. near Short Cr. open pr
dry swamp. †


56. near Short Cr. open pr
dry swamp. †


57. Near Short-creek. open pr
dry swamp. June 10

58. Near Short-Creek. open pr
dry swamp. June 10.

59.  Short-Creek; clay
bank. June 10.
Grows in dense matted
tufts.

60. Near Short Cr.
Flower tinged with lavender.

61. Near Short-Cr. June 10.
Scampshady rocks. 

 62. Near Short Cr. June 10.
Dry bank growing with
ground cedar. Flower pale
pink.

63. Near Short Cr.,
June 10.



64. Near Short Cr., June 10.
dry banks. blue.
Penstemon (fl. $\frac{1}{2}$ see)

65. Near Short Cr., June 10.
open pr. pale pink.

66. Near Short Cr., June 10.

67. Near Short Cr., dry
hillsides. flower bright
purple. Pod slightly
curved with short hairs.
Very much flattened
verticals.



68. Near Short Cr. June 10.

69. Near Short Cr. June 10.

70. Near Short Cr. June 10.
flower bright-purple.

71. Short-Creek. June 10.
flower bright-purple

Cactilarus Bartramias
72 Eggs ¹ flower. June 10.
Short-Creek.

73. Egg Sand Martin.
Hole in soft rock. Short Cr.
June 10. Troglodytes Adon

74 Egg. plectroplannus ornatus
Short-Creek. June 10.

75. Egg Foxglove Sparrow
Short Cr. June 10.
5 eggs. Nest of grass
open pr.

III. Wood End Depot

T Westward to Wood's Mill,
White Mud R.

III, 1. Thicket Souris R. June 11.

III, 2. Dry bank, " " " "

3. " " " " "
yellow umbellifer.

4. Dry bank Souris R. June 11.
umb.

5. " " " " "

Sandy, small white
flower. ^(Sepals 5, petals 5, Stamens 5)
alternately. Pistils apparently
numerous + mixed with hairs. 8 or more.

6. Dry bank Souris R.

like A. Caryocarpus but
apparently differs in leaf
also later, typical specimens
of the other in same locality
with large fruit.

7. Dry gravelly bank. Saur's
R. Rare.

Saura coccinea?

Flowers scarlet to pink.

8. Eggs, Erythrophylea
alpestris. Horned lark.

Nest. of dry grass on

the ground. Eggs recently
laid. June 12.

9. Eggs Stenopus Wilsoni?

See 19.
22 cases for
determination

Compare with others
Dryas Baurdi, perhaps

10. Eggs large purple
speckle. Nest large

of clay & grass, & mud
lined with grass.

11. Eggs small ~~black~~
a cat-bird.

12. Eggs Ground sparrow
Phoebastria macroura?

13. open pr. June 12.
W of Wood End. dry sunny

14. open & dry prairie
Common. June 12. W of
Wood End. First blossoms.

15. Coule banks & open
pr. June 12. W of
Wood End.

16. W of Wood End June

12. *Savannah Sparrow?*
Horned Lark?
5 Eggs on nest.
Large Chickens.

1 Day winged
beetle on nest.

Most of grass on open pr.

17. 25 mi. W of Wood
End. June 13.

18. Bright Blue purple
flower. June 14

Traders road. Dry mud
flat. Most of flowers

irregular, 3 lower &
two nearly united upper
lobes. Terminal flower of
spike regular! 4 or 6
merous.

19. Traders Rd. June 14.
Dry Swamp. Layer.

20. Traders Rd. June 14.
& common everywhere
on open pr. from Red R.

21. Traders Rd. June 14.
Swamp ground.

22. Traders Road
June 14. open pr.
flower bright yellow.
Rnothera?

23. Stells pour Coule'
near Souris. June 14.
Traders Rd.

15. Druckers Rd.

24. Eggs Mallard duck.
Near Souris. June 15
Newly laid 10 in nest original.

25. Eggs Artiturnus Bartramius
4 in nest. Set on a few
days.

26. Egg found on grass.

27. Egg ^{Co. 622} Chenut bark-bunting
plithoplacus ovalis.
4 in nest partly hatched.

28. Egg Calamospiza trichor.
or two others found in same
nest. (low bird?) Nest of grass
on open pr. June 13. all
fresh & laid.

29. June 17. Cotian. dry
rocky hill. First blossoms.
Apetalous. 6 sepals. 8 stamens
pistils coiled

30. Egg, large blackbird.

Traders Rd. June 16.

Nest with 4 eggs originally
half hatched. Built on
edge of bank in grass
there being no bushes.

31. Traders Rd. June 18.

Swamp open pr.

32. June 18. Dry hills. Cotone.

Resinous aromatic smell

Calyx of several rows.

Outer calycate flowers apparently
fertile. Receptacle covered
with dense short hairs.

33. Dry open pr. Traders Rd. June 19.

34. open pr. June 19. Traders Rd.

perhaps an albino of plant
already collected.

~~35~~ 35. Eggs ~~Spizella pallida~~.
9 in nest originally, partly
hatched, June 19.

36. June 9. Eggs, open pr.
Wacowan's bunting?

37. Eggs, Stoveller, June 19.
newly laid, 9 in nest.
Nest with feathers in
grass near stream.

38. Camp, Op 20, Traders
Rd. Silicified wood
from drift?

39. June 21. Open grassy
valley, Traders Rd.

40. June 21. Open pr.
a Phlox, like P. pilosa.

41. June 21. Open pr.

42. June 21. Open pr.

43. " " " "
About 18" high, grows
in dense tufts,

44. June 22, Woody Mt.
Common.

45. Woody Mt. June 23
Common everywhere on the plains
Solum breale.

46. Woody Mt. June 23.
10 stamens. pistil 5 dvt. 5 ovaries.
Flower purple, plant viscid
somewhat, with disagreeable smell.

47. Woody Mt. June 23.

48. Woody Mt. June 23.

49. " " "
Thicket.

50. Land Snails, Wooded
Cove, Woody Mt. June 23.

51. Woody Mt, Thicket. June 24.
petals 5. Stamens 5 alternate. pistils
2 divergent simple. Each springing from
lobe of ovary.

52. Woody Mt., Thicket. June 24.
Cal + cor regularly 5 numerous. Stamens
5 alternate. pistil 1. Ovary 4 dvt. Stamens
inserted in tube of corolla which is 1/2 longest
mouth.

53. Woody cut. Swamps.
June 24.
54. Woody cut. June 24.
55. Woody cut. Thicket
June 24.
56. Near woody cut. June 25.
open pr.
57. Near woody cut. June 25
open pr.
58. Near woody cut, open valley
June 25. Low, dense
clumps. Lower pale
purple. Lupinus argenteus?
59. Near woody cut, open
valley. June 25.
60. woody cut. Dry open pr.
June 25.
61. Near woody cut, Bank
of stream. June 26.
62. Near woody cut +

Common everywhere W of
Wood End. Dry Hills &
clayey alkaline valleys.
June 26.

63. Near Woody Mt. June 27.
Common everywhere on
the prairie.

64. Near Woody Mt. June 27.
Clay bottomed Valley.

65. " " " " " "

66. " " " " " "

67. " " " " " "

petals 4 light-purple.

Stamens 6 much exserted.

pistil one clavate stem bent,

Ovary superior. Calyx lobes 4.

~~As~~ green dentate appendage
at one side of flower appearing
to be an altered petal.

68. open fls. June 27.
Near Woody Mt.

69. Near Woody Mt. June 27.
Common in ~~the~~ clayey
& alkaline valley bottoms. S of
Coteau.

70. Near Woody Mt. Clayey valley
June 27.

71. Near Woody Mt. Bank of
Stream. June 27. Bracts or
sepals 3. Reddish. Enclosing seed.
Seed 1, 3 angled. Stamens 3, 3
small projections alternate with stem.
3 imbricated of perianth at apex of seed? iff ^{pink}

72. Near Woody Mt. Bank of Stream
June 27.

73. Clayey valley ^{near} Woody Mt.
June 27.

74. open pr. Near Woody Mt.
June 27. (See note)

75. Eggs open pr nest,
June 25. Near Woody Mt.
Plectrophaea hudsonia

76. Near Woody Mt., June 29,
Clayey hill sides, Shrub.
Smell of artemisia.

77. Near Woody Mt., June 29,
open pr.

Pustlemon pubescens?
Apex very nearly erect in
wood.

78. Near Woody Mt., June 29,
dry hill side. Juice milky.

Seems to agree with Stephanomeria but achenes of young do
not seem to be distinctly 5 ribbed. Flowers all ligulate 5.
Principal bracts of involucre 5. (see notes at back)

79. Near Woody Mt., June 29,
open pr.
of brook.

80. Near Woody Mt., June 29,
dry hill side. Smell of
plant resinous aromatic.
Berry red when ripe.

81. By Hellside. Near Woody
Cut, June 30. 74.

82. Near Woody cut June 30.
Banks of stream + low
ground.

83. Near Woody cut - June 30
Banks of stream.

84. Near Woody cut June 30.
Bank of stream.

85. Near Woody cut June 30.
Beside stream.

86. Near Woody cut, June 30
Open valley.

87. near Woody cut, June 30
Open pr.

88. Near Woody cut, June 30

88. Near Woody Mt June 30.
open pr.

89. Near Woody Mt June 30
open pr.

90. Near Woody Mt, June
29. Division B sect.

91. " " " "

92. " " " "

93. " " " "

94. " " " "

95. " " " "

96. " " " "

97. " " " "

98. " " " "

99. " " " "

100. " " " "

101. Near Woody Mt, June 28. Altered
clay from combustion glauconite,
from red topped hills.

102. " " " " "

103. " " " " "

104. " " " " "

105. " " " " "

106. " " " " "

~~107. " " " " "~~

107. Same place. Sandstone
Coppery some hills.

108. Same place, June 29.
Flag bed.

109. Same place. June 29.
Leaf bed.

110. Near Woody Mt - June 29.

111. " " " "

112. Near Woody Mt, June 29.
Dark clay at base. Division
D of sect.

Division B. June 29.

113. Sclerofud wood. cone,
Same place.
114. Near Woody Mt June 29.
Division D. of Section.
Marine? Shells from
the dark clay.
115. Near Woody Mt June 29.
Division B. of Sect.
Plant bed above lignite.
116. " " " "
Below lignite near
Cheloman remains
117. Fossils from Sambre
Clays (Cretaceous) Woody
Mt-Astron. Station Valley.
July 1.
118. Occurs with ironstone
- in Sambre clays; July 1.

119. Ironstone. Division
B of Sect. of June 29,

120. Sclerophol wood, Woody
Int.

121. Near Woody Int. June 29,
Division B of Sect.

122. Valley Bottom. Near
Woody Int. July 1.


123. Eggs from clay
built Swallows nest,
Near Woody Int. June 29.


124 Eggs. from nest
of grass on clay cliff.
One white egg along
with stem. Those eggs
of Cow bird?


125 Near Woody Int. July 2. 74
border of stream. *acridipus?*

126. Near Woody Mt July 2.
ponds in bed of dry stream.
R. Aquaticus.
127. Near Woody Mt. Dry clayey
hillside. July 2.
128. " " " " "
129. " " " " "
130. " " " " " ✓
131. Near Woody Mt July 2.
dry prairie hillsides.
Leaf aromatic. (See note)
-
132. Fragment of gray limestone
boulder. See Notes July 2.
133. Baccharis from Clays (Shales)
12 mi W. of Astoria Sta.
(Caste's old camp)
134. Clay (shales) same place.
135. White Mud R. Dry bank,
July 3. '44. ? if got in
flower before?

136. White Mud R. July 3,
dry bank.

137. " " " " " " 

138. " " " " " " 

138½ " " " " " " 

139 White Mud R. July 3.
bottom land.

140. White Mud R. July 3
clay bank.

141. White Mud R. July 3,
clay bank.

142 White Mud R. July 4
dry bank.

143. White Mud R. July 4
dry bank. Juice with
Mulleedijum 2 sp.

144. White Mud R. July 4
Common grass of dry
uplands everywhere west.

about white cut. forms
short curly sod.

145. Common near streams
on banks. W of Woody ^{Mt.}

^{sp. nov.} White Mud R. July 4.
? of Shepherdia argentea

146. White Mud R. July 4.
dry banks. (See notes)

147. Near Woody cut, July 5.
Valley near stream!

Asclepias purpurascens
148. Near Woody cut July 5.

open pr.

Gilia minima (G. Col.)

149. Near Woody cut July 5.
Common everywhere
S of cotean on the dry
hills.

150. Coule' open passy
19 m. S of woody mt.
July 7.

151. Coule'; 19 m. W of
woody mt. July 8.

152. Near woody mt. July 7.
Wooded ravine.

153. Near woody mt July 7
Swamps.

154. " " " "

155. " " " "
Flower white.

156. Near woody mt July 7,
Swamps.

157. Near woody mt
Coule' banks July 9.

158. Near woody mt July 9
Barren pr.

159, Near Wood, Mt Jagg
Edge of salt pool, Saline
Soil.

160. " " " "

161 Fossils from Sombre
Clays. Valley $11\frac{3}{4}$ miles
E. of crossing of White
Mud R., by the road.

162. Near White Mud R.
July 10. Swamp.

163. North Crossing White
Mud. July 10. Valley bottom.

164. North Crossing White
Mud. July 11. 5 prairie
everywhere. The Indian
Swamp so called.

165. Dept - White - Mud R.
~~First seen~~ This fossil
first seen in the valley &
not mentioned.

166. Valley white mud R.
dry clay banks & flats.
July 11.

167. Valley white mud R.
& open pr. July 11.
first blossoms.

V. Westward from White
Creek R. To Foot-Hills of
Rocky Mts.

V. 1. Shells from lake 500
m. point.

V. 2. open prairie July 11.
near White R.
Flower greenish, ^{lavender}~~purple~~
tipped.

3. Swamp 40 m. W. of
White R. depot. July 12.

4. near East Fork depot
July 13. Valley of creek.

5. " " " "

6. Shells East Fork White R.
all appear to have travelled -
cannot find any alive in
stream.

7. Cret. Fossils & Lignite from
drift - same place.

8. Associated "Quartzite"
pebble drift. Same loc.
9. Sample of drift Clay
East-Fork Mulk R.
10. Dry bank, July 17.
East-Fork Mulk R.
11. W. Fork, July 18.
Grasshoppers have
destroyed the leaves.
12. Sliced wood, Coulé
6 m. W of East Fork
- 13 " " "
14. Fragments of strea?
from sandy clay overlying
the carbonaceous shales
(marked in section)

15. Fossils from ~~the~~ Section
on line - Milk R. Bed
near base of section &
considerably below the hard
sandstone horizon.
The bones are all probably
parts of same animal.

16. ostrea Lower part of
Section July 21. (See notes.)
About 7 m. up Milk
R. from line,

17. Fossils from upper half
Section about a mile N.W.
of last. The hard sandstone
horizon being near the top of the
bank.

18. Fossils from Section
sketched July 23. The ostrea
occur chiefly in the upper

bed immediately below
the sandstone. The
small shells near
the ligulae as indicated
in the sketch.

19. Fossils from W. Side
Milk R. near Line.
(Ashe Col)

20. Fossil Rattlesnake
Killed July 22.

21. Layer 26 of Section
July 18.

22. Amber from ligula
Section of July 23.

23. From drift Creek
8. m. E. of East Fork
Milk R.

24. Calamospiza bicolor
E. fork Milk R.

25. " " " "
Valley 6 m. W. of E. Fork.
four in nest. One
spotted. Egg quite
fresh.

26. West Butte. July 26.
dry bank.

27. West Butte July 26
brook bank.

28. Three Buttes. Coule
bank. July 25.

29. Three Buttes Coule.
July 25.

30. Three Buttes July 24
dry banks.

31. " " "

32. Milk R. Coule.
July 21. Eggs
yellow & almost the

Size of that of Sium perenne

33. Near Milk R. July 22.
open pr.

34. Poplar common in
valley of Milk R. &
attaining a large size.

35. Near Milk R. bottom
land. July 19.

36. Flowers Mammular
Cactus, woody Mt
Astrucian station.
July 6.

37. Milk R. July 19.
Coale bank.

38. Three Buttes July 26.
dry valley.

39. Three buttes, Coale
July 28.

40. " " " "

41. Central igneous mass
East Butte.

42. Trap dyke 9 mi. N of
East Butte.

43. Altered shales in
contact with East.

44. Sombre clays flank
of E. Butte.

45. W. Bank Milk R.
near the line, 20 ft-
below prairie level

46. Lower down in same
bank.

Ashe col.

47. Fossils from hard
layers in Sombre
Clays on ^W flanks of
W. Butte near
Astron Str. July 28.

48. Near top of W. Butte.
July 29. Pine woods

49. Top of W. Butte
July 29. Scree.

50. W. Butte. Wet ground
July 29

51. " " "
flower bright yellow.

52. W. Butte. Dry hill.
July 30.

53. W. Butte. Open pr.
July 30. Flower pale pink

54. W. Butte. Open pr.
July 30. flower
pale yellow. inner
line of petals (lipolete)

(blowes) very fevverely
aborted, glandular
strong coarse minty
Smell +

55. Top of W. Butte
on logs &c.

56. W. Butte July 31.
Cove.

57. Upper Cretaceous?
Sandstone W. Butte.
Overlies the Sombre clays!

58. W. Butte. Bank of
Stream. Aug 2.

59 " " " "

60 " " " "

61 " " " "

62 " " " "

63. " " " "

64. " " " "

65. " " " "

66. Bones from Section on
Milk R. 6 M. W of
Second crossing of S. F
line. (The fragments
fit together). Aug 5.

67. Bones from Same
Section. All these
found near together.
The certainly parts of
Same done up in
one paper.

68. " " " "

fragments of one
broad blade like bone.

69. Fragments of fossils.

70. Bones from same section.

71. " " " "

72. " " " "

73. Shells &c. from same section. Overlying sandstones.

74. Nodules occurring in lower green clays. Same section.

75. Nodules occurring with bones in same section. Coprolites??

76. Eggs of Cliff Swallow,
nest of mud stuck to
ledges of rock. W.
Butte.



77. Shells from Small Lake
in point.

78. Second Crossing
Milk R. Aug 5. Dry
bank.

79. " " " " River way in

80. " " " " " "
dry banks of prairie.

81. " " " " "
dry banks of prairie

82. " " " "
bottom land.

83. 3rd crossing Muck R.
Aug 6. Valley.

84. " " " "
wet bank of R.

85. " " " "
Rich bank, Natural
double of species
collected previously.

86. For diatoms. Lake
at m. Rt.

87. 3rd crossing of Muck
R. Aug 6.

88. Near Second Crossing
Muck R. Aug 5.

V. 89. Fossils from drift
stone. Second Crossing
Milk R. (Evidently from
same rocks as V. 90)

90. Fossils from limestone?
Concretionary layer
among granitic sandy clays
& sandstones. 3rd Crossing
of Milk R.

91. Nodule from upper
part beds mentioned
under V. 90. a few miles
west.

92. Silicified wood.
20 m. W. of W. Butte.
Surface.

93. Small lake, 30'
m. W. of W. Butte.

- ~~94. Foot-hills: border of
Stream. Aug 12.~~
- ~~95. Bell R. flat,
Aug 13.~~
- ~~96. " " "~~
- ~~97. " " "~~
- ~~98. Bell R. Aug 13.
Wood. 3 1/2 ft.~~
- ~~99. " " "
juice milky~~
- ~~100. open prairie. Leaves
appear unvariable
faded.~~
- ~~101. Seed feranium? (See
specimens from woody
mt.) An infusion of the~~

VI. Foot-Hills of Rocky
Mountains

VII. Along dry bank of prairie
here eastwards. Common.
Aug. 7.

2. Foot-Hills. Thicket
& banks of streams.
Aug 7.

3. Swamp meadow
Aug 7.

4. Dry Hillside. Aug 7.

5. " " "

6. Thicket Aug 7.
Flower white.

7. Thicket. Aug 8.
8. Thicket Aug 8. 3 + 4
feet-high.

9. Thicket. Aug 8.
White.

10. " " " "
Red variety of VII. 9

do not seem to
agree with any sp. of
Castilleja in wood of Aug

11. Swamp prairie.
flower below Aug 8.

12. bank St-Mary R.
Aug 9.

13. Swamp. Aug 9.
R. purshii?

14. " Sandstone St Mary R.
near the line.

15. Sandstone Sect. of Aug 8.

16. Silicified wood from
Sandstone, 4 m. W of St-
Mary R. Aug 7.

94 Foot-hills border
of stream. Aug 12

95. Belly R. Flat Aug 13.

96 " " "

97 " " "

98. Belly R. Aug 13.
wood 3' high.

99 " "
juice milky.

100 open pr. Leaves
appear invariably faded.

101. Seed *Geranium?*

(See specimens from Woody
mt-) An infusion of the roots
said to be used by the Indians
for diarrhea.

VII, Rocky Mts.

1. Kootanie pass Aug 14
Thicket.
- 2 " " "
- 3 " "
- 4 " " dry bank Aug 14
- 5 " " border of stream
- 6 " "
7. Waterton Lake. damp border Aug 14
- 8 Kootanie Pass, dry bank.
- 9 " " " "
- 10 " " Meadow Aug 14
- 11 flower " white. " "
- 12 " " " Border of stream.
- 13 " " " "
- 14 " " " "
- 15 " " " dry bank Aug 15
- 16 " " " Shady bank "

17. Kootame pass. Aug 16.

18. " " "

19. " " thicket, Aug 16.

20. " " "

21. " " "

22. " " " "

23. " " " "

24. " " " "

25. " " " "

26. " " " "

27. " " Aug 16.

28. Peaks. Aug 16.

29. " "

30. " "

31. " "

32. Peaks Aug 16. past
flowering in the valleys but
common to form a sod
in some upland meadows.

33. Kootanie pass Aug 16.

34 " " "

35 Peaks Aug 16.

36 " "

37 Kootanie pass Aug 16.
flower bright purple. Musty odour.

38 Peaks Aug 16.
~~fl. bright~~

39 Peaks " "
flower whitish.

40 " "
flower well yellow.

41. Peaks Aug 16.

42. Kootanie pass Aug 16.
Flower tawny brown.

43. Peaks Aug 16.

44. Peaks Aug 16.

45. Kootanie pass Aug 16.
a delicious berry.

46. Peaks. Aug 16.

47. Kootanie pass Aug 16.
flower wax-yellow.

VII. 48. Kootaine pass Aug 16
flower white

49. Kootaine pass
Aug 16. Last blossoms,
flower purple.

50. Kootaine Pass
Aug 16. Key seeds
like ordinary maple

51. Boundary trail valley
Aug 17. Camp Akamina

52. Camp Akamina
Wet ground Aug 17.

53. " " "

54. Camp Akamina Aug 17
Thick wood.

55. Camp Akamina Aug 17.

56. Camp Akamina
Aug 17. low ground.

57. Camp Akamina
Aug 17.

- 58 " "
59. Camp Akamma Bank
of Stream Aug 18,
- 60 " " " "
61. Camp Akamma, thick
wood Aug 18
62. Camp Akamma. Aug 18,
63. Peaks, among rocks
Aug 18,
64. Peaks. Aug 18,
65. Peaks Aug 18,
66. flowers purple "
67. " "
68. " "
- 69 " "
- 70 " "
- 71 " "
- 72 " "

73 Peaks Aug 18,

74 u u

75 u u

76 u u

77 u u

78 u u

79

80

81

82 flower purple

83

84

85

86

87

88

89

90

91

92

flower yellow

93 flower yellow.

94.

95.

96.

97.

98.

~~99~~

100

101. Duplicatae accidentale

Separated from the

rest. Peaks. Aug 18.

102. Root cane pass. Aug 19.

Shrub 3' high.
leaves covered with fogfruit gum.

103. (Banksian Rine)

104. } ? if Banksian Rine.

Pinus contorta var
latifolia Engelm.

VI. Lost Hills near Waterton
Lake.

102. Meadow. Aug 26.

103. Swamp thicket. Aug 26.

104. Meadow Aug 26.

105. " "

106. " "

107. " "

108. Wet Hill sides. Aug 26.
fruit sometimes green.

109. Meadow Aug 26.

110. Rocky Mt. Sides Aug 26.

111. Thicket - Waterton Lake Aug 29.

112. River bottoms & Vallis
Billy R. Aug 29. Common
& grows to a large size.

113. ~~Shady~~ bank. Aug 28.
From form of dried pods
being round probably a
Vesicaria.

V. 94. Coal from St
Mary R. $\frac{1}{2}$ m. W of
line.

95. Fossils from ridge
4. m. W. of St Mary R.
overlie sandstone with
silicified wood. See
Notes Aug 7.

96. Bed overlying the coal
above mentioned.

97. Shale occurring with coal.

98. Fossils from bed overlying
the coal & occurring in
bank near same level.

99. Calcite occurring in
beds near the coal.
appears! - full joint eye
planes.

V. 100. Same place as
V. 66. 4th i

101. 6 m. W of 2nd branch
mill R. Wet border of
stream. Sept. 1.

102. Same place. Dry clay
bank. Sept. 1.

103. Same place. Dry clay
bank. Sept. 1.

104. " " " " " "

V. 105. Ironstone from beds
in Coule' between trap dyke
Coule & Section of July 23.
- Sept 5. - (forms large lentic-
- 106 - nodule like masses).

106. Bone from same section.

107. Soft boulder 620 m.
point.

108. Shell bed from Coule'
102 (a mile or two) of
Trap Dyke Valley. 1007
E. Butte. Sept 5.

109. Milk R., Sept 9.
Open pr.
110. Milk R., Sept 9
by Clay flat.
111. W. Fork. Sept 10.
The common variety of
"Sage", plentiful on dry
open pr & in dry vallis.
112. Good L. E of E. Fork.
Low open pr.
113. Near E. Fork, Sept 11.
Cule'.
114. Seed common disc-leaved
Cactus. Now ripe. Sept 10.
Near Milk R.
115. Seed Stephanomeria
species in last years col.
Sept 10. W. Fork.

V. 116. Clay & Sandstones
bedded } combustion of
lignite. Escarpment 20
m. E of E. Fork of
Milk R.

V. 117. Baculite from
exposure 12 m. E. of
Frenchmans Cr. ?

III. Continued.

III 168. Coale'. Sept-15.

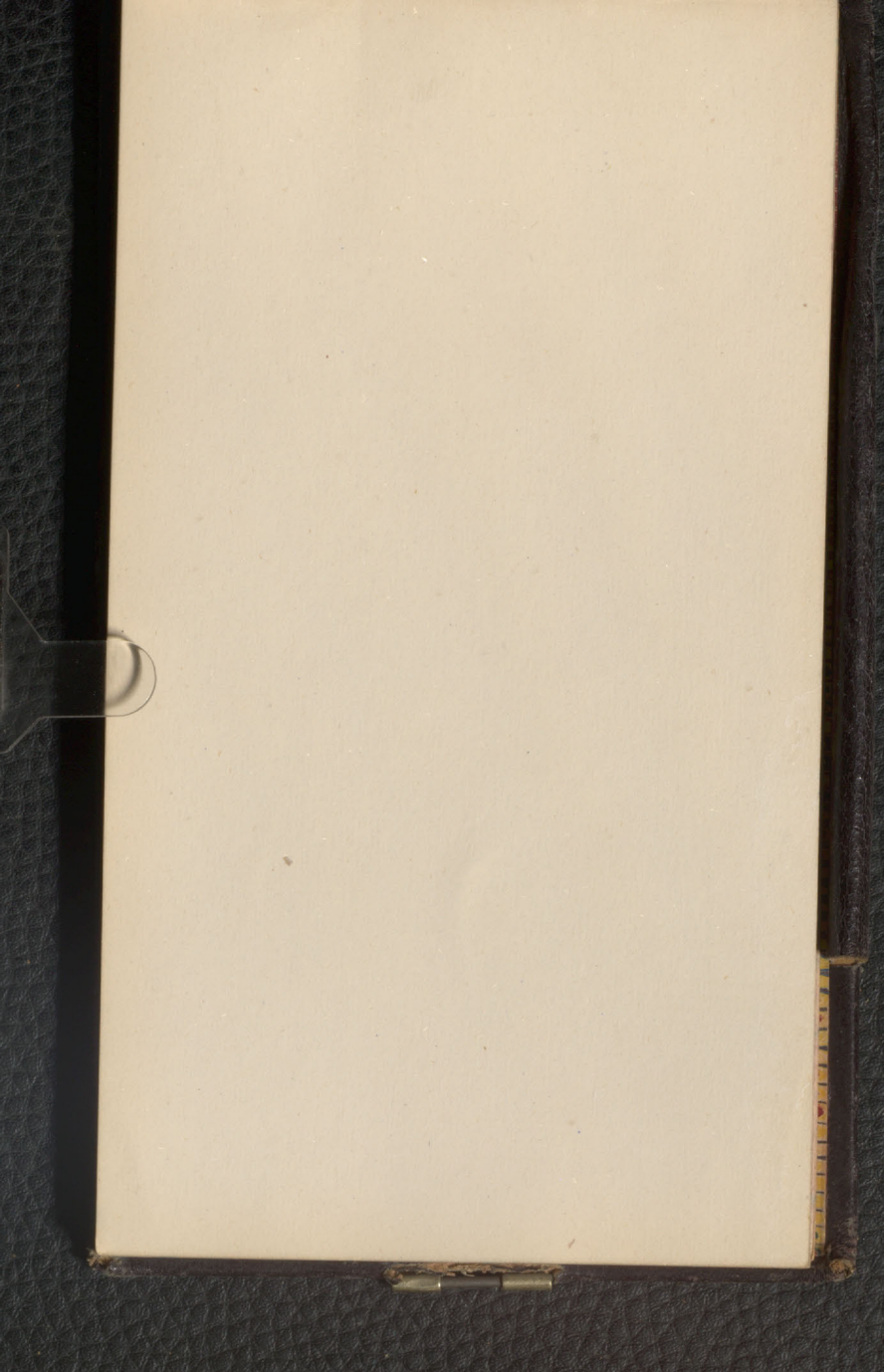
169 Bank of saline pool
Sept 15.

170. Samples of "Quartzite
drift". Creek 34 m.
W. of Woody Mt.

171. Creek 34 m. W. of Woody
Mt. Slightly alkaline.

172. Creek 13½ m. W. of
Woody Mt.

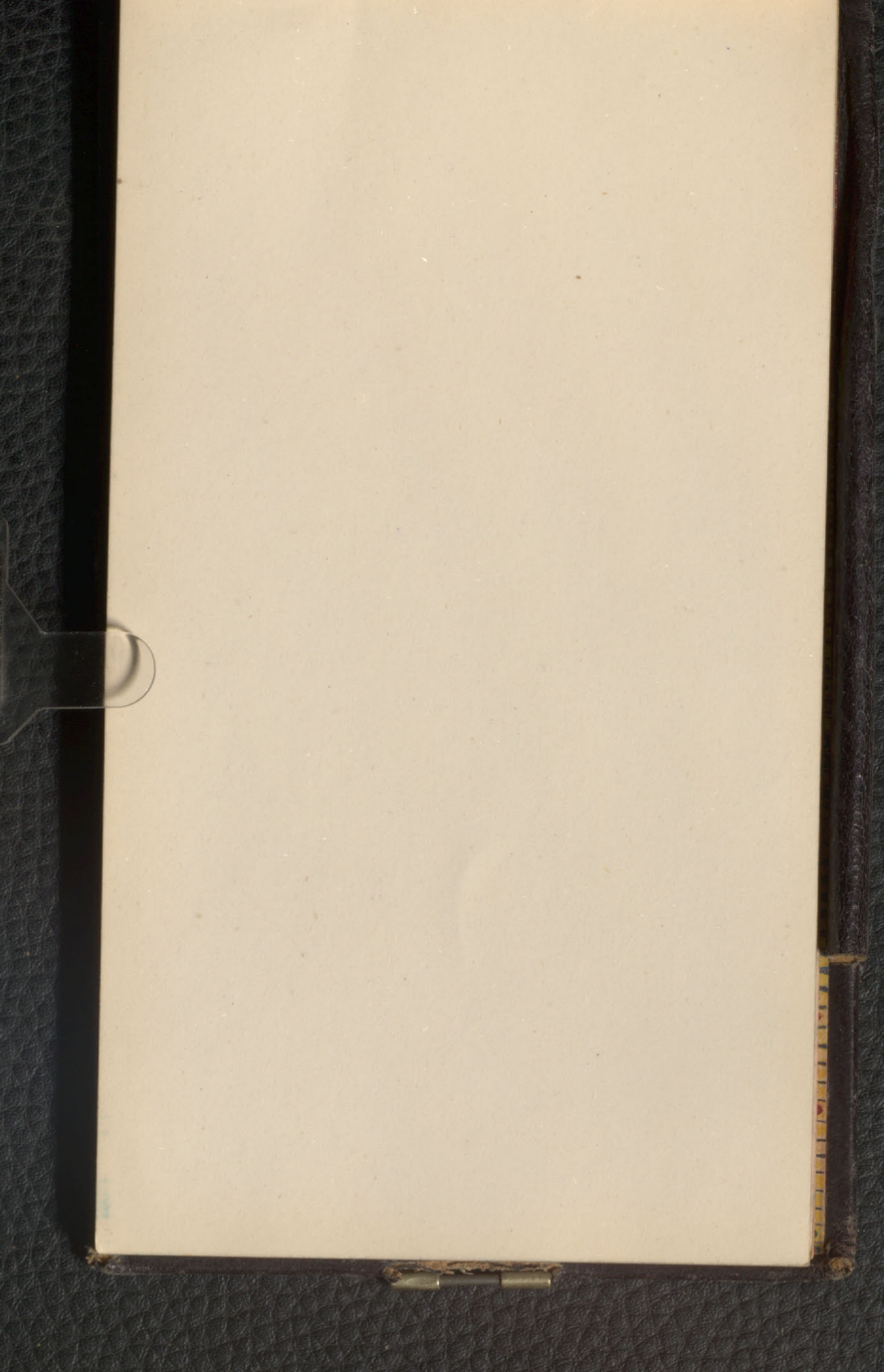




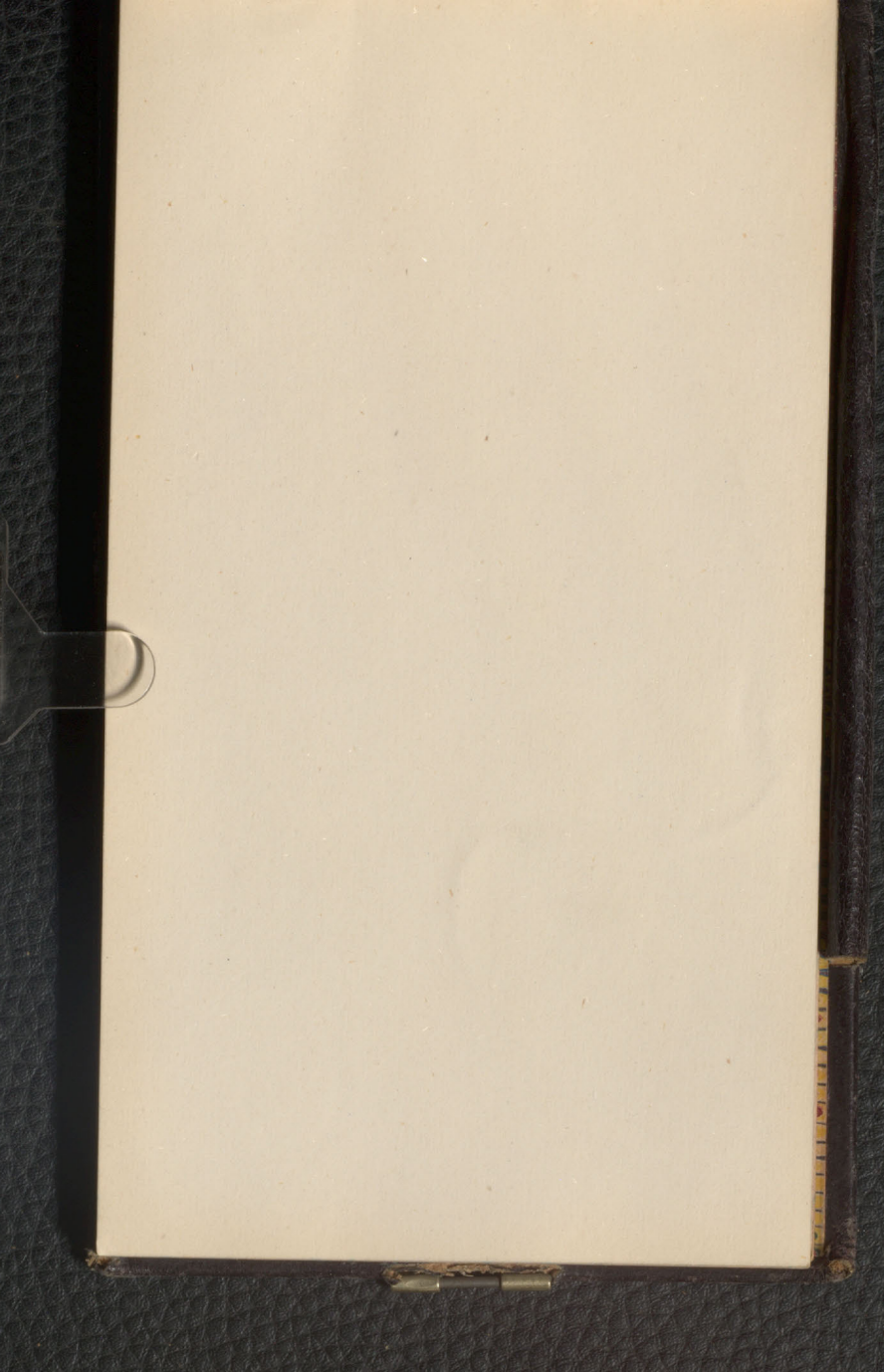




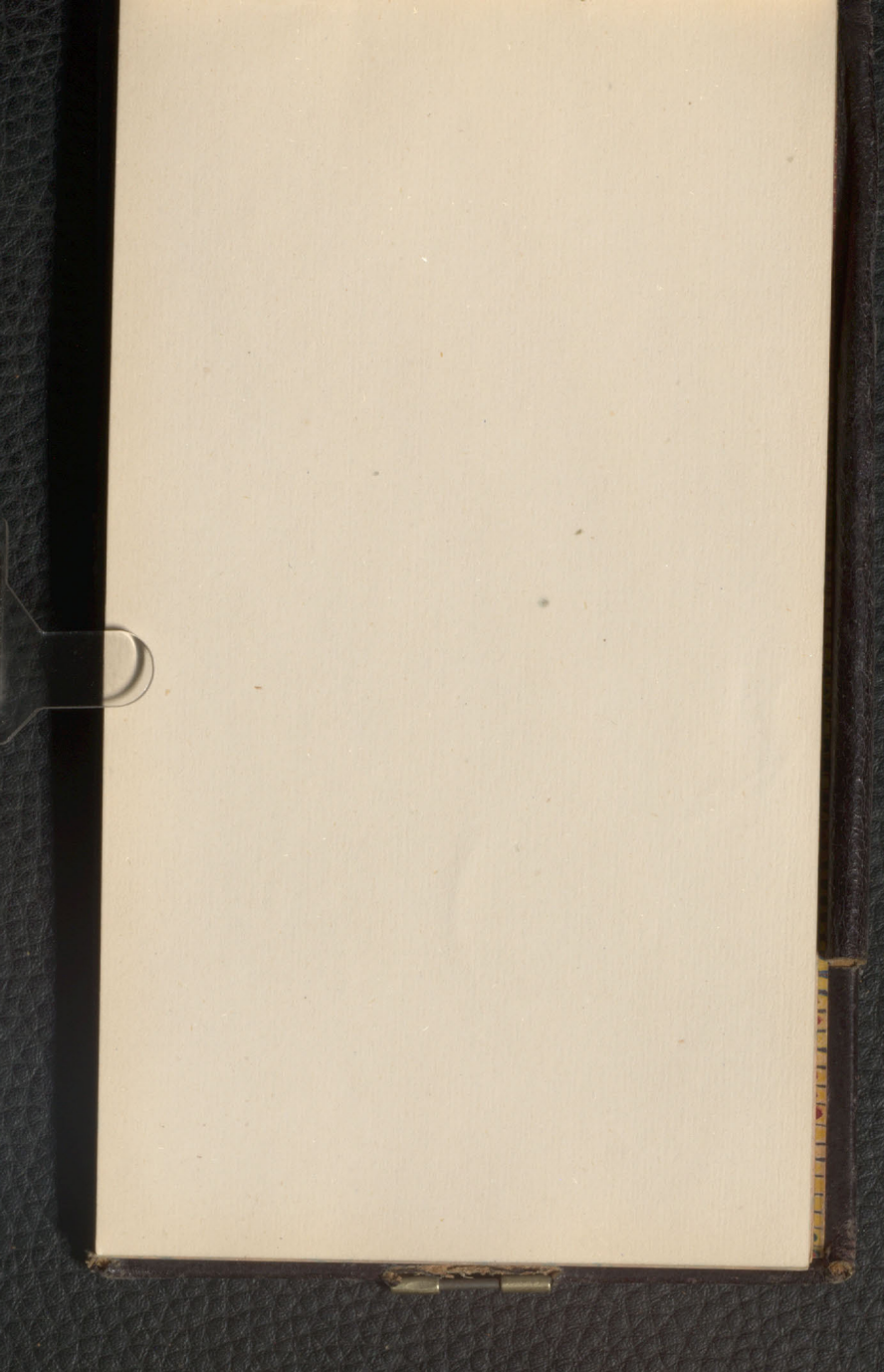




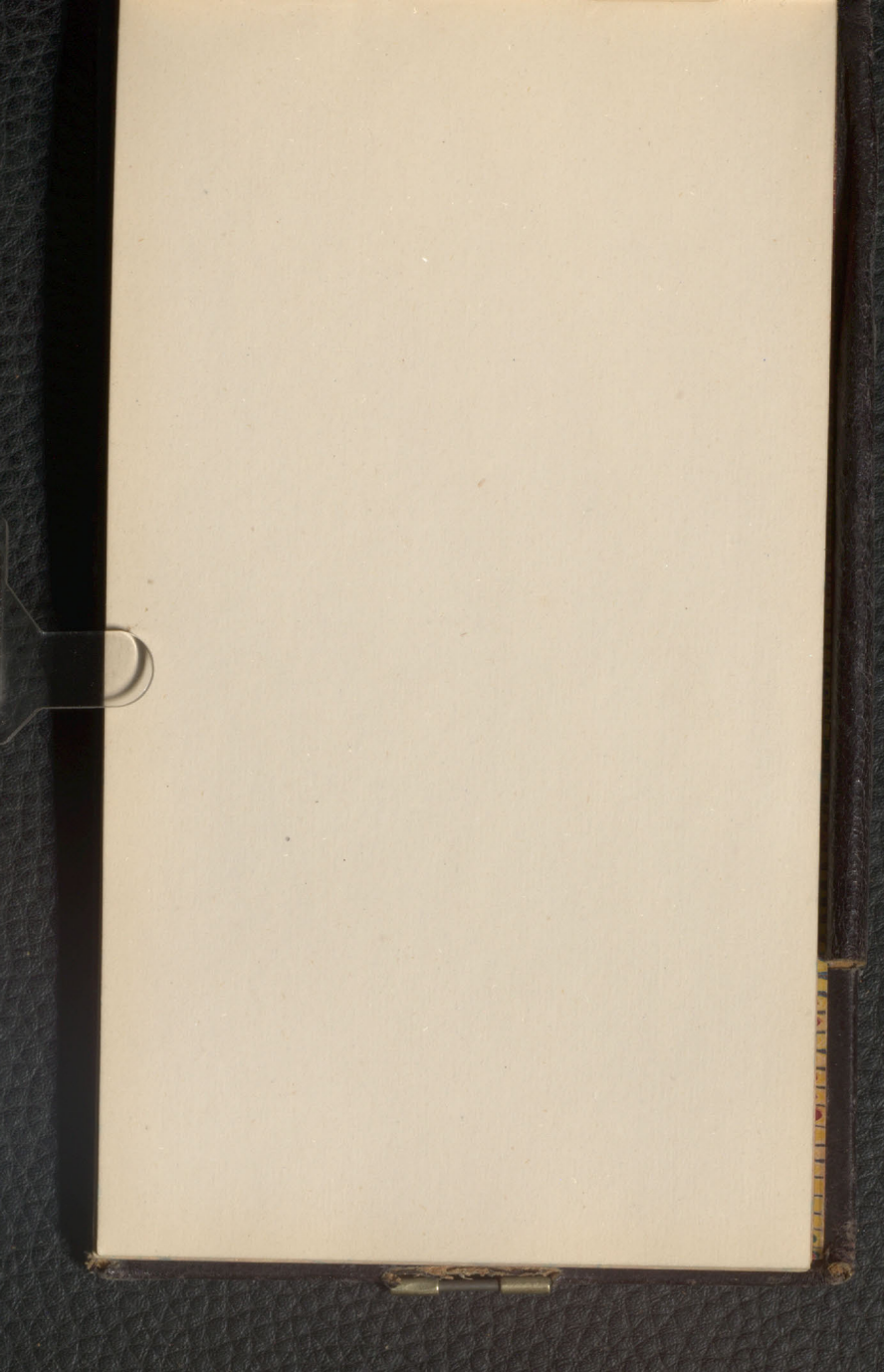


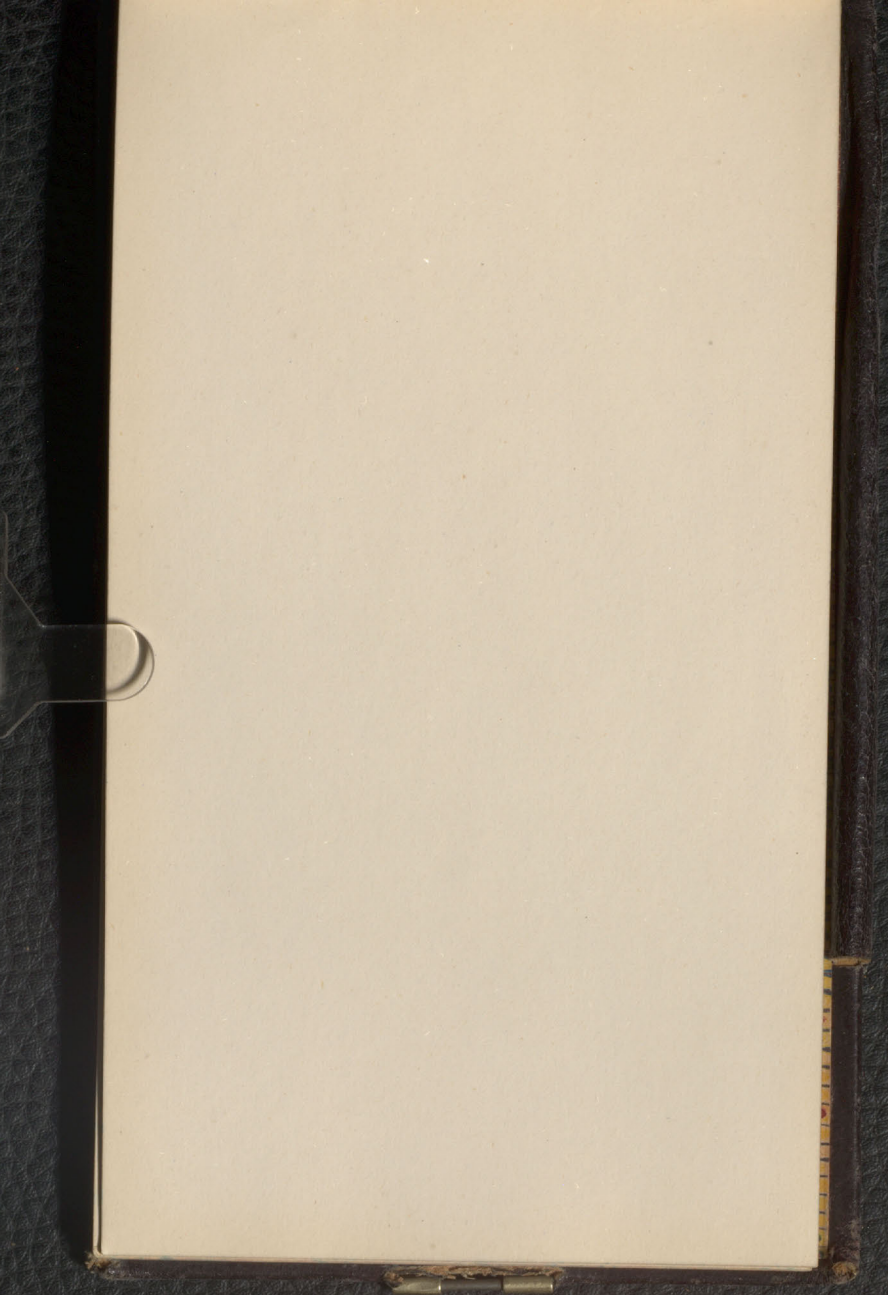






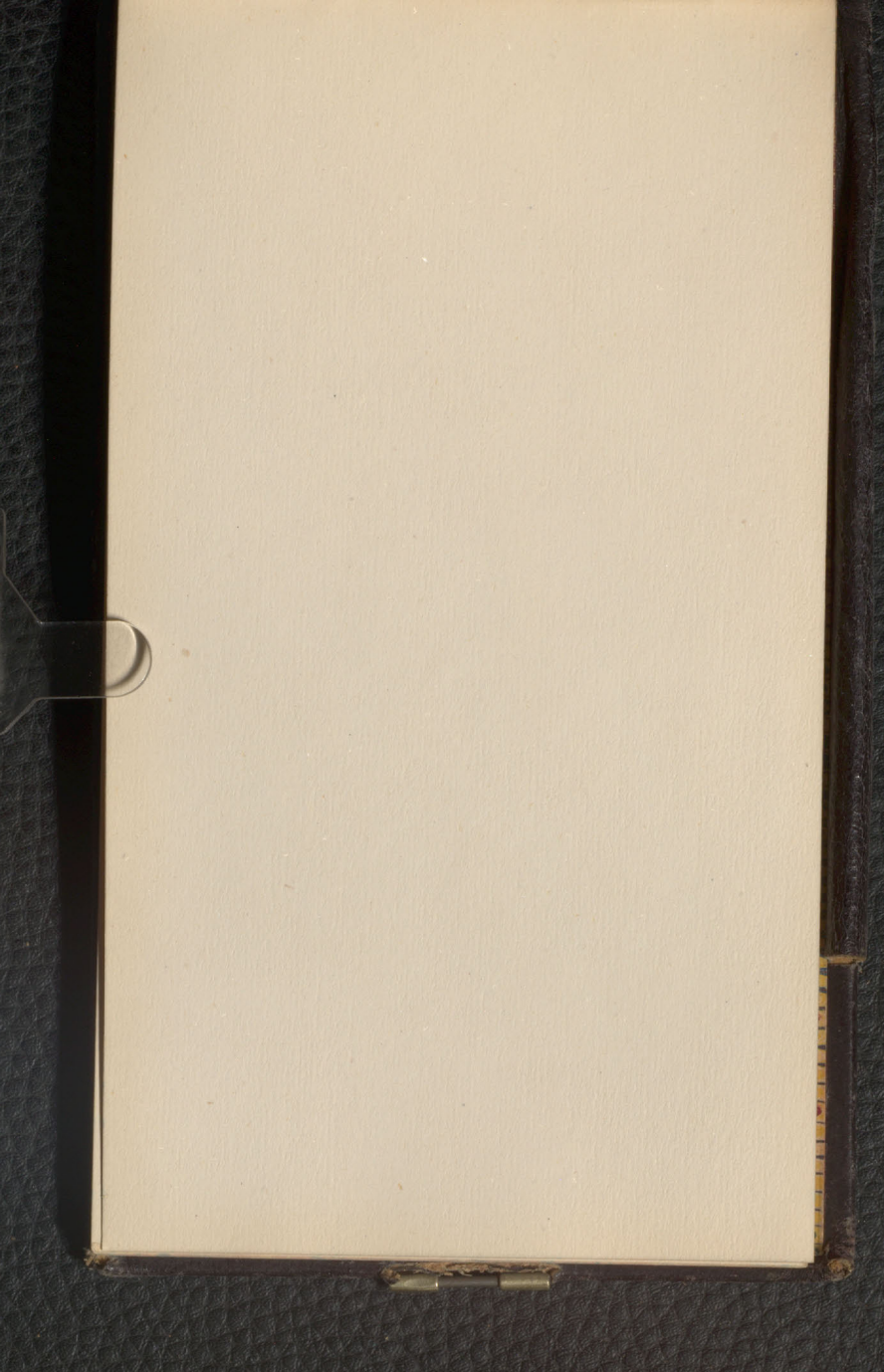








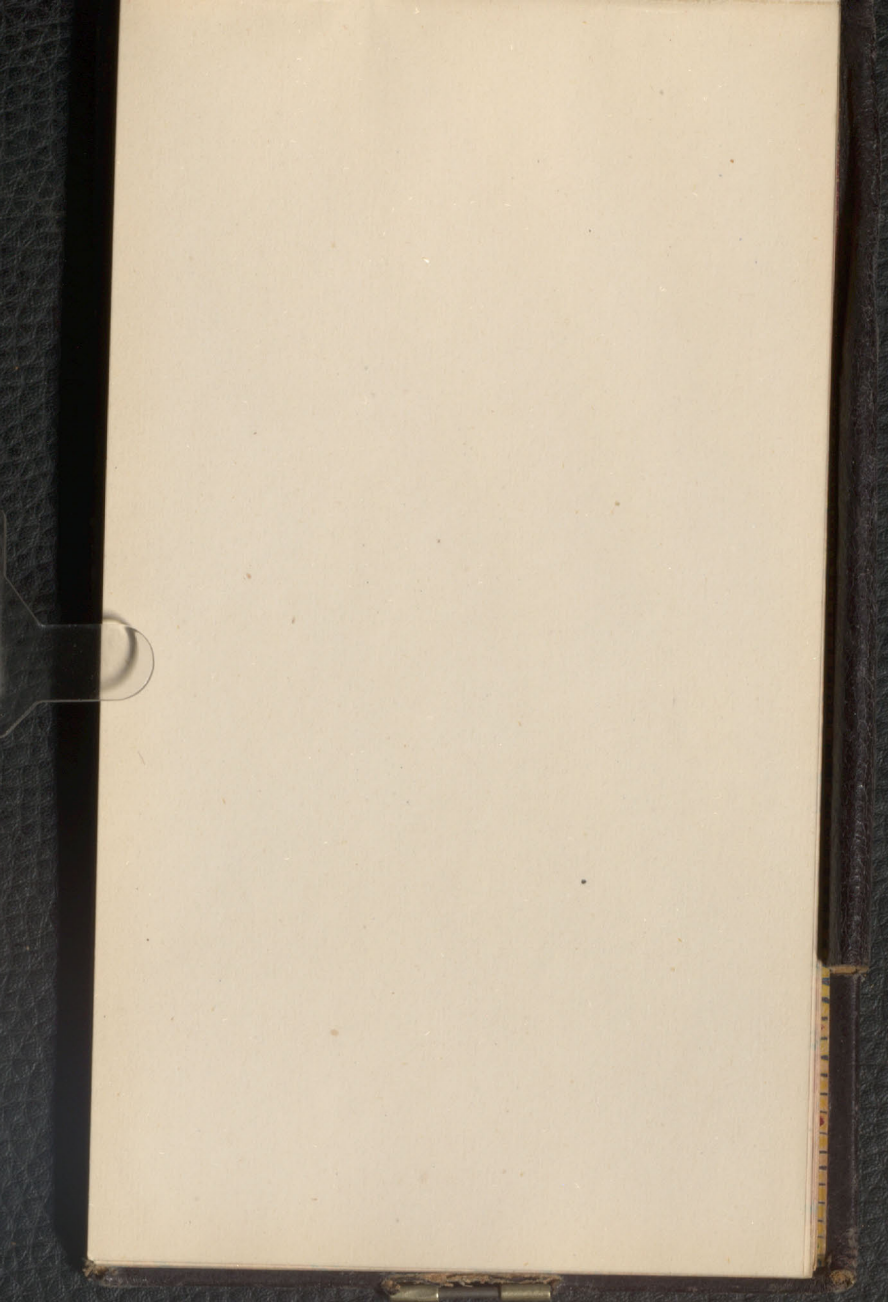




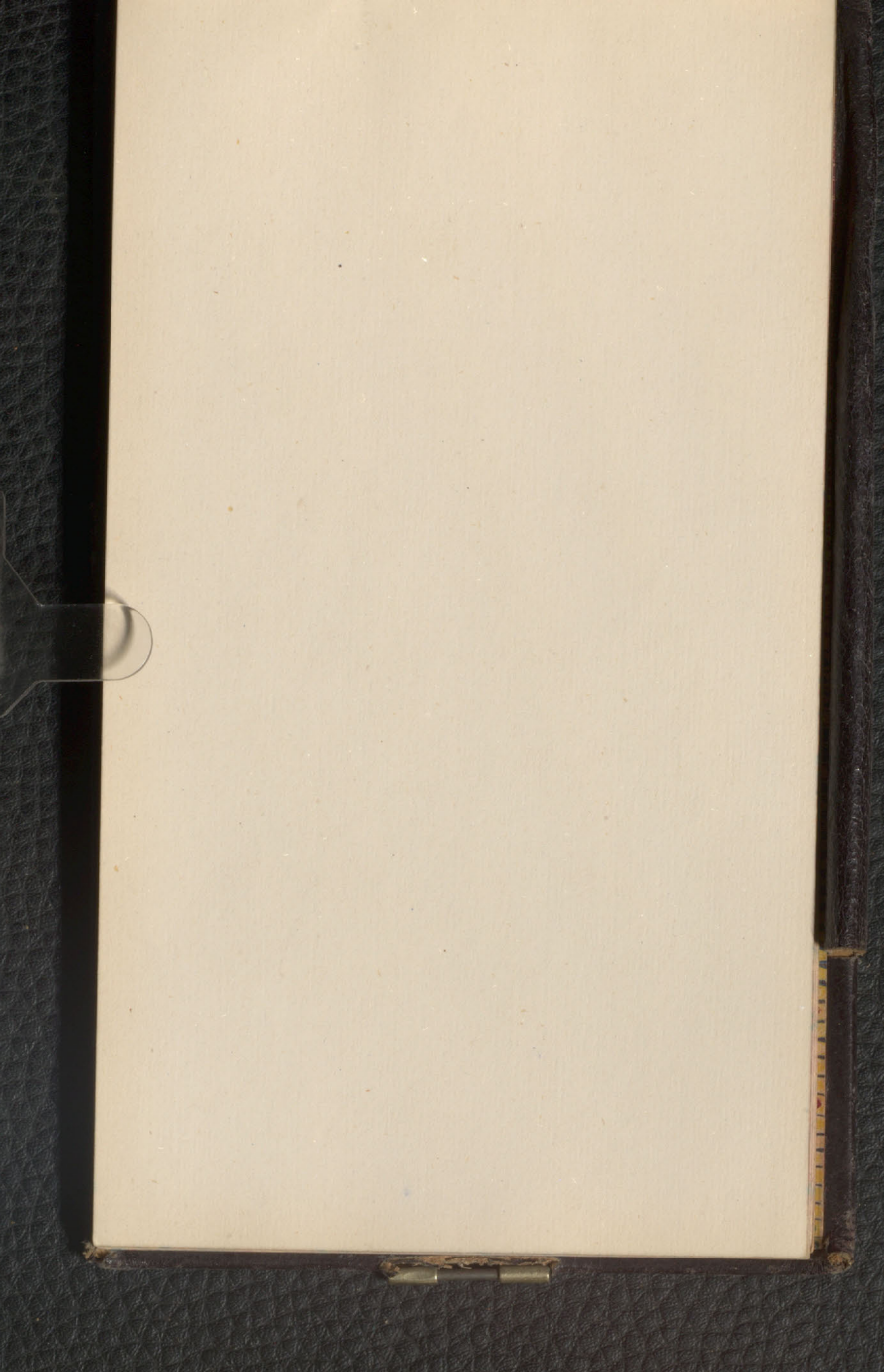














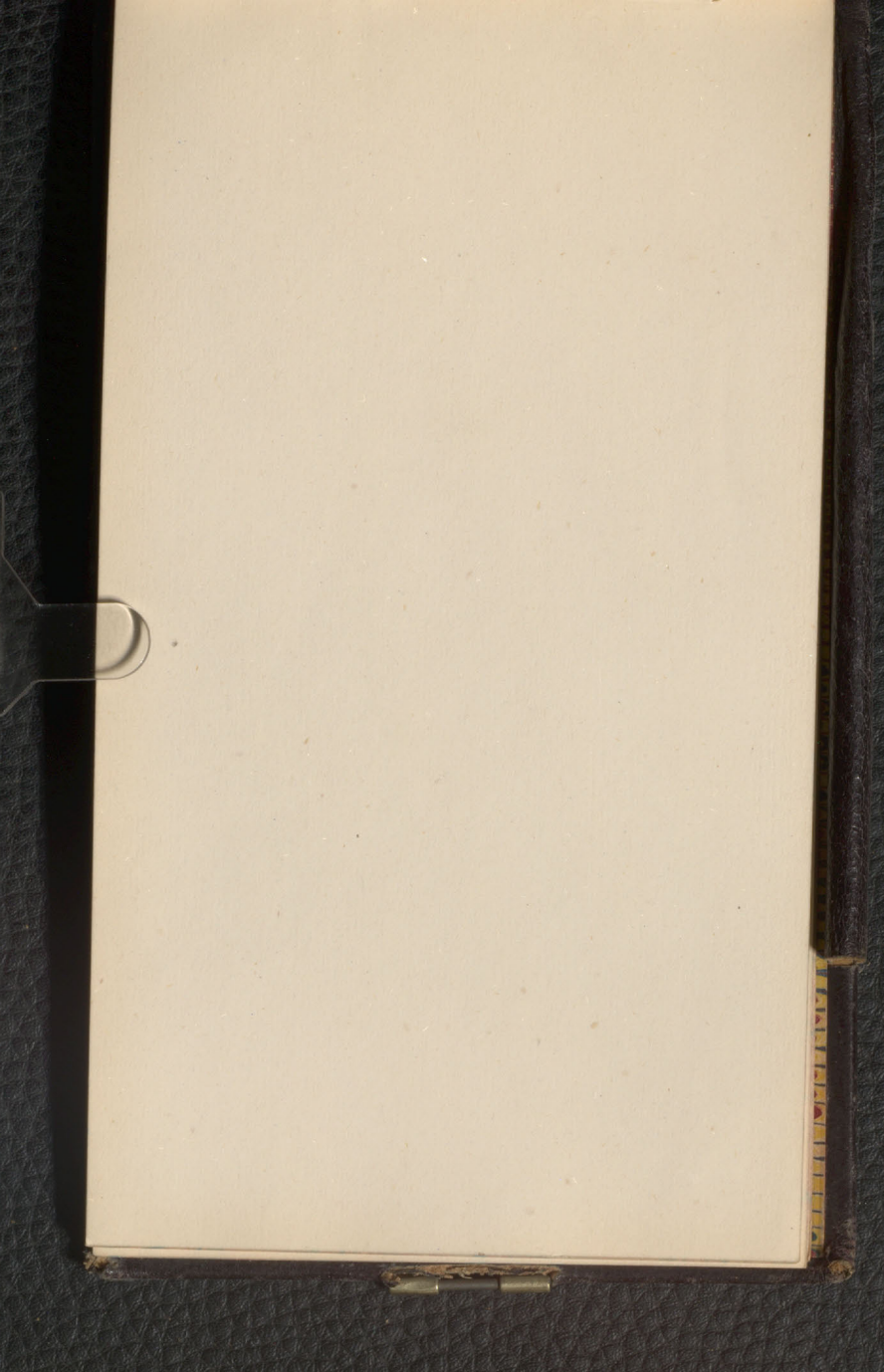


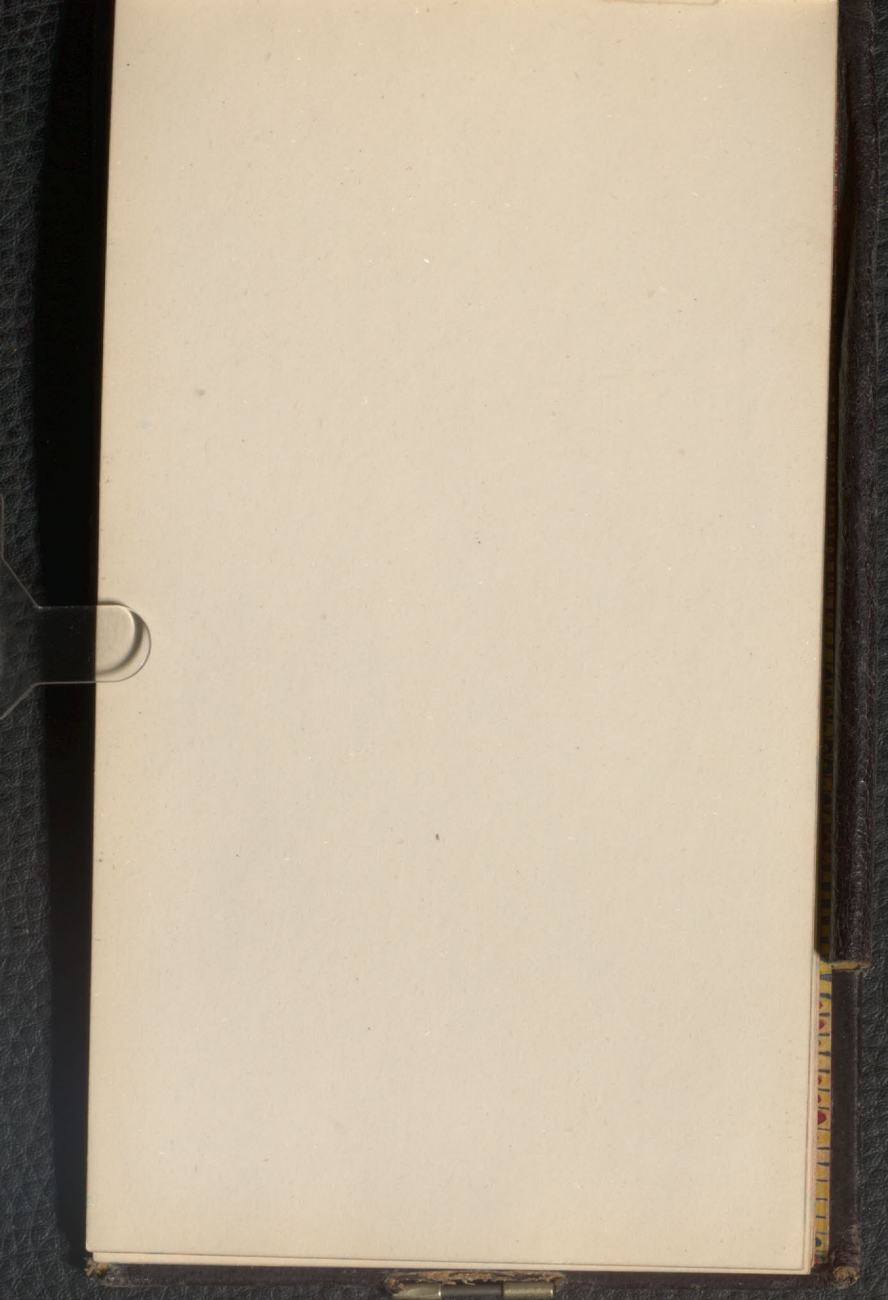


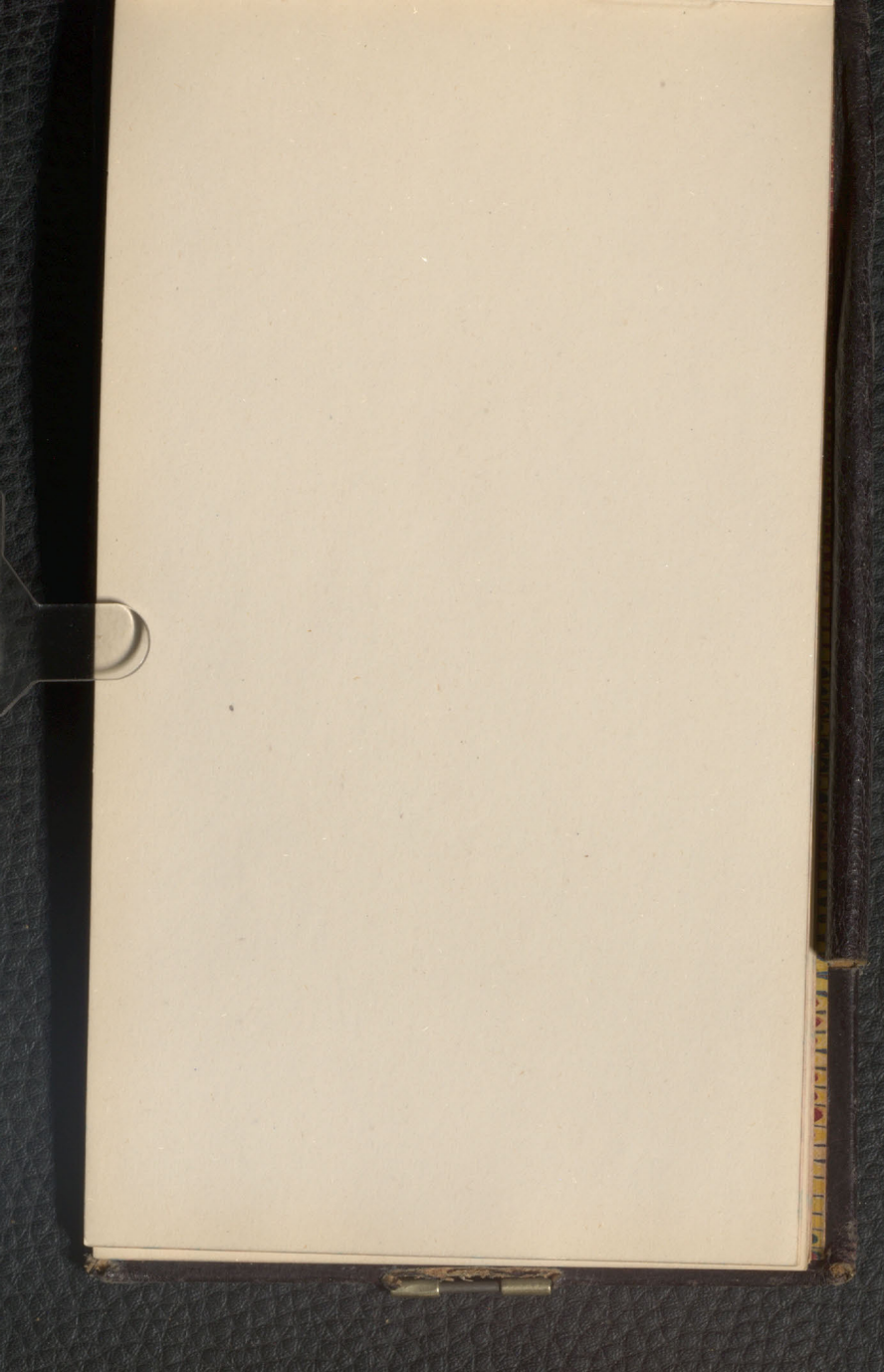
















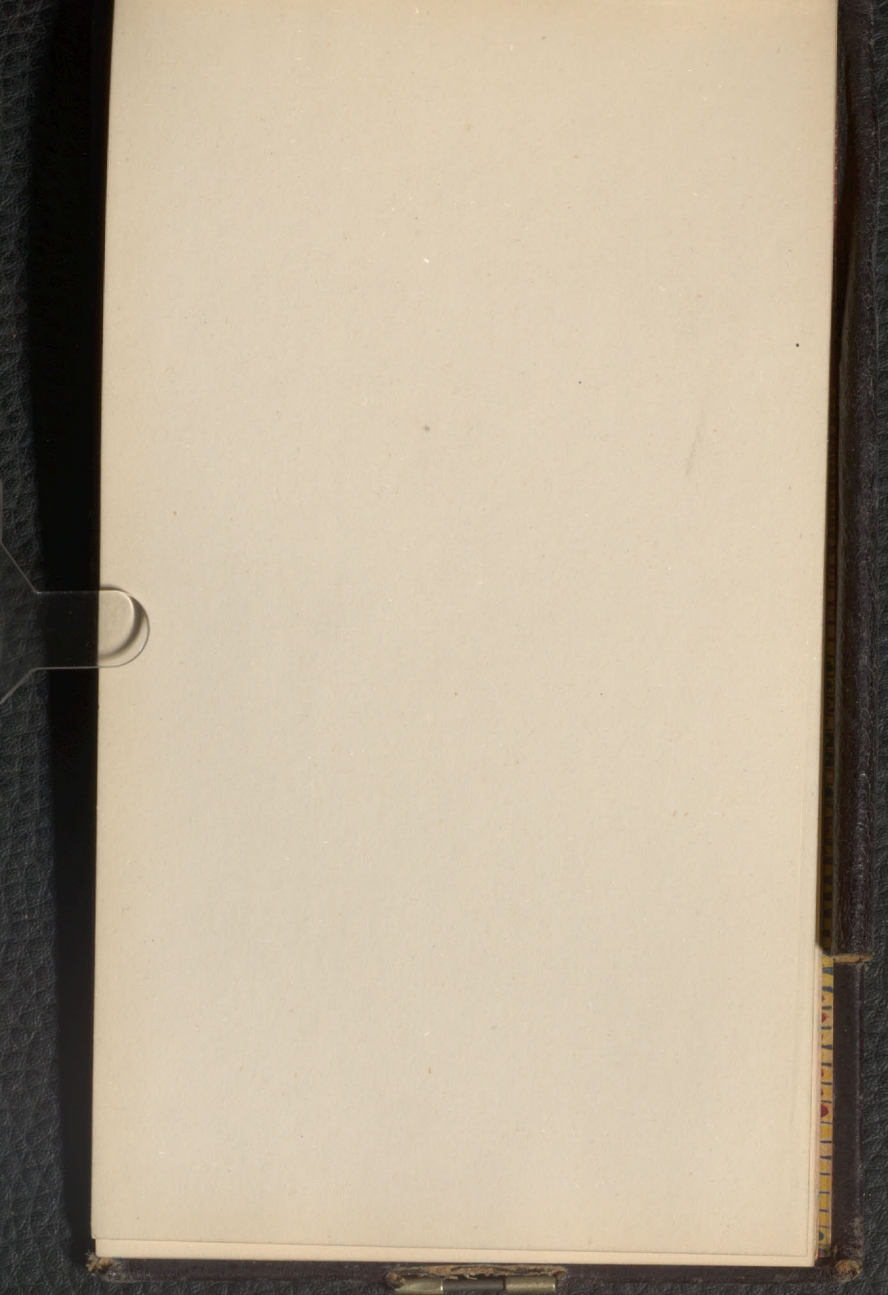




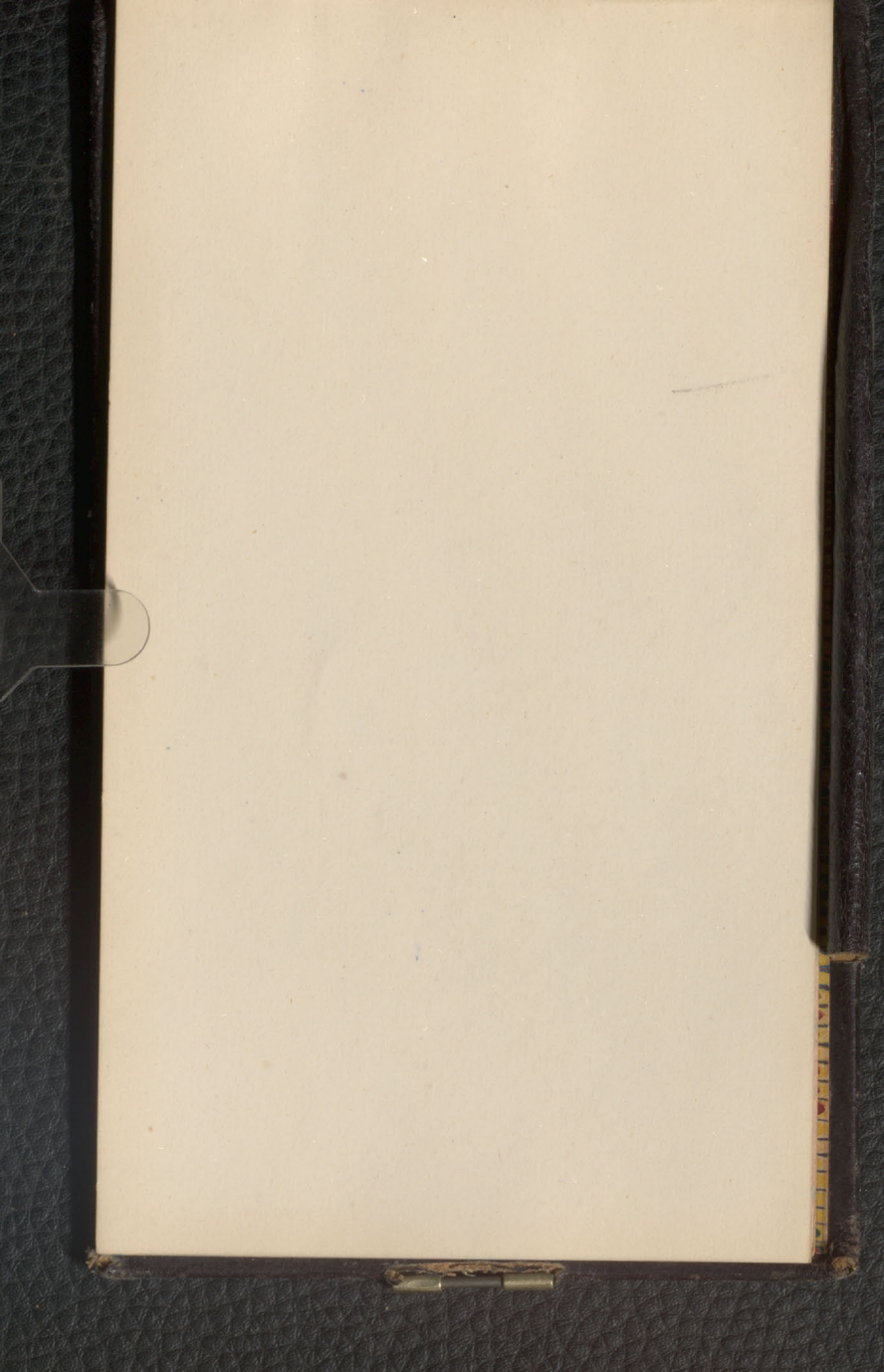








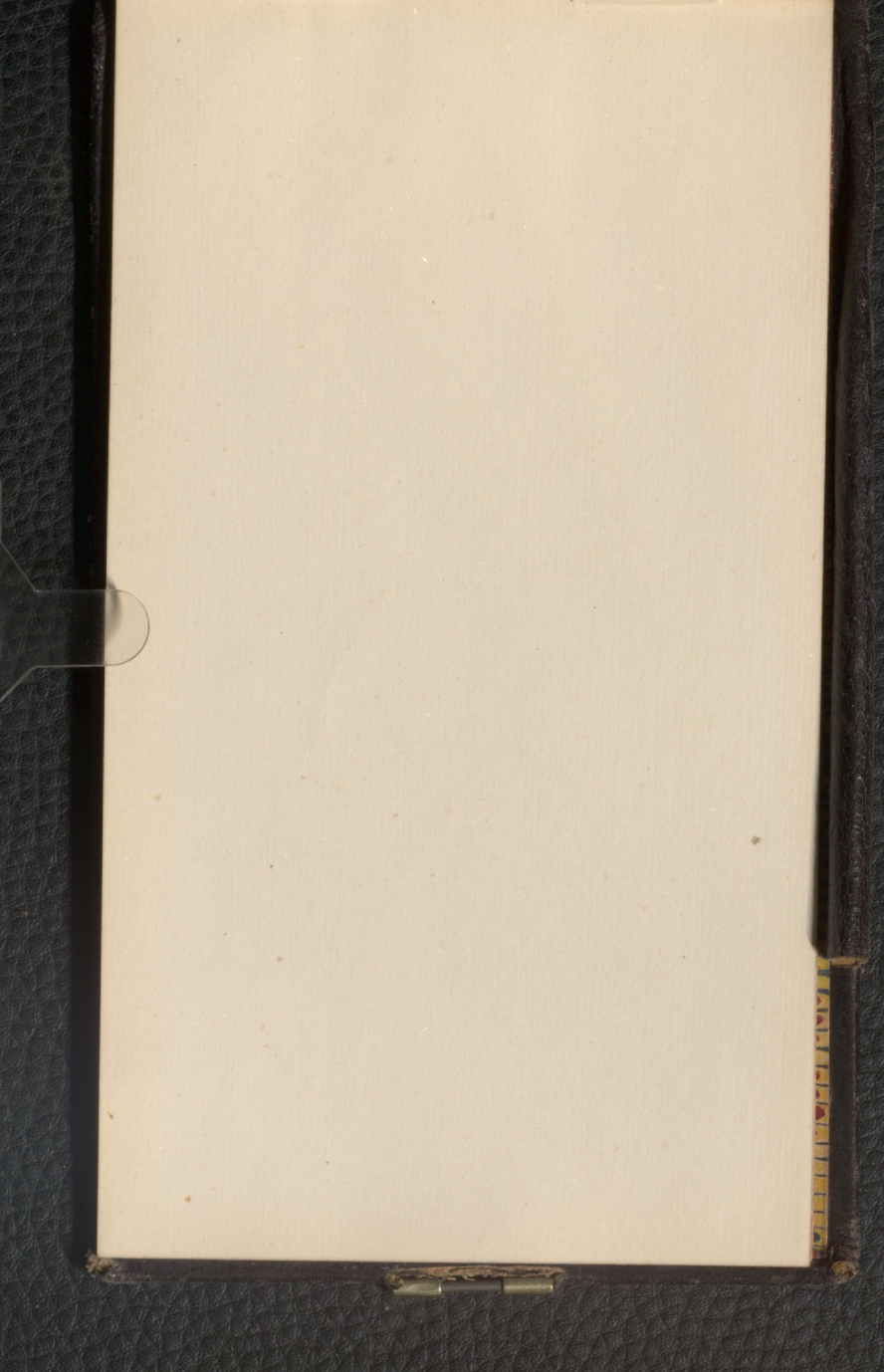




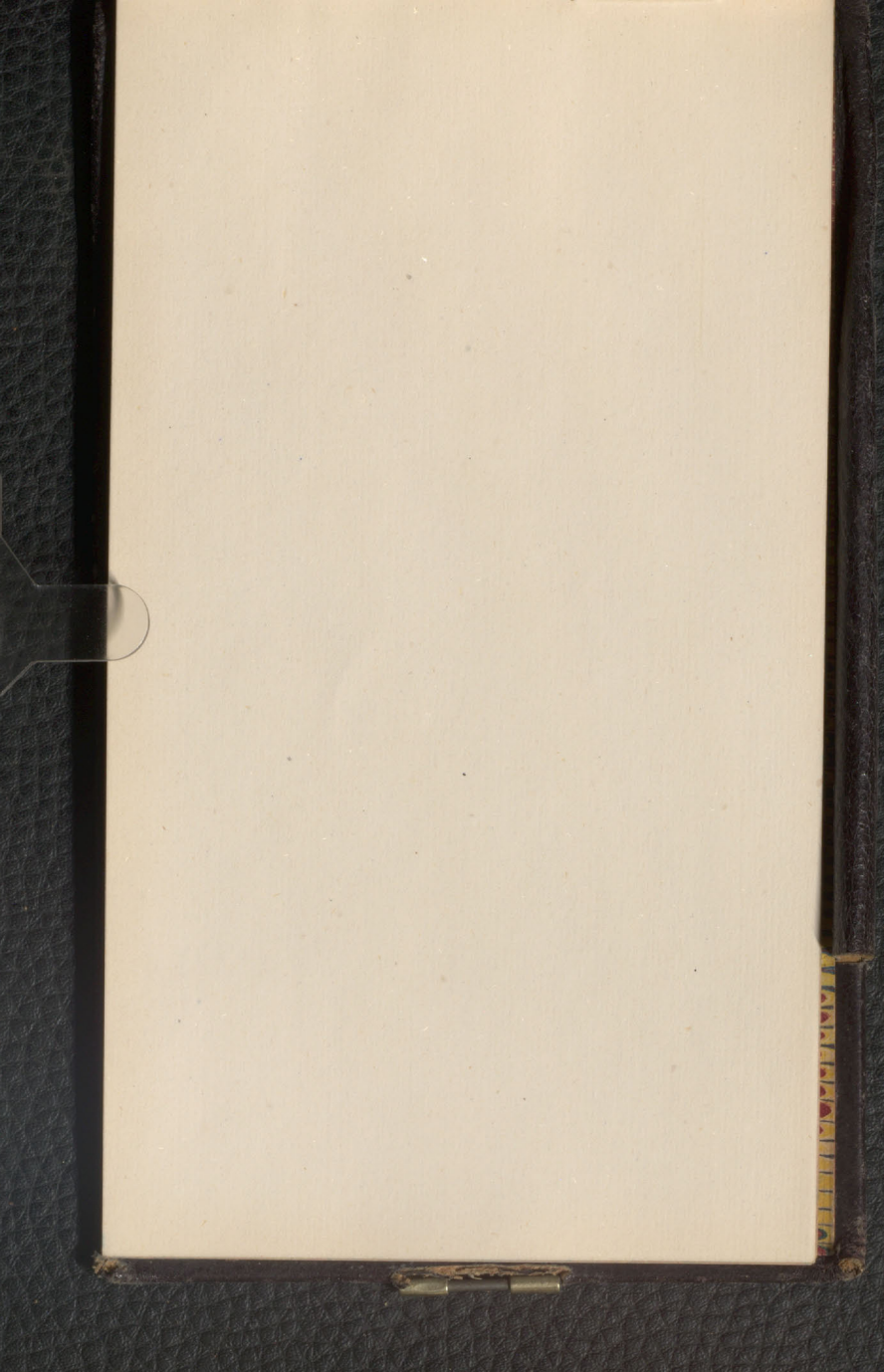




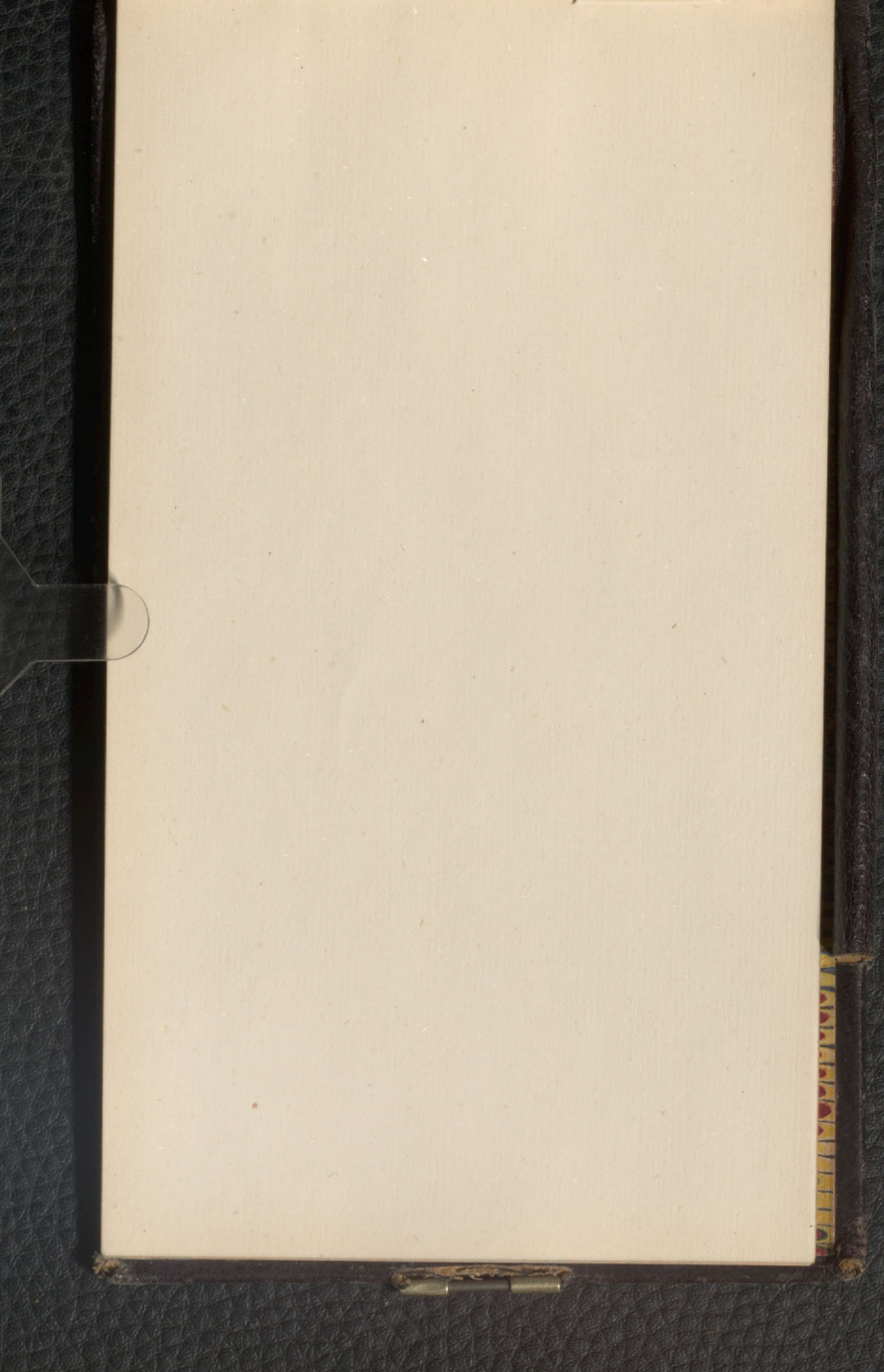















Mentha alternata with
the petals. Leaves glandular
dotted. Grows in proclumbent
tufts spreading from a centre.
By frays. Key comes near
Leguminosae.

III. 146. Calyx or corolla 5 lobed
connate at base. Lobes acuminate
stamens 5 opposite Calyx or
corolla lobes. 5 green appendages
alternate with stem. Ovary
superior or merely inserted
in sheath-like base of calyx or
corolla. Pistil 1 two cleft.
Flower pale yellow.

III. 74. Comes near
Helianium of Gray's Key.

Involucre in 3 rows. Outer
6 divided. Rays neutral 3 dylt
at extremities. Receptacle bristly
not honeycombed. Tubular
flowers perfect. Corolla 5 divided
at apex. fimbriated. Pappus of
5 thin Scales, broad at base
narrow above. Not quite equal
the corolla, Acheneia short
hairy do not seem to be beaked.

III, 131. Calyx 5 toothed. Lips
green. Petals 5. clawed, but
seem united below into a tube
the 5th petal being distinct from
the rest & with longer claw[?]
leaving a fissure down one
side of the tube. Style 1. Ovary
2 seeded. Stamens inserted
on the edge of the tube already

I. 28. Probably Androsace
Occidentalis. Calyx angular
5-parted considerably longer than
the corolla, which it envelopes.
Corolla white, primrose like,
minute, contracted at the top.
Lobes wheel shaped but show a
tendency to curl inwards.
Pistils 5? divisions ovary
5.  Seeds many, pitted.

III, 78. Stephanomeria? Flowers
all ligulate 5. petals fringed
at edge 5 teeth. Pappus of 23 plumose
hairs broader towards base.
S. minor only one described in
(Fl. Col) does not agree in number
of plumules of pappus. Or in
bracts being 2 to 4 toothed.
Otherwise very close. Flower
pink-purple.

them soft & cottony protruding
like that half ripe dandelion.

outer row of flowers ligulate
tubular below. Pistillate but
apparently barren. Inner
flowers perfect five lipped. 5
stamens adherent to anthers.
Pistil bi-cleft. Nucleus exserted
Clavate at tip. Swollen portion
minutely pubescent.



inner

In some specimens the
receptacle appears to be
slightly downy.

Colour of flower white tinged
with purple. Scales involucre
green with membranous purple
edges. About 70 flowers
in a head.

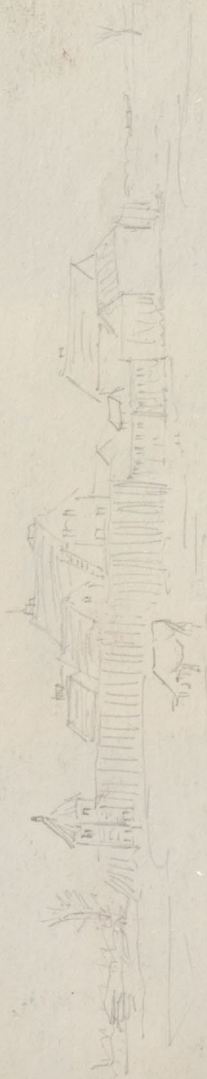


outer

General Notes on
plants &c.

II 1.42. The first plant
found in flower (except
Catkinate) Composite but
cannot determine. Receptacle
apparently naked, but pitted
for insertion of achenes. Pappus
soft white silky apparently
in a single row. Smell of
flower like Hawthorn. Two
closely similar species. Seem
to differ in foliage & in
size & delicacy of separate
flowers. Found same
plant in seed in June of
last year. Leaf large light
green soft. Pappus





Weymouth on bridge beyond main town -





These books to
be returned to
J. W. Dawson
Newstead



PATENT

HENRY FEAL