



June 30. 1864

Cypripedium,
specabile.

Sketch book of W.A. Johnson (1816-80) given by his son,
Dr. A.J. J. to Harvey Cushing & by him to the Acad. Library.
57 leaves of colored sketches, ca 1864-9. W.A.J.

Wotton, June 1: 1885
on the Railway, in dry, hard, high, clay.



Petal.

Magnified.



Pistillum &
Stamens -

The stamens appear
to be six in number
sessile on the top of the
pistillum, whose apex is
three parted. Style flat,
& twisted. The drawing
is about the natural
size.



acaule

Cyp^m
 Acaule & parviflorum.
 June 1864.

A Hairs on the leaves
 of C. Acaule, minute,
 look like golden dots,
 under a lens.



*Cypripedium
parviflorum*

Western June 4: 1864

Upper Sepal, red brown
on the outside, green yellow
in the inside. Lower
Sepal, yellow in the
inside red brown on the
two outside edges, yellow
in the middle, & crad-
ling the flower as at A.

The extremity is parted
Variety at Chaper's creek
does not cradle the
flower, but is twist-
ed like the other.

Lower Sepal
cleft at the end.
also
a variety with the
lower sepal quite
dark. near Cha-
per's Creek.



Vaccinium
pauciflorum
Cranberry
no flowers.
From the Humboldt woods July 15, 1869.



Polygalaceae (Milkwort)

Weston May 21: 1864.

Polygala paucifolia.

Fringed Wintergreen, (or more properly)

Fringed polygala.

A position of stamens

B. do Pistil.

C fringed covering to pistil.

D ovary.

E Shanks of anthers, enlarged.

F Appearance of fringe. Mag. (purple with silvered points.)

Weston. June 23/65

Stamens 5. pink & one,
growing in very dry sand.
leaves soft & pubescent.





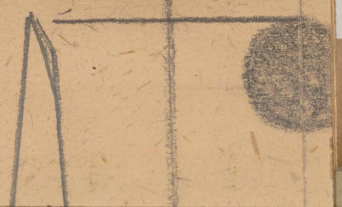
Pyrola

July 15: 1869

Pyrola

July 15: 1869

70





Salicaceae.
a Poplar or aspen, 31/III/68
one of the earliest to flower.

782



Aristolochaceae Birthwort family. See pg. 359. Gray's bot.

"*Asarum canadense*"
"Wild ginger."

Walter 22nd May 1871
W. Holley's woods.



$\frac{1}{5}$



Choke Cherry

Leaf scar



Bass Wood



Red Maple



Wild red cherry
Fruit & leaf buds. A silver
scale on the young wood.

Weston March 5, 1869
Size of nature.

2/2

1/5



Weston March 5: 1869
Oak, from the plains at Carlton
young twigs from old & young trees.
Natural size.



Weston March 5/69
Size of leaf -
Black Alder.

apparently blossoming
with the Therm. 10° below zero.
To day. & deep snow.

Bud &
leafscar.

$\frac{1}{8}$

Leaf
hood.

Wester March 5. 69.
White Walnut or
Butter Nut. Nat. size.





Winton.
March 5: 1869.
Elm.

Dec: 10: 1867. *Myxococcus* in
hole in the ice. Cattle guard near Station
1/4 inch objective.

A cell dividing.

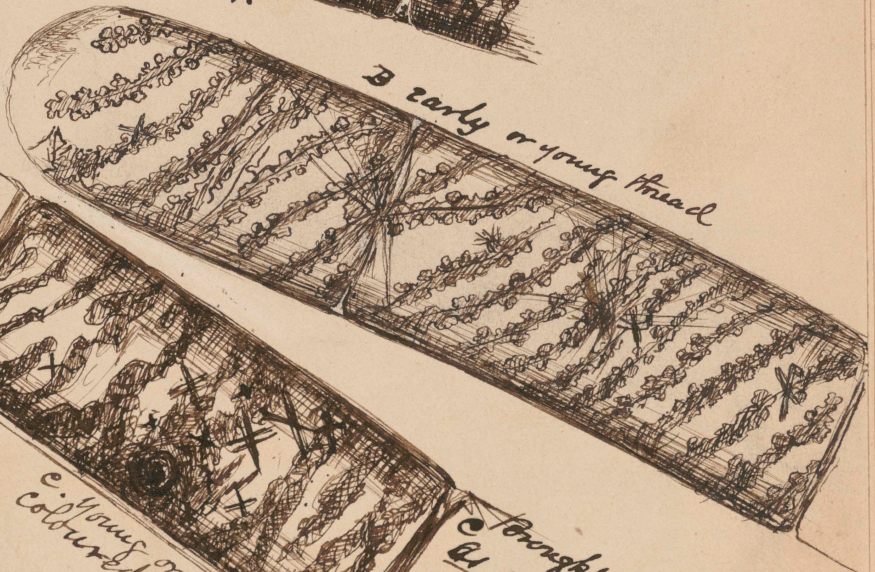
more advanced thread



B

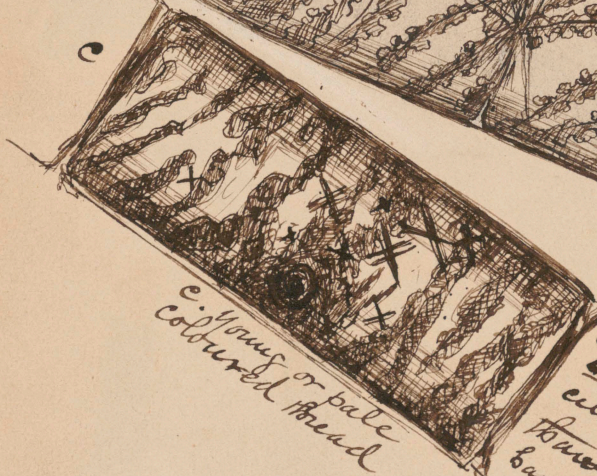
A

B early or young thread



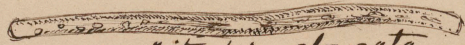
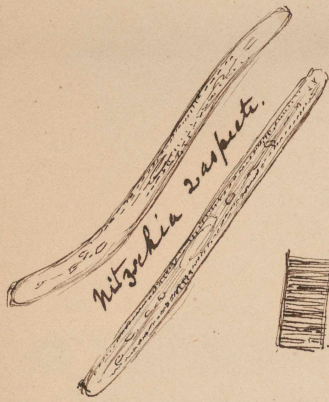
C

C young or pale
coloured thread

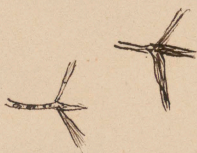


thought some as bits of ice.
As seen Dec: 20: when
cut out of solid ice &
thawed. Fraying seems to
have made the cytofast or nucleus
circular, much as glycerine & spirit does.

Weston 21/7/88. with $\frac{1}{4}$ obj & A. eye piece.



Nitzschia elongata, Hassal plate
VII. 12.



Thalassiosira



(Hass 102.)
Mastixella
caudata



Cymbella?



Diatoms & Desmids surrounding
a caddis worm's case, w^h came
up with algae in about 3 feet of
water, under 15 in ice in the summer



A

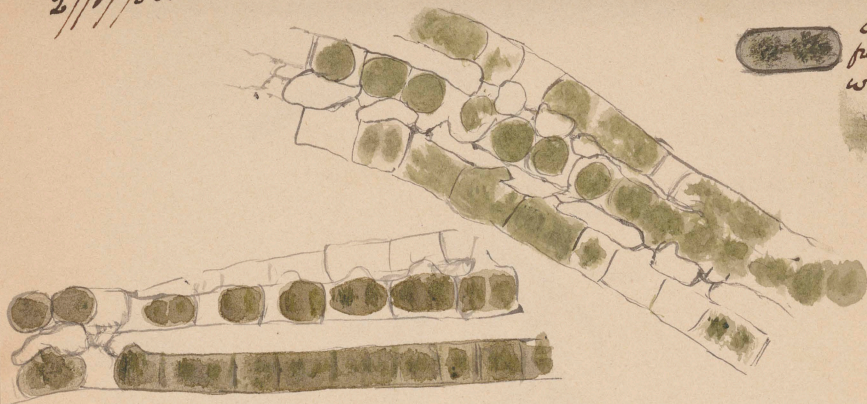


A These are as nearly like
what seems to be a normal
condition, or natural state
as I can draw them.



Great magnified according
to the original proportions.
Drawn without the Camera.
23/7/88. had not been frozen.

Zynderidea in Conj on both sides. (with $\frac{1}{4}$ inch obj & A eye piece
in Railway Ponds.
27/vj/68.



one cell as
frequently seen
when separated.





Winton.
13/x/68

Batrachospermum
Attached to a bit
of wood in a pool
near the river, with
1/4 inch obj. & A eye piece



Winton
15/x/68.

Surirella,
from the lumber.
with 1/4 inch.



From gathering
at the
lumber
with 1/4 inch.

Eucyoneura prostratum
from wharf at Union Station

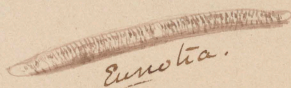


five samples are attached to Clado-
phora on the wharfs. with 1/4 inch

Mexico, 8/17/68. (obtained at the little bridge at the Hacienda)

Zygozoonium or Moringotia.

A cell covered with a kind
of Kinetocysts.



A cilia playing freely
they contract ~~and~~ ~~at~~ ~~like~~ ~~or~~ start
back & elongate like vorticella. ?



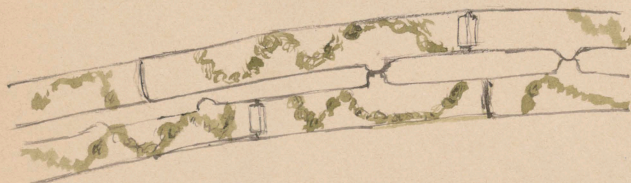
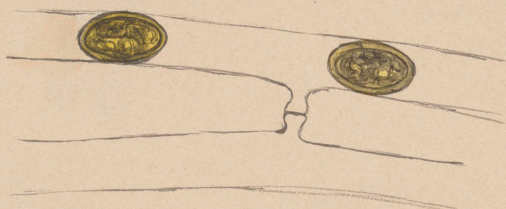
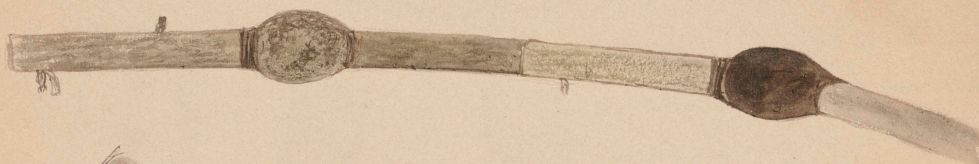
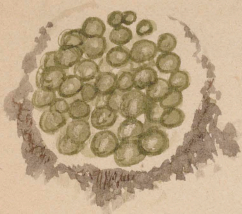
These three shot back &
projected themselves in
the same spot, dozens of times
cilia playing all the time.



found a piece of green or light brown jelly generally
shapeless but longer than broad lying on the sur-
face of the water in the Hacienda bay. Filled with
the Vorticellae? A few diatoms.
March 25/69 find them to be Ophydium versatile see Mies: Die in Co.

The hairs of Deutzia scabra.

Zynderidia in conji. & other alga V: V:
 Railway pond 23/10/58. with $\frac{1}{4}$ in & A ~~by~~ *Egyptia*



first appearance of
Conjugation.



Barn Swallow



Robin

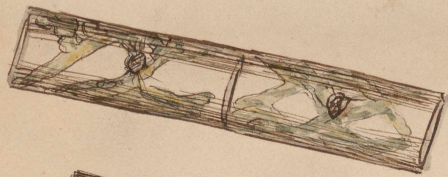


Dull yellow
 bird,

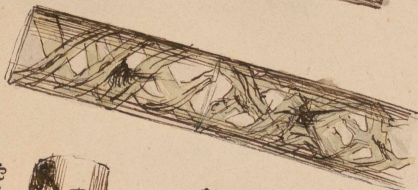
10.5 a little larger than last one.

the hairs of *Deutzia scabra*.

Weston 1/68.



apparently an empty cell
 always turning about halfway round
 ? anata?



17/1/68.

Different forms of endochrome assumed by a Zygnema, found frozen in ice & kept in a bottle with water for two weeks - Abnormal!

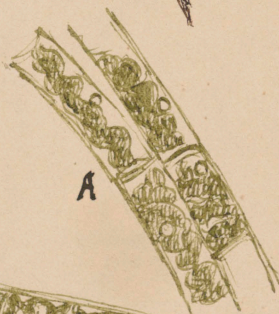
Nucleated cells



Yellow Green. Softest edges.

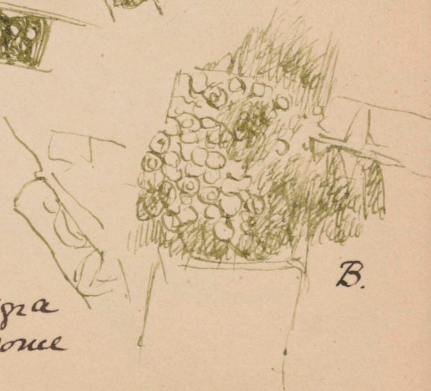


A. Alga obtained in the River 21/7/68 in 3/4 of water very dark blue color.



21/7/68.

B. Cells nucleated with bright granules, swimming in an old cell of some Syphonocera. very green.



The hairs of Desm. scabra.

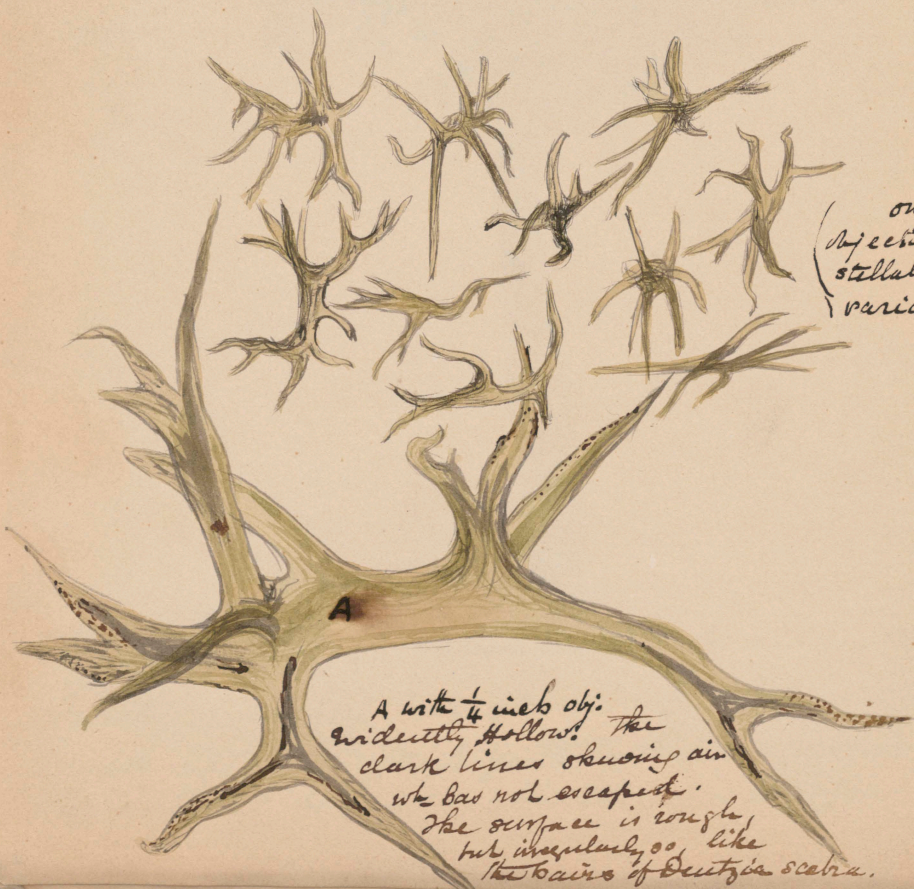
Water 25/IV/68. Drawn with one inch obj. (A) eye piece.

Stellate ~~and~~ bodies in leaf of an aquatic plant.

Nymphaea lutea? *alba*? or, *spina* [unclear] pp. 362 "*Nymphaea lutea*"
See Hairs in *Micrographic Diet.*



as seen in
portion of leaf soak
ed in liq. Soda; but
not displaced.



one inch
magnification, single
stellate bodies of
various shapes.

A with $\frac{1}{4}$ inch obj.
widely hollow. The
dark lines showing air
we had not escaped.
The surface is rough
but irregular, oo. like
the hairs of *Deutzia scabra*.

705

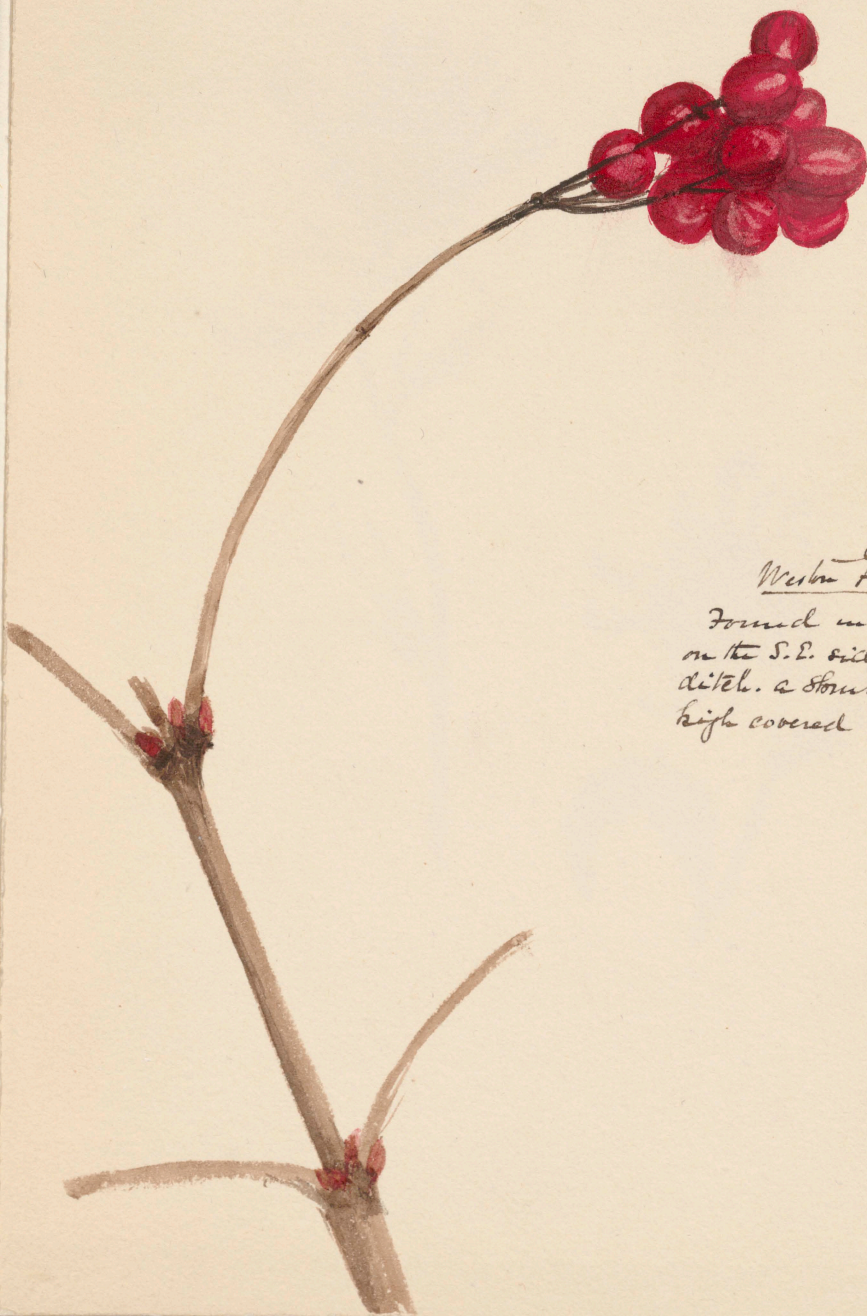
a terminal piece
mag^d. showing the
contortions



Weston 25th / 68. (S. Messon Sen^r. de^d. old mill head.)
Growth, on end of twig of black ash. Apparently from
insect injuries. Most fantastic shapes. About one third
the natural size. some on the same tree four times
as large.

Feb 1: 1869

Taken out of a bit of Locust wood.
Xyleutes Robinia. Harris pp 413.



Wesley Feb 1: 1869.

Found in the Swamp
on the S.E. side near the
ditch. a shrub about 8 feet
high covered with berries.

Wester 24th May 1871



Drosera,
or
Sun dew.

from the *Stumber ponds* July, 15. 1869.
grows on wet logs in the swamps -



Calyx six cleft
petals 6.?



Stumber ponds.
July, 15. 1869
Spike about 6 in long
all bright yellow.
Plant about 15 in high.



Phlox stylosa
Diaporhaleia plumosa?
with 1 inch sp. & A eye piece.



(B) with 4
inch objective.

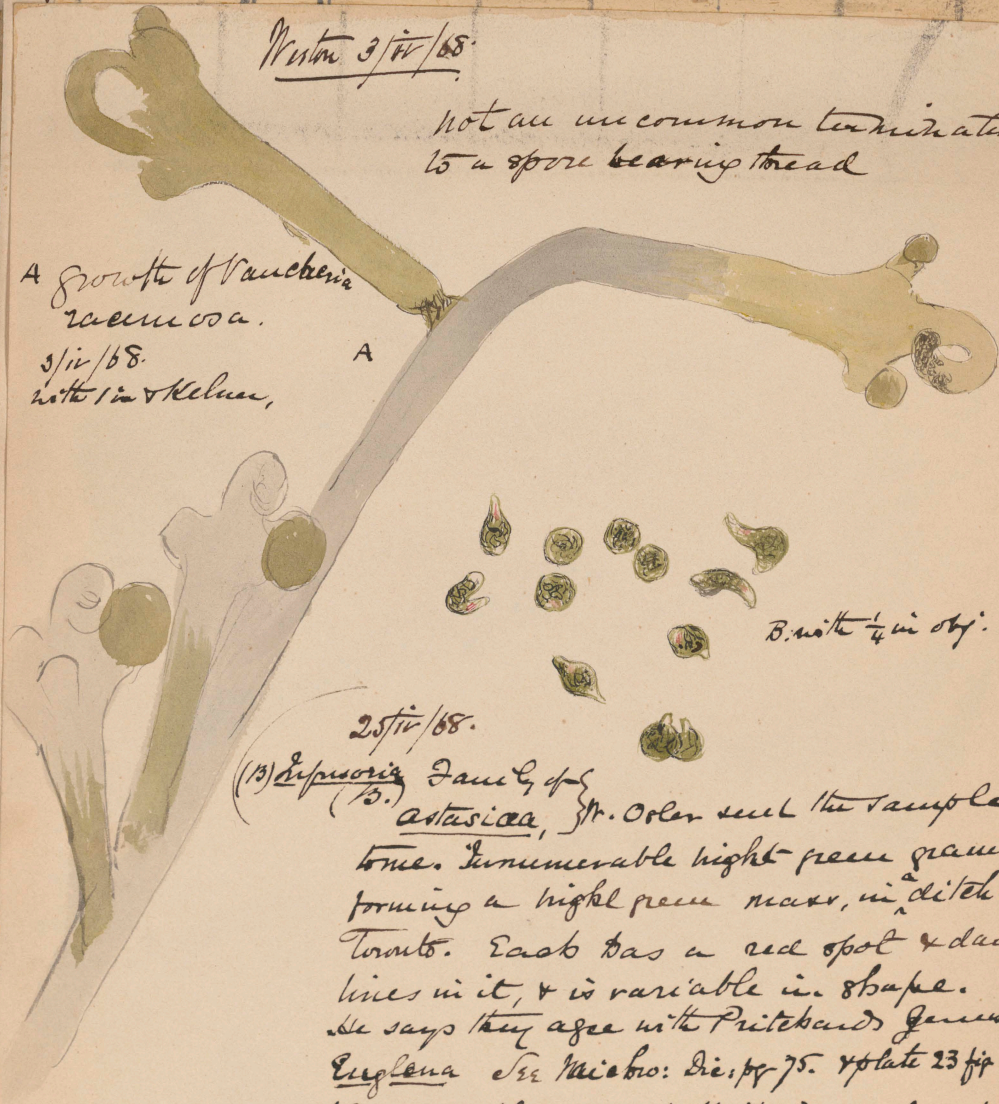
(B)

Winton 3/iv/68.

not an uncommon termination
to a spore bearing thread

A growth of *Vaucheria*
racemosa.

3/iv/68.
with 1 in Kelum,

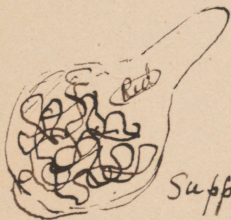


B. with 1/4 in obj.

25/iv/68.

(13) *Euphorbia* *Dauch* of
(15.) *astasiaca*,

Mr. Oden sent the sample
to me. Innumerable bright green granules
forming a bright green mass, in ditch in
Toronto. Each has a red spot & dark
lines in it, & is variable in shape.
He says they agree with Pritchard's Genus
Euglena See Micro: Dic. pg 75. & plate 23 fig 16.
Name probably from $\epsilon\upsilon$, pretty & $\gamma\alpha\gamma\upsilon\sigma$, pl. varieties,
in singular star, bright, light. They are in-
deed beautifully bright & very curious.

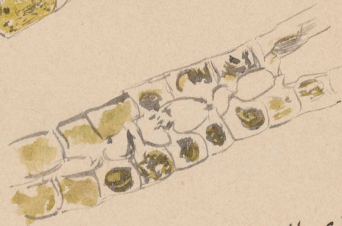


Supposed forms if enlarged

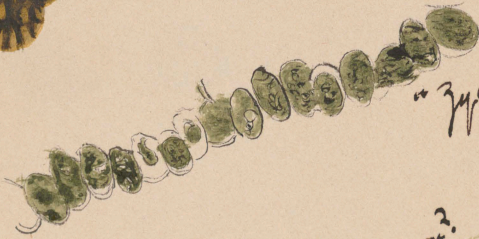
25/1/68. Canadian leaf from
the Hunter marsh.



Cymbella
conjugata d.



"*Zygnema malformatum*" (Kilham)
in the Hunter Marsh 25/1/68



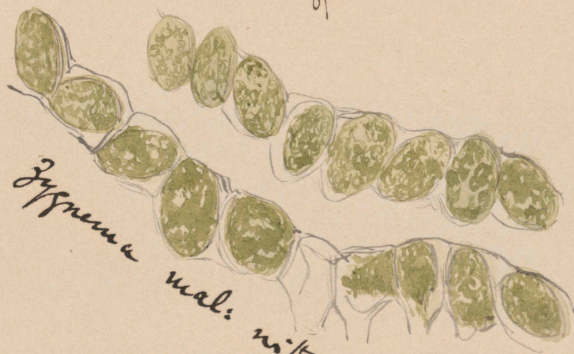
Zygnema
Hass.

~~*Closterium*~~?
very active frustules.
none at rest, & cells
all gone.
Closterium venustum



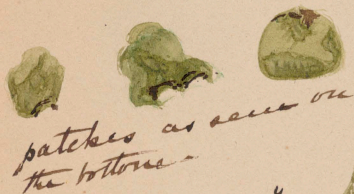
Closterium *Boecklingii*

Closterium
moniliferum?



Zygnema mal. with 1/4 inch

Winton, 16/iii/88.
 A Alga, frozen into a block of floating ice



patches as seen on
 the bottom



foliaceum?
 B. *Xostoe commune?* 17/iii/88.

In the ditch on the G. D. R. Road.
 This belongs to gravelly soil
 no doubt it grew last
 autumn & now appears
 covered with water.

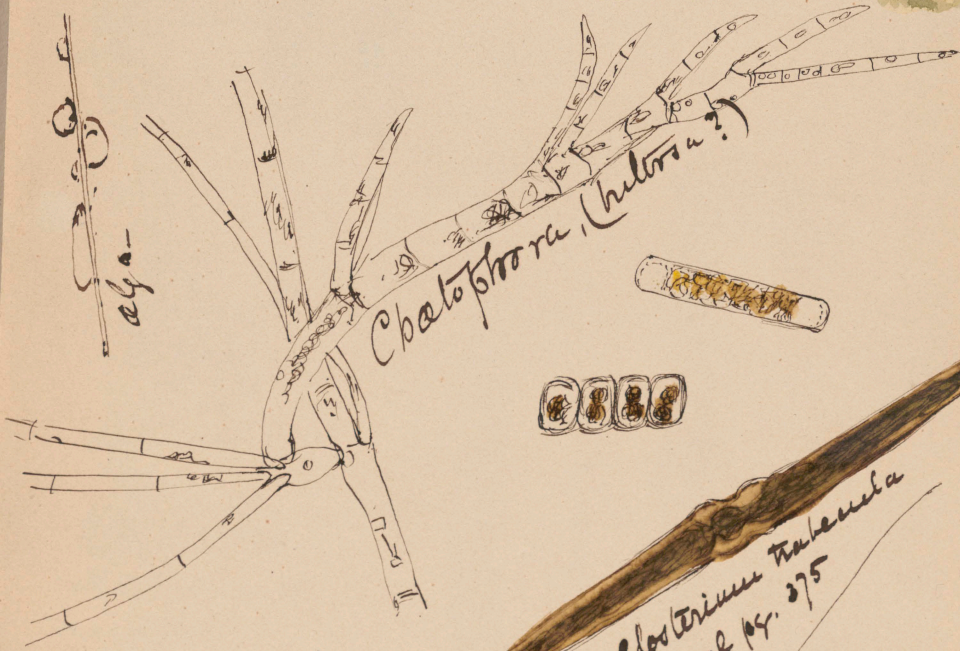
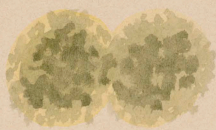
see Hassell pp. 288 & 289;
 plenty of enlarged globules

(C)

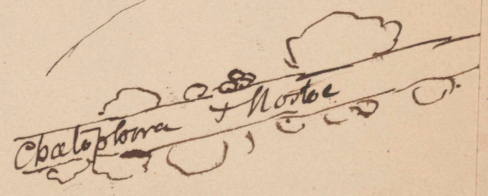
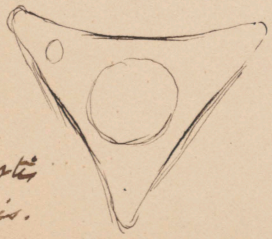


(C) The *Zygnema* from the cattle guard on G. D. R.
 as seen with a $\frac{1}{4}$ dy. when just thawed 19/iii/88. It had
 been frozen solid for 3 or 4 months. (Too blue it is yellow.)
 The alga was a good deal broken up, no long
 threads. none more than an inch & generally
 not more than $\frac{1}{2}$ + $\frac{1}{4}$ inch long.

*Aucapina
impalpabilis*
Hansl p. 253



*Trigonocystis
tricornis.*
Hansl p. 357.



June 28: 1876.

From the little ponds on the Railway,
in the circular morsels attached to the old grass &c.

Weston July 30. 1866.

Elm saw fly,
feeding on
Willow
30/7/66.

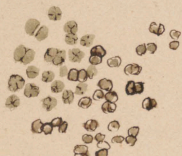


Superior
feeding on
willow
30/7/66.



Algae from
the Credit, 31/7/66.
at Springfield.
with $\frac{1}{4}$ objects

dark green with
a white edge &
white line between
the cells.



cells with $\frac{1}{4}$ inch

Ulva tuberosa

Well described pp. 296
Hassall Vol. 1.

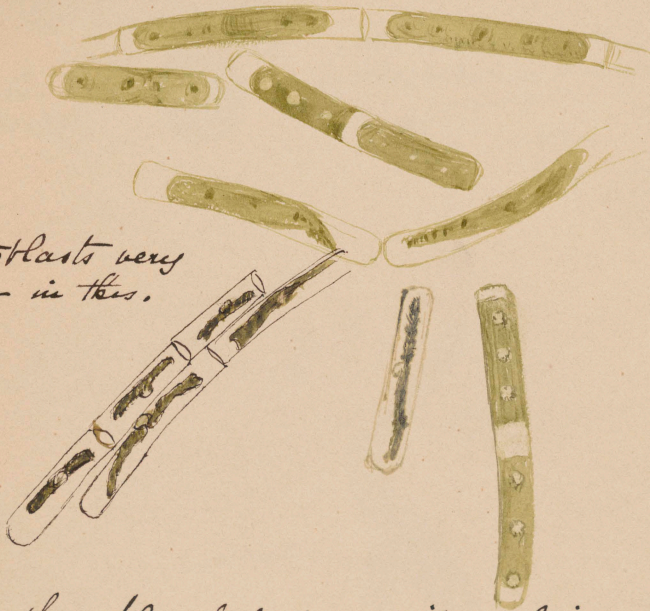


natural size

31/7/66. General appearance

Credit, Springfield. still water. consisting
of small cells, light yellowish green,
springing from bits of bark & wood.

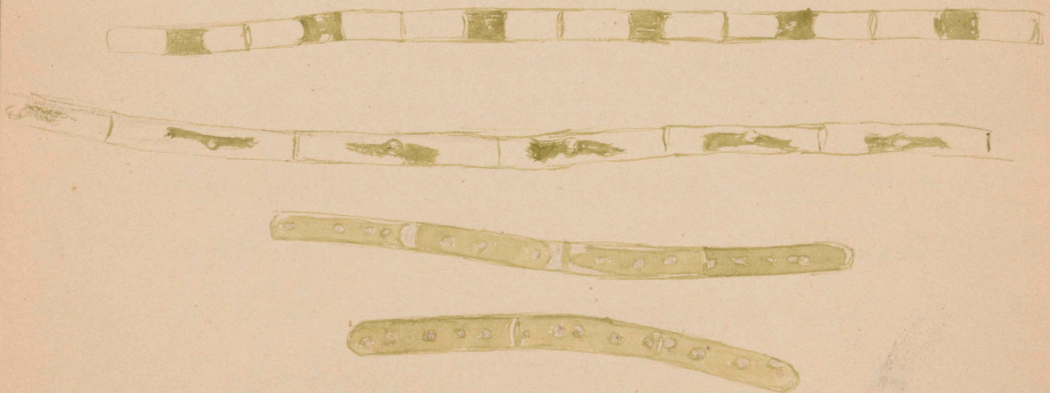
19th/68 Alga taken at the edge of the swamp or boggy place.
 could it have grown this spring. All ice round
 it, & lying in holes just as it did last autumn
 It is not ~~Myxococcus~~ ^{Myxococcus} other varieties with it
 & diatoms.



Cytoblasts very
 clear in this.

when the chlorophyll draws into a line it is much
 darker & one nucleus to be seen.

Is it a *Myxocarpus* not conjugated? In such case it has
 grown this spring in about 8 days of weather about 32°
 & may be going to conjugate.



Weston 5/11/88

A. Cytoblasts.



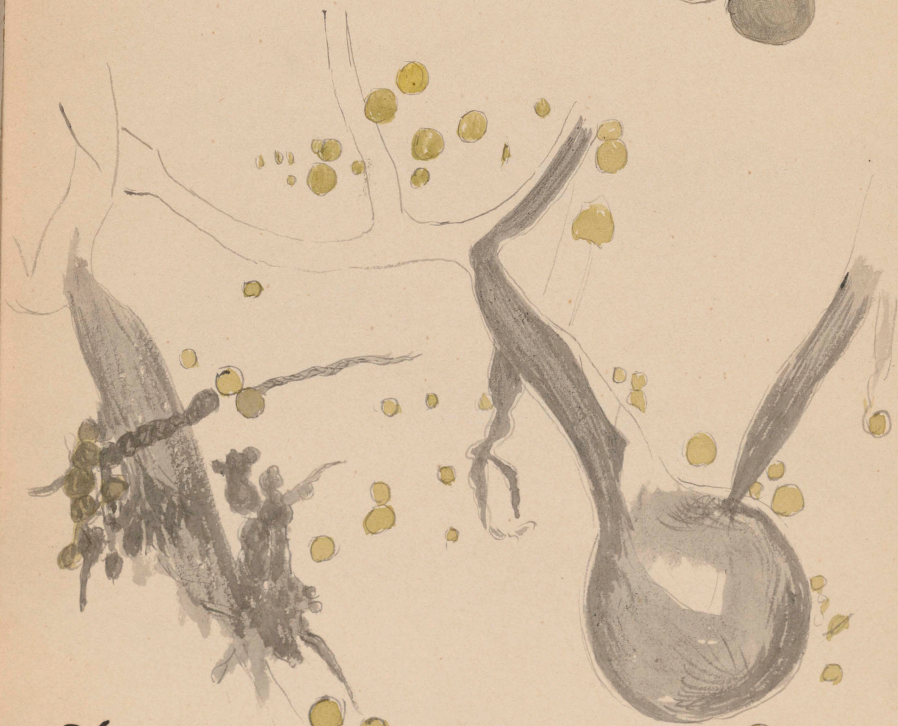
B.

see slides Nos. 846, 853, 854, 855,



This Vaucheria does not appear to be described by Kuntze -

B.



This is found surrounding what appears to be a bunch of eggs, but much greener in general colour, some in the aquarium for a fortnight, gets still greener, & shows a white spot by candle light, like other eggs. general mass

is of this shape - full of night green cells & long fungus like growth. Is it *Acklya prolifera*?



surrounded by a thick green envelope

(May 15: 1868 they are lizard eggs.)

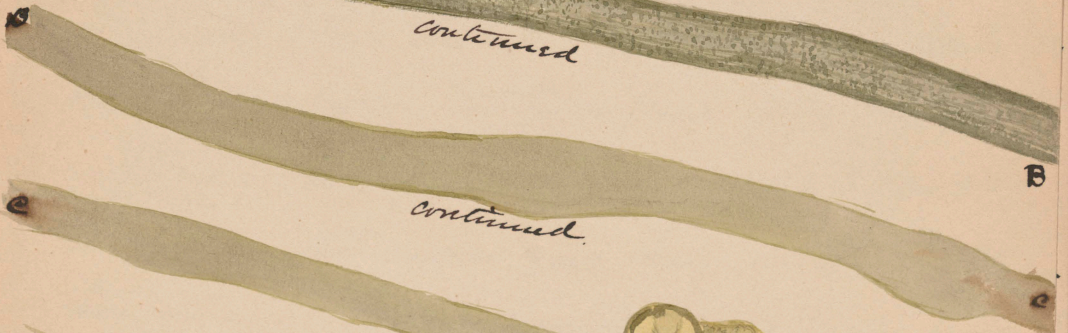
Ramosa.
Vauckeria. semilis, as seen 9/17/68 (X^o1)
 in a warm aspect, a dilute with 4 in water & grows below,
 with 1 inch obj. & Helner eye piece.



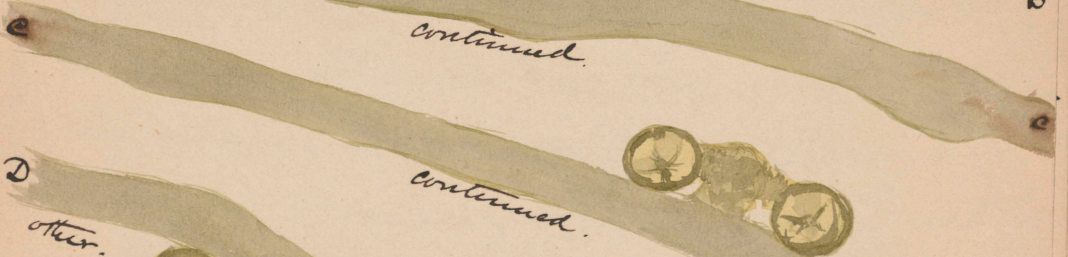
Termination of hypha.



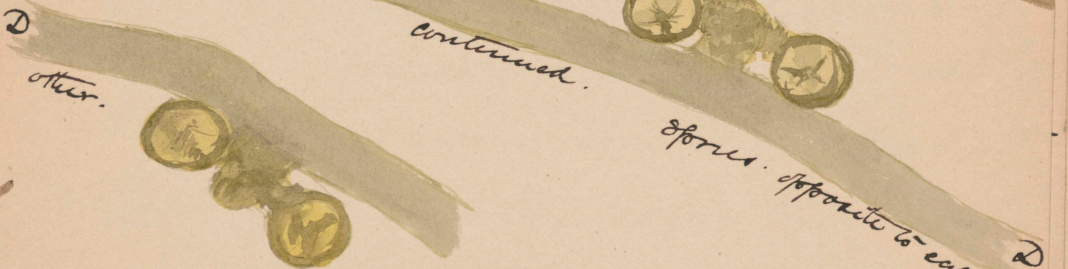
continued



continued



continued



other.

spores opposite to each

Third condition of the vesicles.

causosa (No 2.)
Vauckeria sessilis? showing young hauch, & formation
of spore externally 3/14/68. Ineb obj. & A eye piece.



B. Second process in formation of vesicles.
the lateral ones are seen on each side.

It seems to me that the antheridium protrudes more or less from the surface of the siphon or thread. Shortly two or more sporangia protrude from the sides, as they extend further apart, the antheridium seems to be much bent, scarcely visible, would not be detected by a casual observer. The next step is after this date. So far this alga has grown since the spring opened. It has been well nigh frozen every night. —

Vaucheria. ^{ce} *vaucosa*. 11/10/88. (X3)
^{semitis} 3
 same plants, taken from the same
 ditto as 9/iii/88. *V. vaucosa* in
 sandy ground, ^{semitis} low clayey.
 1 in. obj. & Helms eye piece.



B.

B. These terminations sometimes occur.
 Have no description of them?.

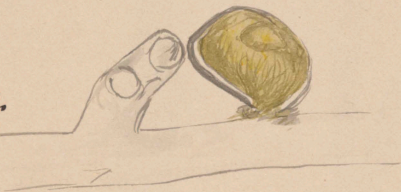


appearance on becoming
 older!

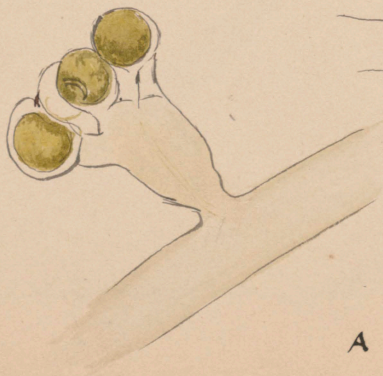


seen from above,
 & somewhat pale-
 red by glass cover

V. semitis



Bright granules, looking
 as though forced out in
 one direction



A fresh obj. & B. eye piece.



Water 7/6/68.
 Branch of *Cladophora glom.* with one inch long. & eye piece.
 terminalis " " " " $\frac{1}{4}$ inch. " " "
 Synderidea ————— ——— $\frac{1}{4}$ inch. " " "



From the specimen 29/5/58.
It appears to be *Cladophora crupacea*
The specimen is old & indistinct.



June 30. 1864
Calopogon pulchellus
White variety. (very rare)

4 bunches of farina
like anthers. (enlarged.)

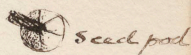
Stamens &
pistil.



Petal (mag'd)



a single
berry in each



*Calopogon
pusillus*



A club shaped
fringe.



anther
4 celled
& very large -

Pyrola, uliginosa.

Arethusa bulbosa,
June 20: 1864.



Flower of
*Collaria
multiflora*



Pod two-celled



Weston, June 4: 1844.

Clitonia borealis.
or
Wild Lily of the Valley



Pod incurved on the sides.
Magnified



Nat size.



Pistil.

Uoualaria perfoliata.
Boston May 25: 1864
Smaller Bell-work.



Stamen adnate to perianth



Seed pod.



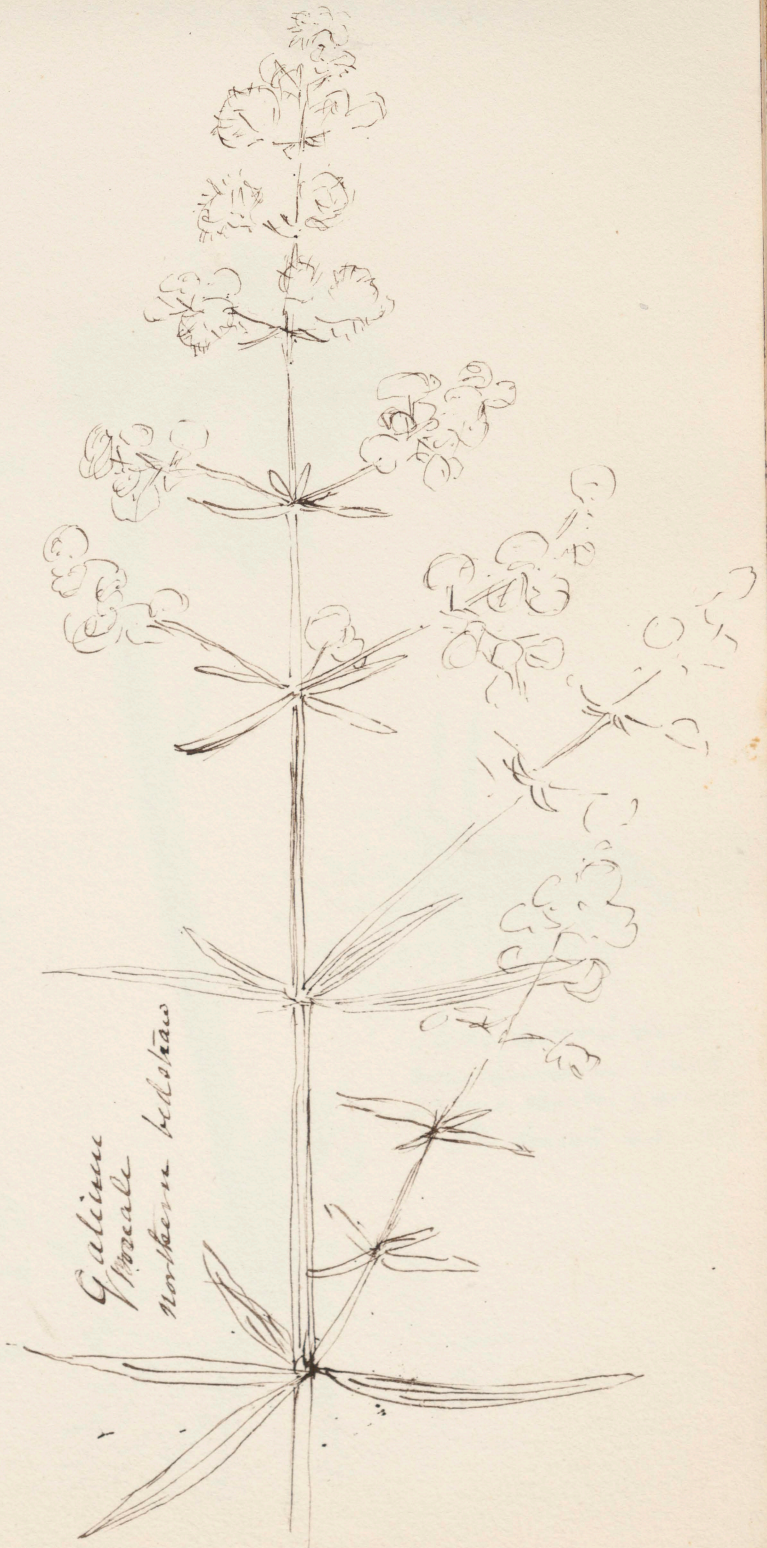
perfoliate
leaf

Edge of leaf quite white
when mag.

Weston.
July 1: 1864.





Mitokella
repens
Partridge berry.



Galium
spicatum
Northern bedstraw

Saxifraga Virginiana, or
 Early Saxifrage. Gray pg. 140. Wood, pg. 278

white, bright yellow
 anthers  size of flower

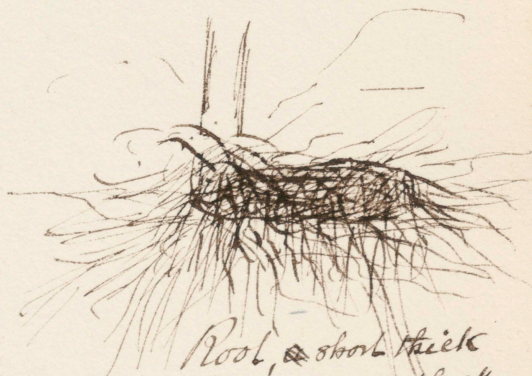

 shape of calyx
 enlarged. green.



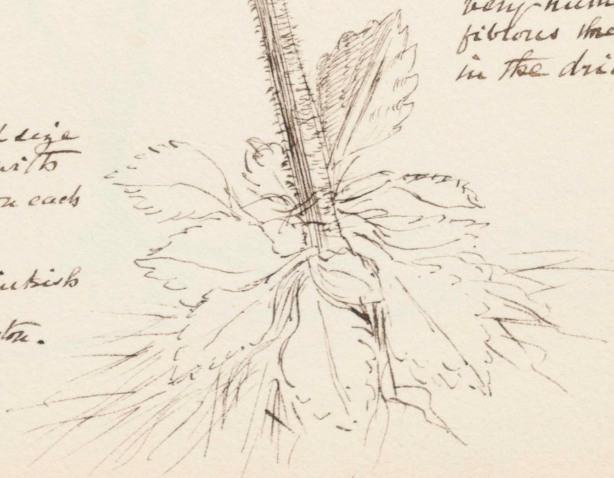
Stamens 10
 anthers deeply divided.
 Pistil - bipartite -


 dark green with
 a tinge of red
 at the edges.
 Largest size
 of leaf with
 6 teeth on each
 side

Stems of plant pinkish
 May 13: 1884. Weston.



Root & stem thick
 very numerous black
 fibrous threads. Growing
 in the driest sand.



May 21: 1864 (Weston)

Coptis trifolia, (Three leaved Goldthread)

Leaves shining & evergreen.

Curious petals, consisting of 5 or 7 club shaped hollow ended processes.

Roots very numerous, even size, & bright yellow.



20/1/68.
A small grey bird.
with white breast



building in bushes
trees in the garden.
delicate colour than.

25/1/68 in the humber marsh



25/1/68 in the humber marsh.



25/1/68 on rotten wood in the swamp

Weston Oct 27: 1868.
Closterium acronum? Hass.
 near Edin & Seal Letts.

The contents of this oblong lid *Closterium* were squeezed out, when trying to separate it from surrounding matter.



Is this a *Schizospora?*

Plentiful in Seal Letts creek.
 4/xi/68. Perfect chains of it.

a small
 crusta captive
 in the diatom.
 hurrying about.

with $\frac{1}{4}$ inch.
 4/xi/68.



Dynideridea 4/xi/68.

Weston 9.7.69

Paramecium aurelia
 dividing

$\frac{1}{4}$ inch with Beye piece
 brought by W. Doler



growing alga.
 9.7.69

$\frac{1}{4}$ in 4B eye piece

Obtained from Binkley's spring, Aueaster.



Meloseira varians
 9.7.69. $\frac{1}{4}$ in 4B.



Weston
 all orange
 inside and the
 orange. Given
 me by Mr. Cheek
 by Jan 7.28/69.
 The peel had
 been taken off



24/5/66

looking down on petals or
slipper.



Front view



under side
of slipper -



under
neath

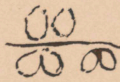
average natural size



two anthers
enclosed in
a covering.



Pollen masses 4 each divide
ble into 2 flat leaves.
uncovered.



covered

growing on
the thickest places
of Sphagnum. Root
close to the top.

Calypso borealis.
In Dennis' swamp.
24/5/66.

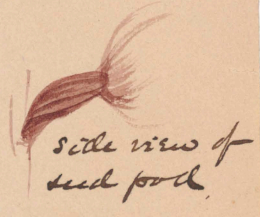
Flowers
with
1 inch
of petals



Neston, 4/17/68
Corallorhiza Maerai?
orchid fauna: Gray 453.
(Coral-root.) natural size.



flower
pressed open



side view of
seed pod.

Root.



Preston Sept. 1888



July



plant 3f high.
 long leaves like grass
 petals 6 with 2 waxy spots
 depressed a little.
 anthers quickly deciduous.
 stamens adhering to petals
 at the base, but adnate to
 the pistil wh is 3 leaf. &
 wide at the base.
 Petals & stamens white on the edges
 Dunder swamp July 1864.

Zygadineus (*Zygos ayoke*
adhu a gland)
 glaucus? or glaucum
 pg 475. Gray.