Oct. 26/48/ Hoard - No 1. Bright pink, single!

Aug 1. 1857. No 1. Hollyoak - 5 rows of seed, keeping for Blackish seed to pale pink - 1 pale pink with tinge of yellow - 1 may be called pale yellow with purple tinge - 7 plants.

No. 2. Show white & dark purple edged with white - 4 plants

No 3. Dk Purple, pink Dark - Flesh - Dark - Dark Purple Dark, edged with white - Dark red - Single Red. 5 plants

N.B. several Hollyoaks grew near these plants.

1858. May 15. last year I saved some seed of Black Hollyoak. which grew in one row the Rows of which to seed we may term) & this year we also some Stem, i.e. seed of a new variety, that (Dark Purple & Black
does not run into single or Cabbage stem, are double. Better old kind, which we call the Upton (Hereford, now Ayres 6/58 Calls it A. Gardiner's
is not so true, with the Black single.

1855

Nov. 13. Put Violettes of Scotch to prepare. - In the Jan Store :
Violettes of Spanish Cork, saved for Mrs Wilcocks -

Dec 13th Put some Scotch (daily expect a) Violets in the Store 12. cold Frosty in shed.

Dec 28. All dead. Several Slugs also attacked the Violets, & apparently
died. so that we may infer salt-water kills even
Lybernating slugs.

1856. Jan 22nd Hollyoak saved for 1/ Dark purple, forbidden & yellow kind, have been cautioned.

— Hollyoak No (2) Dark purple, cautioned please left to be forbidden & Bees, & adjoining plants.

— Hollyoak (3) Dark purple naturally & self propagate

— Saved more of wild cabbage

— Lychnis (4) Red, seed for Hereford, "my dear Sir, Clean
from a wood, Bucks Suffolk 26 Jy 1855 Spec. perenn"

— Myosotis (5) appears a caespitosa, seed gathered from Hereford Plant in Mr K. Garden, gathered Oct. 1855

— Cornish (6) one seed from cornish Plant, all other flowers having been picked off, Seedwalk, gathered Oct. 6. 1855 Dist. Ht Seminat. April 2. 1856

— Silene virginica (7) seed for Mr Austin Kilcot Road

— Apilyon or aconitifolia (8) seed from Hereford (2nd generation in Hitchen Garden 1855 "

1856

Jan 22nd [illegible] Sweet Pea. white var. contrasted & bright [illegible] to [illegible] & adjoining varieties. [illegible] 2

— 22 10" Eyebright Bicolor, white fine field of Lancaster, Hitchin. 1855. Flowers Dried.

— 22 11 Lilac seed. French Lake purple var. with side of straight walk. Down Garden.

— 12 Genus viscaria seed from Hitchin variegated (raw generated)

— 13 Lathyrus Nitidus. Sandwich seeds Nov 1855.

1856

Jan. 23rd put two half-ounces, separately, from Shaw, of seed-walk, for a shady place, does good in most part round with ivy, but in parts bare. — Earth taken clear to surface but not to actual surface: then was many earth-worm casts. — Put this earth on with burnt earth, under glass in my study. Feb. 10th Threw away earth; began which, two distinct plants had sprung up near each other in the one glass.

Feb. 10th put two ½ oz of dung earth, as before taken from waste [illegible] with [illegible] under hedge side of Hyde, on field side, beyond Dying yard, near School Fir. Earth taken from surface, but leaves, sticks & rubbish removed. — The earth lay beyond limit of mowing. [illegible] 10th when I came up.

1858

Feb. 15th planted [illegible] two ½ c. of, separately, of heavy additional clayey earth in slopes on before, taken from middle of upper end of Sand-walk wood, from rather the part, surface, about base, of little knoll & coarse pasture — very unlikely for seeds. — Beech 27 [illegible] Plants taken up with a ball of earth & 2 in thick. [illegible]

Feb. 26th Planted milk-Pan with earth from right under Beech-tree (77 thirds: RD): sound with bill of chalk, birch & pond. Plan very little earth-worm: but there are fair casts of [illegible] roots. [March 28th nothing seen up.] —

Feb 27th Surprising the number of Spirits fairly dried in roots of above Beech tree. — at least a dozen & fairly. Trees & shrubs must be fair bodies are to refer as Russian Rivers & Canada fish dried? Beech 27 with in March — shut [illegible] 6 ft on Quarter

See Back of Page

March 1st Planted 5 Pts of Sweet Peas

— Rosa tomentosa from Hemsley. var. see note in Bag

— Centaurea cupra. var. dentipicus. (Hemsley)

— Wild Cabbage

— Ranunculus repens (Hemsley)

— Lathyrus nigricia. with leaf

— 4 vars of Pinks

Feb. 25 & 27th Took 2 small parcels clout & q. in end of earth facing enclosed within wood of this Bank & planted it, but nothing came up.

56/

March 3d took 1 oz of earth, full of [illegible] from the part of Hawthorn wood — other bean after underwood cut down about 15 months — April 2d nothing came up.

—

— 6th about 1 lb of sandy earth in cavity in Oak, but covered by wood, between [illegible] to obtain — Oak 30–40 years old. [Nothing came up 6th April.]

7th about oz of sandy earth found enclosed in a recent Oak about 30–40 years [nothing came up. The 3 Oak bds taken; boiled 2 oaks about 1 hour — water.]

March 18. Took 10 Pairs of Legs

~~[illegible]~~

1. Diastella Silicea in N. poles-Shiels
2. — sinensis (Schisto)
3. — — nigricli
4. — — N. alto
5. — — shiels
6. — barbatus
7. — Diastella superba
8. — — superba - Imperiales
9. — Carthusianorum
10. — gigantea
11. — Zeberniziana
12. — Hirsuticornis
13. — Hirsuticornis (Glenlee)
14. — Delatrides
15. — alata pompeiana
16. — gentilis.

(4)

October 6th. The middle division always has far more clean plants than surrounding area. I do not see yet that prop and has had any effect whatever.

April 1st. Sowed seeds of many in Sand wood: 1 in with sand, (1) (2) white Clover (3) Cynosurus & 4th as to path side for about 18 feet below the Pk. Drought glaucous.—

April 2nd. 17 of earth from south middle end of sand plant in middle of field: being taken up the evening of prop & staged upper 1/2 of each of earth off; (then took up at about 1/2 mile Rep. the earth. 1 Black worm up.

April 3rd. Dibs within 2 or 3 weeks I planted off the flowers off my pasture & covered them with thin plop. [last year I planted off the flowers & covered with leaves] & but a common flowers are off 3/3 side of common pasture & other plan.

April 4th. Put 2 bottles of Frog spawn, under good: the spawn had just ~~Oct. 25~~ ceased to be glued, & to have the tadpole like head & tail: in other bottle spawn got spherical: & Rhododendron Bank & Rose. dead & rotten

April 4th. Put Frog spawn just hatch in spherical form, in water for about 10 hours, ranging from 55° to 59° Fah. [all dead]

April 2nd Frog spawn. in spherical state, in salt water for 24 hours, [all dead.]

Apl 6th This mud with fibrous matter was divided into 2 portions; in one
were put about 2¼ oz 27 March & Dict. Coarse ½
making 24 Plants.
In the other ½ were the Roots 1½ oz 14 March. Coarse ½ &
10 Dict. = making 24 Plants. So that in under ½ lb of
Roots sent 51 plants came up. (Roots (0″))

Apl 6th Put 50 seeds (stones) sent for trial, under decaying leaves & earth of wilderness
planted. 4 of 5 miles from Hampton. A sandy wilderness under water: a
little wet & clayey mould from Hampton Court in centre plot.
~~By Hammond about 2 oz~~. Little Prod of Southern School.

Apl 7th. I split up 2 Oaks of W. Smith, with about 30 seeds
about 7″ about 2 ft in diameter; the
enclosed dozens of stones; one root was weighed 3½. with 2½ fairly entire
a good deal of
collected earth pretty certainly perfectly surrounded & securely behind stones;
but here I noticed that the earth was frequently squeezed fairly
into - [17th planted 50 more seeds from another stone; the legs under
which & the chance of stones partially removed: a very probability
that all the earth is not here been carried. -] of the 7th Lot,
about 10 little earth
on 15th Dict. coarse per ½. - [on 30th 2 Dict. Coarse ½. in some earth
specially put out of wood legs: coarse ½ in of stony; finer containing roots a
This on of earth on May 17th
1858
Apl 26th. Put a dozen eels about 11 inches long in Coarse

May 2nd. 107 Earth from Headgrove wood, 1 inch beneath surface, coarse
when surface earth mixed 3 oz better (Nothing (other ½)

May 2nd 1 oz Earth from under great Heap of stones Headgrove which must
have been lying for 30-40 years, picking from stones of trees
growing on surface: I took earth not from actual surface
or solid surface under the stones. The stones had been picked
off field. - (Nothing (other ½)

Oct. 25th Set 10m earth properly embed, with many stems in root of great Oak, beneath Hedgerow, — ends mixed — none nothing came up. — Kept for 20 Days. —

May 2d Began setting with 1/2 Stony Bay Salt Water: Hyacinths: Lobelia cephalotes. — Silene inflata. & Lychnis &

May 17th — Stems of Green Rock Plants: 2 stems had green Capsules forming Lobed above & below; between them several pale Shiny embedded & round earth: one of these large Shiny Pale Particle removed & firmly embedded in the wood & under this earth there was about 1/2 Inch of earth (Inf 21 nothing taken up.)

Next to same stem, in Support of 2 stem about 50 — by same 10, there was a little cavity in wood with Pale, with about 1 Inch of earth embedded. (Inf 21 nothing taken up.)

May 17 Eggs of Hyperanea pinifera (& Pedicularis of Nemertes put in salt water for 28 1/2 hours; those with calyces long & open were all dead: 10m younger, with no calyces. I took out & put in fresh water to see whether with developed — May 25th The latter all dead. — I also tried 10m stony for 8 days, but were killed.

May 21st The flowers of Hyacinths open or Campanulate in 10m in K. Parker water for many hours on 2 or 3 days fresh flowers — those in Shiny Pale White water are smaller & larger & 10m pink & pale: the tube of smaller calyx seem containing longer on the Pale than in pink flowers in proportion to Division of Calyx. — June 16th The Hyacinths in shade have larger flowers with elongated petals in 10th Degree.

May 22d. Sowed seed of Red Lychnis No 14. 15. 16 from Hewitt
marked Red. May boy. Bentley Suffolk (Hew. present)

— Lychnis White (10) from P. of Lucerne - Hewitt 55
Hew. present. — from Hewitt in 17. 18. 19

— No 20 Carlacea triple. van Dreysia. Seedling 2d
reared from original plant sold at Bath. From
Hewitt Hatcham. 1855.

June 5th Sowed seed of Rhododendron Ponticum (Cyprus var.) & for 45 hours. Killed, Cancey, Hamp. Ponticum (Caucasian) in carnation & Dianthus also with Gold Foil under cat. —
Edmund Silk Foil White and seed, plant like I found at Folkestone.

Dandelion plant in salt-water; it thrives & anything finds
in — was killed & even removed to pure water &
for days in salt-water. — [Jun 18th & does thrive & flowers
& Dandy]

June 8th I gathered seed of Malcomia Calabrica Lychnis & Blackwell
from Co Lothian, which spring close together; but came
up: & hundred yards from. Did they flower at same
time? I think not for this Sept 56 they did not
flower at same time. —

June 13th. Nemesia (sp) Versicolor sheds her 10 round seeds & flowers, in the female stems are certainly 4 of each & 4 left being there to other plants, stock up accidentally here but flowers alone.

June 18. Lathyrus hirsutus - seeds sowed in 48 bed & germinated & planted out 9th - has in flower - clump about 18 inches high. Flowers deep 2 on stalk - "Letter Red". - Has been treated all along with salt & guano water. - Spikes dried. - ~~has 100 stigmas long~~. I can see no markers here like of back white upon side of calyx, undivid. -

June 21 York. shed seed & Petals & Beans out of crops of two Pigeons, fed 2 & 3 days, & seeds germinated well; how long seed will keep before each eaten, I know not. -

June 27th. Sowed flowers
Sowed perfect flowers Dark of purple Sweet Pea, banded among yellow & pale yellow of Lilac Cornish Pea, (with notched wings). marked with Blue ribbon; also the of triple pink with yellow & dark purple. -

— contained dark purple Pea & white part of Lilac Cornish yellow marked with red tape: (one shedded off) Pink Pod the good Peas July 24 but not so fine as those Peas given. -

July 10th perfectly contained 2 of dark purple & 3 of pale pink flowers & left them to perfection & Pods marked with Brown ribbon. - All 5 shedded off July 24th

The dark purple grows nearest with: pale cornish yellow off.

(Aug 31 last date taken from date)
Here we made cuts in wood 5 stripes & each one seed came up. — grew in shade, & trees cut down several years ago.

July 2. Sowed seed of Red Indian; think 3 set from plants, 1858 10
plant from
2a 21 guessed & collected from Hamilton seed; 11 fruit flies planted off
The seed were ok for germin better plants

2a 22. Myosotis seed from plants, from plants from wild Harbor seed; 11 percent decayed of salt & fresher & Myos.

July 21. Eats about entirely cooked in pork Beech 3-4 lb in Pickle in Barley, think 12 bear cut down several years. — Eats chiefly — entered cavities & belong pine wedges trees & bears for stalk.

July 30 vicia oculata killed & salt water, Myosotis would injured.

Aug 8 Sugar-loaf Cabbage. Set up from plants, pots filled a sq little above 3 inches deep quarts.
Aug 19th Examined water that 11 pots of plants with cabbage that she & put, but we found the saucers filled with some purpose I suppose great measure. —

Dec. 3 × Raspberry 6" sunk (Dropped Seeds & Fruit in Salt-Water)
— × Cherry (4th sunk) 6" other sunks 2-3 days
— × Gooseberry 4th do. 2-3 days
— × Strawberry 4th do. 2-3 days
— × Carrot 10" drank sunk. 11" sunk sunk 7-8 days
— × Barberry from 13th 40-41 days
— × Ranella vulgaris 10" 1 sunk. 11" all sunk 7-8 days
— × Ulex in ejected Potatoes drops (5th sunk) 7" floret near bottom (9th many drop 12th 4-5 days) 13th 5-6 days
5 × Rhamnus sunk at once. 7" floret near bottom 1-2 days
— × Mulberry 11" floating near bottom 12" sunk. 5-6 days
— × Blackberry 7th 9th floret near bottom 11" quite sunk
— × Pear. 4th 8th & 9th 10th do. do. 5-6 days
11 × Rose — from 1st 21-22 days
— × Oak — 16" sunk 4-5 days
— × Hawthorn 15" almost sunk 17" sunk 5-6 days
— × Beech 17" sunk 5-6 days
— × Stachys Sylvatica — 18" sunk 4-5 days.
— × Calceolaria diversifolia Dec. 22d — 10-11 days
— × Mahonia Dec 20th 8-9 days
17 × Wheat Dec. 22d — 4-5 days
— × Broom Dec 20th 2-3 days
— × Ononis — 26th 8-9 days
— × Phleum Dec 21 3-4 days
— × Water Lily in 4" floret near bottom 4th do. Jan 6th — 19-20 days

1856 11

Aug 11 Ranella Glauca. gooseberry, Red & Red currants, Lilac & peach sunk. —
Raspberries floated: sunk after 18 hours. —
Put in Cavity of Plantain (5-6 days) Goodyera, Ranella vulgaris. (17th 5-6 days)
12 (6 P.M.) Galeni Dioica (skin of) Silene inflata 25th 12-13 days
13th Sweet Pea 17th 3-4 days.
16th 6 P.M. Strawberry (illegible) days: 17th sunk in 24 hours
18th Wheat 22d: 3-4 days Oats 21st 2-3 days
" Phleum 21st sunk. 2-3 days Barley 22d 3-4 days
" Calceolaria diversifolia 25th 6-7 days Stachys sylvatica 31st (12-13 days)
" Oak 21st 2-3 days Matricaria chamomilla 21st 2-3 days
" Carlaminc hirsuta 23d 4-5 days Ranunculus arvensis 21st 2-3 days.
" Silene conica latifolia 24th 2-3 days Papaver Bracts of Anthemis 25th (some sunk) 28th sunk sunk 3-4 days
19th Hyoscyamus nigra 28th 3-4 days Anthemis agrestis 21st — 1-2 days —
21st Calystegia sepium hastata 23d 1-2 days Common Broom 23d 1-2 days.
23 Helosciadium nodiflorum 25th 1-2 days Viburnum (empanded) 24th 0-1 days.
— Juncus acutiflorus 30th 6-7 days Rhinanthus glacialis 25th 1-2 days
— Sparganium ramosum 11th: very 3 Months Carex vulpina — Oct. 4 yrs (57 days)
— Plantain — ash. 25th of separate hairs Rest 31st no self Fragaria ananassa Sept 5th — 11-12 days
— Iris pseudacorus Bulbs: rotted. 31st (7-8 days) (after sunk Sept 11 — 16-19 days)
27. Jug berries (sunk at once) Blackberries sunk at once
— Fir Cones Scotch. Sept 3rd 2 sunk 10th 9 sunk 13-14 days Arbutus Plums & stone sunk at once
— Erythraea 30th 2-3 days Japan Plums Sept 2d 5-6 days
— Scabb Inoperial Nov. 11 Sunk Wahlenbergia (13th 1 sunk) 20th Rest sunk — 23-24 days.

75-76 days.

Acer
Ilex Aquifolium Common Sown Dec. 29th 7–8 Days
Ilex Hedgeholly Jan 9th scarf sunk. Jan 12th 21–22 Days
Ilex Perado Sown Jan 27th – 5–6 Days
Ilex Ramentacea Canariensis sunk 24th 2–3 Days
Ilex Latifolia Corniculata – 24th Do.
23 Kalmia Glauca Jan 2nd 9–10 Days
Clematis 29th 5–6 Days
Syringa Vulgaris 29th 5–6 Days.
26 Laurel 27th 0–1 Days.
Charlockia Jan 1st – 5–6 Days
29 Rhododendron 31st 1–2 Days
Genista 30 2–3 Days
Viburnum Jan 5th – 6–7 Days
Jan. 3rd Cotoneaster 9th – 5–6 Days

— Malapus 8th scarf sunk 11th sunk 7–8 Days (1 sunk large seed)
— Chaidoceria – 12th 1 sunk –20th after sunk 16–17 Days
— Hesperis March 30th – 85–86 Days. Sept. 9th Germinated admirably after the frost
— Lobularia Jan 15th – 11–12 Days –
— Matthiola 12th 1 sunk 20th after sunk – 16–17 Days
Jan 9th Vicaria – 12th 1 sunk Feb 9th 30–31 Days (1st 4 sunk in capsule).
— Juncifolia 4 berries (Feb 3rd two sunk) (Feb 8th the 3 sunk) Feb 12th 38–39 Days
— Gilliflower 13th 3–4 Days
— Helychrysum 24th Jan 30th 1 sunk 31 after sunk 21–22 Days Feb 20th generally sunk

Sept 4th 3/4 sunk Rest sunk after 30 Days Rest sunk after Germ
May germinated well after 30 Days: very irregularly
Feb 24 May sunk Floating plants after 48 Days March 3rd germinated well

Aug. 28 Gilliflower 9th – 11–12 Days
– 29th Fruticulosa 1 – (2–3 Days)
— Erichtigia 30 0–1 Days
— Clitoria Mariphylla 31st – (1–2 Days)
(Chrysocoma coronopus)
— Tanacetum Vulgare 8 Th. (segment berry only)

Germ intermittent 29th sunk 0–1 Dy
Antirrhinum Majus 3rd 4–5 Days
Campanula (Medium) Do 4–5 Days
segment berry after 1–2 Days
Sept 4 3/4 sunk in 5–6 Days. Sept 9th last sunk 10–11 Dy

30 Matricaria Ocellata 2nd 2–3 Days
— Kalmia latifolia 0–1 Days
Sept 17 Atlantic berry 3rd 1–2 Days
— Chaidoth 2nd 0–1 Dy
— Clematis 2nd 1–1 Days
4 Hyoscyamus 13th 6–7 Days
— Tomato 7th 2–3 Days
— Mulberry 5th 1 sunk 6th 11 the sunk 1–2 Days
— Lobularia (61 Years) 6th – 1–2 Days. –
7 Nasturtium scarf cipsa sick
11 Barberry carna. 7th 1 sunk 8th 2nd seed Bunk sunk 20–21 Days
— Spanish Pink 13th sunk 1–2 Days
12 Impatiens Carolinum 13th sunk 0–1
— Convolvulus (large) Do Do
— Horse Chestnut (Oct 10th 1 sunk.) Feb 1st 2nd sunk 28 part 4th (48–49 Days)
20 Anethum foeniculum 26 Plate 26 1 sunk 27th 2nd sunk 6–7 Days
— Rosacea – 24th – 3–4 Days
— Acorns (sick in acc)

(Centaurea ater quality acorns)

1855 Dryed seeds

Jan 18 X Walnuts Ap. 18 extinct floating over 90 days
— X Sweet Pea 27 — 8-9 days
— X Eryth... 2-3 days —
— X Mountain ash 26 nearly sunk 27 float off frond 8-9 days
Jan 22 X Common Thorn 24 1-2 days
— X Fir Cones (31. 1 sunk) Feb 1. 9-10 days
— X Poppy Feb 6 14-15 days (only few seeds in capsule)
X Dictamnus Fraxinella 26 nearly sunk 27 sunk 4-5 days (closed Pods beautifully)
— X Cowslip Feb 1. 9-10 days
28 X Lettuce 31. 2-3 days
— X Inula Feb 3. — 5-6 days
— X Drosera Feb. 10 — 12-13 days
— X Plantago Feb 8 10-11 days
Feb. 1 X Kalmia 7 — 5-6 days
— X Turkish acorns March 21. 1 sunk 49 days / Ap. 15 2 sunk (74 days)
— X Magnolia acuminata (Feb. 8 1 sunk) 10 sunk 9-10 days
— X Convolvulus (Feb. 7. 1 sunk) 8 other sunk 7-8 days
— X Portulaca oleracea (Feb 4 1 sunk) 5 all sunk — 4-5 days
— X Silene inflata 16 14-15 days
— X Lathyrus sylvestris Feb. 9 — 7-8 days
Feb 7 X Ragwort 12 4-5 days
— X Groundsel 12 4-5 days
— X Sedum dioica March. 22 — 44-45 days
— X Teucrium... March 8 — 28-29 days
— X Epilobium 10. 2-3 days
— X Dianthus March 8 — 28-29 days
— X Campanula Feb. 14 pods alone ... sunk. Feb. 15 7-8 days

Walnuts
Asparagus
~~Kalmia~~
Juniper

X Feb. 9. Luzula Feb. 12 — 4-5 days
15. 3 Nuts (~~Ap. 15~~ sunk.) then 9?
(May 9 2 nut sunk ? = 83 days)
(July 16 3 nut still floating
after 90 days
Sep 2 one of them two germinated

Retained ripe nut; it sunk Aug. 22 57. One of these not germinated. The Walnuts did not.

Sept. 20 X Ragwort 27. 6-7 days
X — wild carrot 22 — 1-2 days
X — Hawthorn 1. small sunk. 21. 22 the Bench sunk. 0-1 days
X — Agrimony 21. sunk 0-1 day
X 21. Lettuce 26 4-5 days
X — Inula 28 — 6-7 days
X — Prunella vulgaris 26 1 sunk. 29 2 sunk 7-8 days
X Epilobium (small sp.) 26 — 4-5 days
29 X Walnuts (1 sunk) 30 the other sunk 0-1 days
X Laurel berries (sink at once)
— X Lilac. 30. 1 sunk. (2 the other sunk) 2-3 days
— X Peony 4 — 4-5 days
— Euonymus. Nov. 28 — sunk. — 2 months under 1 days. —
X Arum americanum 30 all berries sunk but one 6 last one sunk. — 6-7 days.
X Sweet-Briar 2. sunk 2-3 days
X
30 X Asparagus — (4. 1 sunk.) Oct. 23 other sunk. 22-23 days [Some germinated]
X Tall Kidney Beans. 16 1 sunk 18 2 sunk — 17-18 days
Oct. 12 Figs — Dec. 3. thrown away still floating
X 13 Arbutus berries sink at once
X 20 Spanish ~~&~~ Chestnut 21. two sunk. (23 other sunk) 26 all sunk but one ~~[illegible]~~ not 2 sunk
X — Horse without Husk. ripe. 21 two sunk (23 sunk) 29 last sunk — 7-8 days.
21. X Juniper Berries (5) 26 3 sunk (Nov. 2. all but one sunk) 3 last sunk 12-13 days
— X Ground-nut Dry (5) 26 3 sunk / 28 all sunk. 6-7 days
24 X Ripe acorns. (Turkish Oak?) (28 2 sunk) — 3. last sunk 9-10 days

1856
04.30. Typha latifolia Jan 30th Flowing after 3 months
— X Nymphea lutea . capsule . Aug 7th / seeds 7-8 days // 28° 23-24 Sept. Jan 20th after seeds 4 Jan 20.
14X — ——— Crown seeds of (seeds 8 days) by 4 germ 4th after sown

1856

Sept. 23. I Parsnip shd of ea Sorts, had 10 grains of Soot to earth. chiefly small clears; up fairly attended (obt. 19° Attby gone)

Sept 25. Parsnips shd 2 Partridge, other bags same: up little dirt, but got more seed of the dipped with fibrous matter, & plenty fresh? planted.

Oct 19. Rec'd 10 grains, one with wheat similar, put in Oak. Canary and a 14th

A Tares. Cabbage & Clover — grains each to 3 Beds of South African Eagle. (Battersea)
: bottled them; them up pellets in 16 hours, ie on the 16th of
: planted them seed on 19th.

Oct 19th Planted pellet from Savoy Oak, charged with seed. planted

(B) pellet whole — 16¼ in Flotsam.
Seed seed is to be well measured — Bird & Plant if Bird is clean

Oct. 19. Partridge with 22 gr of Egg dirt on one foot — 3 p a cwt: four
each on 3 other pots — 3 pots quite clean. — Rec'd 22 gr the two on 4 other
pots in bags on [illegible] Dec. — the mud is potted together & potted for
pellets — 2 up carry seed in Clay-soil. (Oct 18th. Nothing come up.)

Ford Sterling shd Seed with dirt & Peat

Oct 29th I have one more plants of Thorn, Gen. Lawrence, & 3 other kinds (Savoy 3 on other row) Raspberry
planted in Bird dung — some of the seeds were in cinnamon
Bird dung. — (Thompson Hollow [illegible] Oct. 7th I have not
seen 7th Kind, I think of will Rose. ea Savoy Oak & Rose.
Oct. 16th on 8th Kind. / pots 20 9th Kind / Oct 12th 10 12th Kind / 18th [illegible]

A piece of the shell, a Tares a Cabbage germinated. 2 Oak germinated, one remained
retarded after 13 Days. Part of the pellet I left the earth by
little Oak 24th & then planted. 1 & then 1 Canary seed & 2 Beet
Corn up. — One Beet seed retarded up after 18 Days.
The Eagle was put at 3 o'clock on 15th & then up to pellets on 16th. On 17th a shoot
had come from it, & 18th, after 24 hours a pellet was thrown up; with
one 3 Potatoes. 1 Oak. 1 Canary seed, & then left been in ground exactly 70 hours.
These seed planted on Nov. 13th after having been 10 days damp: Oct 1 Plant up 70 hrs old Seed.—

(B) 2 or 3 Clover seeds shown germinated.

Oct. 18. I Partridge put 55 grains of Dirt. — Planted dirt for 4 feet
seed one of the 12 sorts of Birds killed yesterday. Pellet of Chalk
as large as Lumpit shown — seed. — (Dec. 7th Nothing come up.)

Oct. 18th Hooker Hayle seed of Vicia Oct 20 a seed of Bryony has germinated

Dec. 7th after 30 Days planted Peas seeds, & Tares & Peas in Cup.

Dec. 10th all germinating splendidly. Even the Tares! Mem. a Seed which we see at first might allow a Bird to escape whilst floating. In Gosports Journal Vol 7. p. 229. on escapes of Birds & Seeds. N.B. I tried 40-50 Tares in Salt-water for a month & they then sprouted as germinated!

Jan 22 57. Put Holly capsules & Berries together in artificial sea water for seven days. The seeds are floated for seven days, & then all sunk. A seed was found at the top, one & then several floated & another lump was found at the bottom. But they had not floated. Both these seemed sound & complete. Of the others some seeds & kernels 5 big & 3 little, all the seed-yard & leg seeds.

By two months shewing, the 2 sticks & trunk of trees in exercise (10 Berths) The weather was of cold character. Feb 1st. A Portia a quite brief after 10 Days in Salt Water: this individual had been a week before in Salt Water, & weeks passing. Feb 5 the Ova for about 3 1/2 months old, & in a pint bottle of sea water, and distinctly after 14 Days in salt water but had after 24 Days perhaps not to spawn. Feb 11 Put the above after 20 Days (+7 passage) & seemed to pull & ramble about. Perhaps were kept too warm, when re-crossing. —

The Ova of Solen collected about Down in Pinnata water were put in at same time for 2 weeks, in sea water. Holly Portia sunk & bottom, but when specimen was moved was quite alive & crawled away. — Ova of Clausilia nigricans, re-from the Parlour & also crawled about — Ivy Holly & Holly was alive. Then Shells at end of week had not sunk & I neglected to observe whether Seed floated & sunk. Shells few floated at end; but all the Seeds of them were dead then. Dec. 14th all seed Seeds Pops & Lilac round-shaped grains & seed Holmes.

Feb 7th Put a Pigeon with Canary seed — Beet & 2 Hemp Edge to float in Salt-water made of Bay salt — Seeds in Bay in Cup. from Jan 22 57. Shell floating. from Feb 24th floating 14th floating May 5th Sunk.

1st. Eggs of Shag sent me by Mr Gaskoin, made in Salt-Water, & I think all were killed of 5 Days, but 2 others one hid and many many grains.

Nov 13

Oct. 24. Put with seeds put in with the piece to Sharp oak & pulled out up in 21 1/2 hours. Planted at hour 12 Oats pea-shot — Hemp & millet seed 1/2 (Dec 1st 2 Oats & 2 Millet germinated well).

2. Canary seed from Nutton. 23 hours did not grow. —

Oct Nov 13 Pellet from Sharp oak, from Bird with seeds 18 hours in stomach (Dec 1st Germinate 5. Oct. 1 Wheat 1. Hemp 2. Millet)

Then P. Sanctus shells were collected middle of May 55. 10 that was 18 months 18.

Oct. 30 Put shells No 9 in Weather P. Sanctus Land shells to float all Helix pulsinata & about. 5. Came float & life & crawled about — 17 then part of protected their bodies, but hardly a shell at all moved & was dead. — Then were several 'Limax'.

Dec. 3rd 9th A.M. Put the other larger 1/2 of Mr Webster's & 2 or three in Mercs to float, in real Sea-Water. Of one Helix pulsinata came to life & moved, the rest died. The weather during the exact week by mine to see water was unfortunately very warm. —

1856 Jan 30th a Swede lot of seed sorted through Macadam Stark
one of them germinated: 2 days sorted the three germinated.
Feb. 15th 4 P.M. Fed with seed given to two Pelicans: 5 lbs each
4 P.M. — no appetite for Stark. Feb 21. Wheat 2 Oats. Millet 2 Beet. / 20th 1 Millet
25th 2 Wheat. 1 Canary Seed. 1 Millet 2 Oats — 25th 3 Oats 2 Millet 1 Canary seed 1 Beet / 26th 1 Canary Seed, Millet
27th 1 Beet 1 Wheat 2 Millet 2 Oats. And 25. 1 Millet / 28th 2 Oats 1 Beet 1 Canary seed
Mr. fond in Quarry at 11h at 10 h. m. Planted. Feb 16th / Feb 21. 2 Oats
1 Wheat germinated. / 4 Mar Oats / 1 Beet 2 Oats / 25 2 Wheat 1 Millet 1 Oats / 25th 1 Wheat /
26th 1 Wheat 1 Oats / 27th 1 Wheat / March 3rd 1 Oats /

N.B. Have fixed one of a new with respect to any seed accidentally
swallowed of a Bird, that I do. Thrush &c happen sometimes

Fed also Yellow Water Lily & Potamogeton seed —
3 Water Lily seeds sorted through a Sieve, but did
not germinate.

Mar 8th Guinea Pig with any seed, at 9 A.M. given to Babylonian Eagle:
(the Bird was fed at 9th at 7 A.M. & 4 P.M.: at 10th 9 A.M. — at 11th at 6 A.M. pellets cast up. So it has been 2 Days & 14 hours in stomach, & a 3 hour Day & 18 hours in my Quarry pellets. Planted on 12th at 9 1/2 A.M. — [Mr Pellet cast up at 12th — 26 hours]
Wheat. Oats. Millets. Canary Seed. — Vegetative remains — Cabbage, Beet, Carrot, Hemp, Celery
Not the pure Mr!! The Beet grew well on June 1st (have selected) June 8th Carrots
Beet grew. — Nothing new than any June 17th —

June fed with seed to Fishing Eagle Eagle — Wednesday 29th at 8 A.M.
fed at 30th at 8 o'clock a pellet — June 7th 1 Millet & 1 Wheat grew. June
7th/8th 2 Millets / June 11th 2 oats / June 12. 1 Canary seed /

June fed with seed to Macadam Stork at 28th 2 1/2 on 24th at 9 o'clock
there were seen P. in Quarry; there were counted in Letter, but the
Millets grew well.

June fed with seed to Stork at 29th at 2 1/2 oclock, & pasted there
between 9 & 11 o'clock, say 10 o'clock. (19 1/2 hours) — Planted
June 1st — 5.2 Millet grew

Jan 11. Mustn for Lower end of Reservoir; Letter for different plants. With observation

Three more Tiles were placed on each side of Dam repaired; & Sand spread over the Puddle. Depth 5¼ inches – Upper round Tile 12 inches wide, 2½ inches thick.

Jan 11. Mustn for 2 or 3 Plans for Mills, and a Book to Copy the Patterns

Mustn Letter for under water, when plants were growing.

Jan. 18. 9 Insects: generally / Jan 21. 3 Insects. 2 Dicks / Jan 30. 1 Dick. Feb 2. 3 Dicks / Feb 4. 1 Dick. 6 Insects / Feb 6. 1 Insect / Feb 7. 2 Insects. 2 Dicks. 4 Insects. 6 Insects / Feb 10. 4 Insects / Feb 13. 2 Dicks. 1 Insect / 15th. 2 Dicks / 20th. 3 Dicks / 25. 1 Insect. 1 Dick / Mar 15. 1 Dick / 30th. 2 Dicks / Mar 30. 1 Dick. Apl. 6 Dicks. 1 Insect.

Feb 10. Mustn for 3 different plots in Waterhouse Field on Heath.

– 24. 5 Dicks. 1 Insect / March 3. 2 Dicks / 11. 2 Dicks / 16. 3 Dicks. 1 Insect. March 28. 3 Dicks / 26. 2 Dicks. 2 Insects / 30. 5 Dicks. 1 Insect / 30. 6 Dicks. 1 Insect / 45. 33 Dicks / April 7. 18 Dicks / 16. 8 Dicks. 1 Insect.

March 12. put 4 Stock Shops of in earth, which seemed nearly Topped in with sea water: the second Load in 18 hours. Took one at after 24 hours & was dead – Took 3 others out in 48 hours, all dead. –

20. Put Boxes down to Plant in Reservoir, & even Season with Salt Water from Mountain Stream out of Water. A Stock Flowers stood on. I suspect cause of being Plant in Sea, & Plant out of water for 24 hours as the Plant was quite alive. –

Waterhouse Point

Dicks
Jan Insects
Beaufort

Brought forward →	83	10	
	Dicks	Insects	
Feb. 24	5	1	
March 3	2		
– 11 –	2		
18.	8	1	– 12
20	3		
26	2	2	– 20
28	5	1	– 31
30	6	1	Jan 14
April 1	6	1	July 1
3	8		Aug 1
7	15		
10	8	1	
15	13	2	
	83	10	

21	4		
191	22		
91	7	430	
48	5		
11	3		
16	1		
22		536	
0	1	537	

1857

March 18th. Seeds given to Island Fellow at 10 A.M. Cast up at 1 P.M. & 6 P.M. — Seeds given with chaff finished 8 P.M. for night, was up inside Hamper in wet both the whole.

March 26th — 6 Young Seed / 28 4 P.M / 29 10 A.M / 30 1 P.M / 4 1 2 P.M / 10 the 14 Corns used have germinated.

This was plenty of millet & cabbage & turnip & oats in the 10.

April 10th it is very singular that not the seed chosen has germinated though there was plenty of millet & plenty of cabbage & turnip seed (of which the crop were born was germinated). to note & think on —

Sept 30 1858. — Put a good deal of Indian weed in pan of water, let it remain 12 hours, & it got in upside down two Snails like shells & a kind of bait — If used to put in with fish. The many Snails used for aquarium & cattle, I has accidentally dropped into water in Kilburn — Many shells crept out with weed & the Snails the next day after I threw it for fish food —

Sept 8. the young Swiss in 14-18 Days. Put in Snails first in Quarry & at 3 P.M. 3 sticking on. — 3 P.M. three days shells in Quarry for Kept alive 10 hours only also let on stone the two Days of water — Mem. Snails clean fish in Spring, so that Shells will be kept between Days here —

Sept 10 by many young Swiss (in 1 Inches) hatched in Snail Box with plants, in which they were to feed — Hatched on a Day or 2 or 3 Days — Thermometer at 7½ feet in Dark Room first & at 9 P.M. here Evening. Room & put into Quarry Tumbler on to feed at. Then was quite alive at 10 hours old of Water

At 1 P.M. fed 3 hours on Snails feet; put into Quarry Tumbler

N.B. Sun cannot reach fish tank till 10 A.M. Then little Swiss off to Snails feet. (writing out Remarks to any other Book which I have). Sun can by January off to Quarry —

2/2 P.M. 1 Mar. A.

4 P.M. 7 P.M. 15 & 16 Inches feet on (2 or 3 Swiss) Egg laid a couple of days

5 P.M. 30-40 sticking on. — I think the second as if they could to crawl on Leaf to Snails feet & crawl

A Swiss Remarks crossing Egg crawled & was quite fresh on the Snails feet under glass for 17 hours. — 3 Swiss alive after 20 hours, 1 Egg finished hatching then by crawled from Snails feet & left its shell & Egg, alive was Quarry, put in active water.

If there left on Snails feet for 24 hours, only 1 crawled & then was a Remarks; but 6 to 7 sticking on the things quite dead; most of the crawled from feet & after 1 Egg. shell was quite changed, thick & dark was not in water; of them about 1/3 crawled the 24 hours.

Thick Envelope 2 inches required for any Book

New weeds were few for all May & potatoes few larger animals. I suspect effects of moisture got comm of destruction. —

	dead
Mar 31.	25
April 10th	59
20	28
May 8th	95
June 1.	70
	277
June 1 living	80
	357
July 1.	87 / 357 alive
Aug 1.	62 / 357 alive

of the 80 marked plants.
a few & by few were
also lost sight of

357 / 62 / 295

80 / 357 of the 1/4 dies

(25)

Weed Garden. Mon. Indian Head. — (Old Pasture & Hen Meadow, ploughed 1874.)

Piece of fresh ground in Orchard, which had been (but not by fork pitch) & one Pasture for Large animals. Mostly of the fine Meadow Red — the rest 36 miles & 24 miles. — Dug in January & almost of disappearance — Dug in March each began to spring up: marked each clearly.

March 31st About 55 marked, of which about 25 killed already.

April 10th Killed up 59 when making these readings before destruction of them began to be known, I suppose of slugs, & large grasses & worms, & apparently [illegible] were located at the very rain. All, & nearly all earliest seedlings then destroyed. I think [illegible] escape better than others. [so Jack Fly insects more & being often & exposed to weather & dry few, is better chance of being destroyed]

April 20th Killed up 28 more, dead. — [I think dry weather is beginning to tell against slugs]

May 8th Killed up 95 more. (I suspect [illegible] these last seedlings are killed & destroyed)

June 1st Killed up 70 more. —

— Left the 80 with living of several kinds until Removed & dug up. Left the Hedge. (by turning few less than up. Dug all dug)

July 1st — 13 of the 80 are now dead, leaving 87 alive a few more & but a few are seedlings, but some of now there are 67/357 alive & not all 1/5 alive. Evidently the soil with is in early stage.

Aug 1. 5 more of the 80 are dead — leaving 62 alive

62/372 62/310 — say between 1/5 & 1/6 provided how much

1887. April 8th — 16 K. Seeds each row in Strip Field — all

Beds 10 in Plot. 1 inch deep & in rows; with Feather

Potatoes across Beds. —
Left hand — Kidney S. | Lower end to Top end | Middle Row | each row a little deep | Right Hand Rows

Beans
Up 15 No growing in week — dug eaten
June 14 7 Up. 20 dec Rest

Peas
Up 15 few growing a week ground

Radish
Generally
grown & fit to eat a little

Carrot
Generally Up

Kidney Beans (Dwarf)
3 Up. 1 week none
Up one generally by 25

Spinage Spring
Generally

Com. Salad
Generally still

Onion
Generally

Celery
Not Generally Up
Few Up

Parsley
Generally

Lettuce
Generally Up

Scotch Kale

Generally

Turnip Rooted

Generally

Carrot
Few

Turnip.
Generally

Rest Row & Left of Red Beet. few generally — June 15 very few Up

Rest Row of Carrots very few

[illegible] eight chinks & soil (gravel coal) but the larger [illegible] Beans & three chinks put to planted at right depths (Earth-worms & ground excavating) (& depth experiments on chinks deep & shallow) & of these most germinated, & then cases bottle of Lizzie with slugs & insects & other plants

May 28. A few Peas that up & fine wide Leaf & fortnight ago, but on 29th appear much pierced & heavy Leaf: I took Letter of my wife Mark Seed of Pop. rough Beans. — Most of the seedlings look pale & sickly & bottom of bag Pop.

Jof 1. I can see none alive of any kind

May 1. But one plant has gone up — The Beans look pleased. —

Sep 1 June 1 I made two a Planter 4. of Lathyrus grandiflorus a of Bee had visited — 1 shaded off — 3 others seem set; of these two grew — little & then shaded off — One has made (Jof 1) a little pod — but this often pod on other 2 plants with innumerable flowers — Bees do not as yet visit flowers

Jof 1. Bees at work with (2 or 3 at a time) other flowers on 2 plants. 1 of these set — but then I suppose some pods set of Nectar — I May say some good effect Also contented 4 common Peas — pictured two — a little two with no pods — The 2 pictured pea much larger, but were gathered — One that was not pictured found much pod but no peas within

Jof 2. The Lord Dow removed Pollen from 4 flowers, some top, some bottom & middle on 4 plants of Bee Orchis, & put on pollen masses from other plants — (Marked pod with chalk-counted & other brands been there) then were other pods swelling on 1 or 2 plants. — All killed by Cows

[1858 I hoped that this year be [illegible] pleased we good effect. It ripened flowers produced a large pods.]

1859. Then followed (I have mislaid a new skeleton note) for I believe some [illegible] dark purple like mallow, & some almost white pale pattern, but slightly fairy streaked & blotched with purple on the wings. I used bits of dead flies these latter, having changed the dark purple to the others the [illegible] accidental coping.

Dec 1859. I have tried to get me of these grandchildren from pure parents; but as in Like dark [illegible] grand-mallow, except on pink. Like pale grandfather, but most are streaked with more & less dark pink on wing-petals & a few have pure pale purple wings. I think mallow a new variety, with the standard dark crimson than to the counter, but not as the purple like that of grandfather. In fact not as the purple standard. Some have standard petal streaked as well as wings, showing clearly what a tendency there is to streaked colour in these hybrids — All tends to show no reduced coping with mallow-pear. —

See p 69 for pink grandchildren

1859

Jan 1 Carbuted & Sir Peas, standard dark purple, wings blue (blue as the dark one) & pet a pollen of the palest pink roses. — I put flowers in Bottle — One marked with red inscription / another blue — one marked white was pink carbuted. Seeds sowed. X

Jan 1 put 2 Eggs of Water Newts in one vase for 10 days & 3 for 20 days Killed. — After milk. — 4 Third without water pierced some shells, 10 eggs good —

Dried the leaves of Lichens for 6 weeks & then put in cold damped it, & the dried water, but eggs came to nothing.

Oct. 14. In to hypothesis that dried eggs had developed with water, then were 6 weeks in some more incomplete in shape & shells. — Then was the twig with the cocoon pierced & the head round was elongated: then were more for three. were pale twigs & were shed. Dried. — The eggs are pretty nearly always shed in three. & Four moths obtained of white tussock. (3 females - plenty) Some of the flowers had eggs & young hatched, & others of one. One flower had seven eggs & two pistils; 2 flowers found 2 & 7 caterpillars each. —

31

May 15. Harvested Stocks. Heads for Shanpai (Up to and
inc. of the Lightheart, inc. Sandy. Others about Earn
ripening.
Also the Septembrian white marbled Scabious

1887. Dec. 1 Sown seed of yellow Water-yellow, so called, part with Fruit,
given to Garrett, Sown whatever up & seen hopped through Bird,
under germination: Kept this May 5th

1888. May 6th I think after birds, Spare-Peach seed could exist
because entangled & torn pulled by Birds feet—

under Bell-glass
May 9th sowed up Heathers. 18 pots labelled with their contents but one of
the opposite Dead flowers: the 19 pots labelled I mean I might finish with
all but one. in purpose to exclude Bell-glass but without labelled flowers.
Not written 19th written as 21st — 22nd Sown the flowers written.
23rd Did some to 2 the flowers & marked them with those wanted.
None of the flowers obtained set a single seed — So experiment chiefly
failed & totally nothing —

May 26th Gilia in K. Garden. one plant has broken & rolled pistil with
both a seed 11 or 12, nothing questionable; & to connect
or forego written cradle = cradle, written) of white.

June 2nd Saw a Lobsterman. Bee with yellow & hind legs. entering into Wisteria.
Saw three Bee on it. was common. (In 2. Gardens). Saw one Bee, with
narrow yellow rings on abdomen, visiting Lotus. Both of Sept

1855

3 plants with[illegible] that in Ch

June 4th Found with 2d on flower of L. gracilipes & several unop.-buds

— " " — — " " & L. ? with many unops.

I am certain could take June 5th as well that in which found flowers

14th Found 6 2d & 1 mid flowers dropped off — 4 unused dropped off.

15th — 1 2d 2 do

16 2 2d 4 do

19th 2 2d 2

1 Rd 2d

2 K. Jardin 1 2d dropped off.

One pod alone was found on the 3 plants & dropped off. Two pods of flower were found on the 3 plants, & left one pod ripe; but I am sure nothing takes place between flowering & withering, during that time effete was found.

I saw another [illegible] Red Bee sucking closer & it seemed to visit both of Cattle — at least in one place. And I saw it suck it was visit — I saw [illegible] Cattle Bee sucking red-clover I may safely give up speculation. Saw a Yellow patch Fallen Leaves Leg-Long Bee. I believe seen big yellow & Bees in Leppa-ca.

Aug 17th I cleared up many 4ft lengths of latter crop of Kidney Beans, the contamination of which was being kept under control by frequent thinning. [The main crop of Haricots has the dirt cleared up, which had grown in upper part of Kidney Beans inadvertently.]

The cleared up lot had 74 stalks bearing 97 pods: i.e. an average 1.31 pods to each stalk. The pods included 261 Beans: i.e. an average 2.69 beans to pod. But it is difficult to count Beans on account of so many aborted ones that had better be omitted.

Of the stalks which included 4 pods of fine shape of No; a fine one standing first included 14 beans i.e. 3.50 an average. Assume I do not count the unfertilized or fine ones as in other stalks.

Of the cleared crop 155 stalks had pods (i.e. left rather more than twice as many as we cleared); & the number of pods was 292; i.e. There are many as we cleared up. But these pods included only 739, i.e. only twice as many as cleared; but then I do not think certainty of Beans can be counted.

1857. In latter part of June I cleared up pods 3½ length of Tall Kidney Beans first sown, I then sown mixed 19 flowers. Ab. during in January. In July 18 I counted to flower & found 5 from pods, & one aborted pod: - During 18 beans, 2 being cut for Bean. - Some of the mixed pods were in centre of row & may have aborted for shade of plants. - Of the mixed flowers there were 35 pods: but the number was actually a trifle to be more exact to Bean podded; & there was not one case of more pods than one on a stalk. Of the stalk of the pods with 5 seeds - 4 | 3 | 2 | 1

10
16
30
22
8

35 | 86 | 2.4
70
160
140
20

Hence these 35 pods had an average 2.4 beans. 5 | 18 | 3.6
10

The 5 mixed pods had 3.6 beans.

I also cleared up a plot of chicken wheat with grasses (just before flowers opened) & then that I think it is not be injured seeding: I saw Bees entering visibly from outside. I then took the beds for both & counted the in each of 3 feet by many 10 times & many in the others, & if also the beds with bees in may be more expected, then one four times as many seed.

I sowed with them yesterday, pink haricot beans, 17 plants of Beans. I noted 11 plants like Beans, but the produced 5 thin pods (& one imperfect) these five pods had 15 beans in a single pod each. (third in full measure, though the pods were not injured.)
Then 67 plants produced 36 pods + 5 which were injured & a third would have produced say 40 pods. So that each plant produced at most an average of 2.35 pods. — The 36 pods produced without doubt were counted, included of 1.11 beans if & no less than 8 of the 36 pods had but a single bean within it.
These plants had not one pod. 31 + 36 pods plus of 40 Beans.

In an adjoining row, 18 plants were left to form others of Bean, these produced 47 pods; i.e. 2.61 pods on average: ~~in the row~~ These 47 pods included 141 beans. So that each pod on average included 3 beans
36 of the pods must have produced 168 Beans

Hence we see the Beans tend to produce rather more pods, & a rather large number Beans, in proportion of 3 to 1.11. — Seem general results as for those of Kidney Beans.

Pisces April 4/59

Seeds of Kidney Sweet pea ~~and~~ of
from the pale pink, white and
lilac were chiefly streaked
with dark pink. The
dark purples were all the light
& those can be seen
in the keeping in the present
Sept. 18/58

8th 22/58/ I find effect of slugs milk in sea-water. —

39

March 29. 1859. Fumaria = Corydalis tuberosa a-
Spurs on both sides of flower, the stamens a cup on one
side stem on the other — cup open with plenty of nectar
thick with nectar — Hood with anth. Style of pistil side
of longer nectary; cannot be slipped off a stem side. —
Pistil slightly curved towards side of longer nectary.

In write Pencilled cake of Hens - Get yellow Spanish Cock from
Mr Tegetmeier & following pure-breds - 2 white Game, white
Cochins - white Silks - Silver Spangled & pencilled Hamburg - Silver
spangled Polish - Buff Dorking - Silver spangled Hamburgh - In case of these breeds any Red.
June 10th Four larger pigeons of chickens Black - But on
white hen Dead (& white Barbary Black hen died). Some of the white
hens & eggs few scattered Black feathers.

[One lot of mixed eggs for white Game & white Cochins & Black Spanish
consisted of 11. & of these 4 Black & the 7 nearly white; 10
others of Cock was always 10 pigeons as stated.]
This leads to show these 2 white Breeds are true.

[Next year of good chickens as 2 grand-parents of the sick hens were Black
& an uncle & to hens are Blacked white, & are in the 1st generation
10 young Black- birds, there ought to be great preponderance of Black.
June 12th 2 more Blacks have died. / 17th Six more Blacks dead / 21st 3 more Blacks
Out of the 4 to white of 1st Brood in June white; & the white hens
seem to be getting Black feathers. Jan 25 White & Black Dead /
Aug 19th A big cock in moulting which was sent Black chicken
in the Autumn feathers after to Sun. A few of many other
Spanish with speckles over the body. - The Pullets of
white silks - fowls & Spanish Cocks - to Spanish cocks
for both parents are Black & other breeds. -
Some hens Light & Silks - Black - skinned & Spanish
Spanish - This breed has no use may for 3rd
feathers on neck & back.

1859

June 23. A few days ago I crossed my Bell-glyph Corydalis lutea & marked 2 flower stems with worsted, & stopped off the flowers which were ready & a little brush to imitate bulky of Bee, when many flowers & bruised petals with brush; & I then dug up the two flowers on withering on their two flower-stalks, whereon not one is withering on any of the other empty four flower stalks.

23. I also stopped off spontaneously simple flowers on one stalk, & this (25th) has now a pod, shown to have a cruciate flower. See note.

June 25. Stopped off a flower 2 from bottom, & this (27th) has just set pod; 2 [illegible] June 25. The 2 flower stems of which I have stopped to flowers, four pollen-sacks to become ready, have now a very pods & others, whereon no other flowers - stamens. I can find up on simple pod. - 26th I have 2 pods. - 29th The plant now pretty well crowded with pods & others; & I have see clearly pod set (Mature Sept 8th) without the petals naturally dropping up. - To make sure of taken place of intercrossing of insect: & it is now certain that there necessary together & setting of pods. [A.B.] has not been guilty, as there is no [illegible] flowers being ready for fertilization.

June 22 Marked 4 flowers × to Lobelias & bruised under Wasted. (24th one stopped off & the 2 have made their pods & set a the flower set & the bruised have a pod 26th & set pod - Corydalis.

July 14th a crowded pods of Corydalis, 9 pods which 10 have seed, extend 32 seeds, shown 9 pods taken nearly for each stamens & four about same height as stalk extended 53! So many unfecundated & pollen-sacks not like Bees which would suck & other visits flowers

Sept 18 1859. Collect very Cocks from Silk-House thrown down long ribbed - bitter feathers, others taste. - [A fine cock for cutter game or Cochin (Mr Ing Selwin) and feathers one tail & pale hackles as well like the Jackdaw Hackles - Cutter cock from Game, shit was also quite white but no few tail-feathers one tail.] [Another cock shit from cochin & ribbed plumage in Dark & fine pencilled Hamburgh, but the white feathers one tail. [A fine Hen for Cochin (with feathered legs) & getting more Dusky & big feet Black. -]

Dec. 24 '59. Killed cock for Sam & Shot with Hens. Comb Red-pink simple deep serrated with large shit cow-lipped (shit cow-lipped up wattles) neck with yellowish white hackles (centre of each hackle black). Hackles one tail to like one yellowish tail. Wings, with dark green bayes crossed over secondary feathers & rather crossed one tail yellowish shit. In fact of these yellowish-shit feathers to be one of 4 to great secondary wing feathers to be red, to Bird is here considered white of Back. [Cutter Cocks with rose comb (above alluded to) with large white cow-lipped eyes with bill, weight pale hackles (white & many hackles dusky yellowish-yellow shit, weight 7 to 8 lbs the sons of cutter crossed over secondary wings feathers one shoulder shaped with black & breast dusky is body. Agreeable with white from Hamburgh parents.

The Bill pencilled & shaped Hamburgh hen rose comb. Body for Sheppard. The Bone in Neck of all got killed chicken for Sheppard a white Silk. — Cochin hackles & feathers all to a white colour.

(Continued on p 44)

Cogdalia Cuttata

Sept. 4. 1861. I covered up a small square on plot of this Cogdalia & left the uncovered. The covered plant seemed perfectly healthy. — I gathered equal portions & compared the number of heads & the uncovered, (which had grown very fine Bees) produced exactly twice as many seeds. — Manure to good under the plant was Rock with seeds, which was of the nature to cause 10 shoots under to stay. — Hence insect visit in the fertilization. —

Covered up patch of Trifolium incarnatum, leaving equal patch clear & uncovered & then was much visited by Bees. — The heads seemed equally fine on both; & I took 60 from each, as far as I could pick of equal size. The uncovered produced 3.4 g. weight of seed; the covered only 63 (+ by very shrivelled seeds); so that the latter produced exactly half way between 1/2 & 1/3 of weight of the exposed. It was remarkable how much larger the covered uncovered is Bloom & was a little fresher up, but very stony & heathy; this latter may of flowering might be due to this cause, but I believe only to non-fertilization; & from last year I cannot doubt to what extent up a considerable [illegible] of second-flower heads, due to exposed plant bees &c.

We know, also, that Acacia & Hedysarum have not taken root of coarse, when sowed, abundant seeds. It is probable that when the heads [illegible] covered were flowering, they exposed very shortly, so as to be only 3 or 4 days behind to exposed. So that to every one seed produced without aid of Bees, 5 or 6 produced with their aid.

Medicago lupulina

Transplanted from [illegible], a cultivated yellow clover; 150 heads about equal in size when grown produced [illegible] weighing 77 grains

Near Bees " " " 101 grains.

Ps. I have found to gather them at same time & separate bring to note. I could not check to seeds; & perhaps to weighing would have been somewhat greater as I have weighed to dry.

Shade with Bees, as with no Bees - bees visited the clover, —

Aug 1. White Dutch Clover. (J. Lupton) : experiment partly failed, in that I got only 20 heads for which not one of yellow clover; (the rest being brown) these 20 heads produced no seed & I saw literally one of another sort. — 20 heads gave to Bees produced 25 g. weight of seed, & the weighing 2 g. I calculate the weight of 25 g. contained 2200 seeds! This strange & general in confirmed & last years experiments.

Aug 13th Crown Bud. clover (J. Lupton) 100 heads gave to Bees produced 68 g. of seed. Two grams yielded 90 seeds : ∴ = 2720 seeds

(full) (ie 102) (100 ? sent empty cut heads which to not produced not one single seed!!! Often I am positive. —

A fine tall branching plant of Mahleb officinalis came up which not with clover : it & bore many sizes of racemes, which did not set a pod : several set one or two pods : & set 3 pods : & set 4 pod ; & one set six pods. — When uncovered (August 11) Aug 13th was covered & many little — Bees. When broken of wind, & any fine seeds preserved. I cut off all the stalks with + without pods, that had finished flowering under cover. — I did not cut off those stalks which had even more than half-flowered & the half-flowered cut off those flowers that were not so shattering ; as it might otherwise

have been. Even today Aug 16. (4 days after visit of Bees) a multitude have flowers have withered & apparently dried set. I tried one raceme with branch & flowers all in entirely withered. —

Sept 10 Put to Mahleb to help a single stalk with no pods; only 3a few with one or two pods close, & then my hen from stalk ; this also to have flowers shielded whilst exposed to. —

Stalk with	pods	Pods	Number of Stalks
1–6	average 3 =	51	17
7–8	average 7½ =	90	12
9	=	27	3
10	=	60	6
11	=	66	6
12	=	60	5
13	=	13	1
14	=	56	4
15	=	15	1
16	=		
17	=	17	1
		455	56

I. that the 56 stalks bore an average of 8.1 pods. — As the crop had cut number of stalks bore 10 pods I by 14 produced at least 20 or 30 times from cut the visits by Bees — Of 56 stalks the 17 pods gave the 6 pods each —

Sept. 26. gathered to Exhibition - Skittle ox evidently; secured with 15 yards on each skittle — 5 with 16 yards / 3 with 17. / 3 with 18/ 1 with 19/ 1 with 21/ 1 with 22/ & one with 30 yards. —

Poultry

Jan 19. 1860. The children go weekly Monday & have cut chaff & good soup. Sooty & Richard — One Hen for Spanish & three soup. shoulder, leg, one broth & two backs

Jan. 13th — Most of these died — Those which have survived are Black & white; one or two cocks have lost combs, wattles & ear lobes. — The cropped Hens did not show any signs of sickness. —

[Cropped Hen Pumpkin with Black Polander. — The Cropped one the brown or Black with fine white mottled feathers. — Hen like wild Duck. —]

[Lev. p 41]

Feb 1. 1860. Killed Shanghai Cock (hyper albino C) for fowl Hen. Hackles very long with slight orange tinge; & 10 or twelve hot in upper region & one like upper region & tail. wing-coverts.]

[A Hen moped for Cochins - Hen showed a tuft of brown in her Black plumage.

April 1. 1860 Sam of to Pet. Black Hens, reared last year, moved for 1 Litter from Shorter pasture.]

Ap. 24 [The eggs of all cattle with Mahil Cock feed. — Brought for short Jasper a little Hen. Compared with fine Bantams. Second crop of chicken, but rather thin kind; Hackles on neck & rump, with narrow mahil black bars & tipped with black. — Some cocks - hackles later & rump, & so with to have neck Hackles on body more rump. Decided neck Hackles & close round Hackles - broad bands of green, & with the up narrow spots of green about on neck & body - Hackles. — All becoming body Black tail body & wing. —

Wing upper part Mahil wing - coat green; then band, then green; then green; then band. Then green; the same difference in tail with the principal one narrow edged with pale purple. & to secondaries one broadly bordered with Mahil brown, shows also principal & the secondary feathers are Black in this, Pheasant. Hen stuffy Black glossy green reflection Mahil = brown on the secondaries. — I call Mahil cock]

April 30 The 3 Cocks which have been kept for this spring, have been the above cut on fine silk-like - 2 a White one with round cut fine feathers & 3 Black cock with Mahil hackles for silken Plumage. The young chicken are of beautiful; one with white neck feathers; another with-

Feb. Pastrydon caught in sleep with both Legs broken; eg. round
March 1. Rich & fasted & a bit of moss grown -
March 1. 1860. Mr Norman shot a Rook dead: 5th Specimen of Bird [& group] he shot of last & under closure - Mem. Rooks Worm eat & Medicine.

Pastrydon

Eg. 15/60/ Leschenaultia formosa fm Kew.
Leschenaultia formosa
Leaves pale green. stalk with
wings of pale green, petals below subset of
petiol & inflorescence - Inflorescence closed, but after
2nds green tipped. I believe pollen within - Calyx pollen above
Bracts in 4 rounded whorls. closed I believe to be stipules -
What use can inflorescence be? Then a small nectary
Of 25 long eg pollen within inflorescence; glands & hairs
28 Oct. Specimen still Mainly pollen within inflorescence
Ill. Petals lie close to whole upper petals -
I see often little pollen on hairs of inflorescence -
Whether Bees see inflorescence in search of pollen, & so carry it from flower, I can see no way of escaping - I have seen them there many times - Honey-sucker flowers. & the bracts pale Red. -
May 11 I have opened 8 flowers. In 7 abundance of brown pollen within inflorescence in single bunch on under side of upper lip; but in one case I could see the stipulate function of bracts. - In closed eg. flowers pollen on tips of hairs on upper lip, which is generally a sign of inflorescence. Then petals

Leschenaultia formosa
Leaves pale green. stalk with wings of pale green, petals below subset of petiol & inflorescence - Inflorescence closed, but after 2nds green tipped.
Bracts in 4 rounded whorls. closed I believe to be stipules -
Then a small nectary
Of 25 long eg pollen within inflorescence; glands & hairs
28 Oct. Specimen still Mainly pollen within inflorescence
Ill. Petals lie close to whole upper petals -
I see often little pollen on hairs of inflorescence -
May 11 I have opened 8 flowers. In 7 abundance of brown pollen within inflorescence in single bunch on under side of upper lip; but in one case I could see the stipulate function of bracts. - In closed eg. flowers pollen on tips of hairs on upper lip, which is generally a sign of inflorescence. Then petals

Leschenaultia
Leaves pale green. stalk with wings of pale green, petals below subset of petiol & inflorescence - Inflorescence closed, but after 2nds green tipped.
Bracts in 4 rounded whorls. closed I believe to be stipules -
Then a small nectary
Of 25 long eg pollen within inflorescence; glands & hairs
28 Oct. Specimen still Mainly pollen within inflorescence
Ill. Petals lie close to whole upper petals -
I see often little pollen on hairs of inflorescence -
May 11 I have opened 8 flowers. In 7 abundance of brown pollen within inflorescence in single bunch on under side of upper lip; but in one case I could see the stipulate function of bracts. - In closed eg. flowers pollen on tips of hairs on upper lip, which is generally a sign of inflorescence. Then petals

Leschenaultia formosa
Leaves pale green. stalk with wings of pale green, petals below subset of petiol & inflorescence - Inflorescence closed, but after 2nds green tipped.
Bracts in 4 rounded whorls. closed I believe to be stipules -
Then a small nectary
Of 25 long eg pollen within inflorescence; glands & hairs
28 Oct. Specimen still Mainly pollen within inflorescence
Ill. Petals lie close to whole upper petals -
I see often little pollen on hairs of inflorescence -
May 11 I have opened 8 flowers. In 7 abundance of brown pollen within inflorescence in single bunch on under side of upper lip; but in one case I could see the stipulate function of bracts. - In closed eg. flowers pollen on tips of hairs on upper lip, which is generally a sign of inflorescence. Then petals

Leschenaultia

In early summer I pushed pencil-brush in many flowers no effect.
On July 25th I did same for 5 flowers, & all five set pods which have remained on till now Sept 19th: Now 3 have dropped off & these were small: Two others are much larger & I can see seeds within. — Though whole plant covered with numerous flowers — only two others have set pods which have increased in size & have remained long. These are nearly as fine as 2 finest, which were touched with brush. These two are near each other — Perhaps visited by a fly, for I saw one on Scaevola feeding on pollen. —
Dec 8th. I have now examined the 5 pods: 2 had no seeds: 1 had half a dozen: 1 had 26 seeds & the 5th about same number. — The two pods which had become self-fertilised, were not so large as the two largest of those fertilised by brush: one of them had 18 seeds & the other 14 seeds. — I planted all these seeds. None germinated

Mr J. [illegible] (vide note)

~~1860~~ May 8th 1860 in greenhouse & Experimental box

I examined about 1/2 Cowslips, with long pistil & very short anthers, [illegible]
2 other 1/2 plant (all same on same plant) have very short pistil with long anthers at mouth of tube with much pollen — Case of [illegible] — The short pistil, peculiarity (in male flowers) is ~~[illegible] large~~, flattened at pole & smoother & pale coloured. — The long pistil, which I presume is affected in more globular ~~[illegible]~~ darker coloured & rougher.
The pollen from male plant (i.e. with long anthers & short pistil) in all apparently affected each granule full of brown matter & apparently spherical. Whereas the pollen from female plant with ~~long~~ short stamens & long pistil pollen in water — dry pollen nearly same proportion — is smaller nearly in proportion of 6 : 9 i.e. 2 : 3. & much paler coloured owing to contents not being so brown & granular & apparently not so coherent. — [I examined 2 wild [illegible] ~~[illegible]~~ pollen — ~~[illegible] in stigma~~
May 11. The ~~[illegible]~~ Primrose wild — same difference in female flower (i.e. with short stamens) [illegible] quantity of pollen. which in water is rather more [illegible] & in diameter 6–7. whereas the male flower with long stamens has brown pollen, each grain apparently fuller of granular matter & 9–10 in diameter. — [~~[illegible]~~ stigma of male flowers perhaps a little larger, perhaps rather lighter coloured — perhaps rather more depressed at pole, but certainly far smoother: this latter difference certain; stigma of female flower much more papillose. —
[Pollen of Primrose & Cowslip very adherent: must inquire into this.]
Peeled sticks to Primrose & Cowslip means female — Sticks not peeled on stems or whole plant means Male — The Experiment bed Blue worsted means not touched.
{Male Plant stamens long, pollen large, style short, stigma smooth,
{Female Plant " short " smaller, " long, " rough,

May 11th Examined 2 other plants [illegible] from near Jordan Hill — Pollen &c. — containing pollen of female plant is more transparent — & has different aspect — Pistils pollen about $\frac{9}{1000}$ of inch & stalks little above $\frac{5}{1000}$. Pollen of Female plant, generally rather above $\frac{4}{1000}$, stalks near $\frac{7}{1000}$ — $\frac{1}{2}$ an ovary $\frac{4}{1000}$ & $\frac{5\frac{1}{2}}{1000}$ — nearly 2/3 of size. —

Put the flowers from male plant, put in water between glasses & the stalks is $\frac{4}{1000}$ & $\frac{5}{1000}$ — Examined pistils of the 4 positions shown — stripes of female much more, stalks green, more globular & round & fleshy & larger than seemed brighter deep red of stigmas — The stripes differed in size in the two female flowers. May 12 I compared carefully flower being opened & there can be no doubt & difference of length of anthers stamens (& of their stalks) pollen abundant then; I think anthers [illegible] up pale in female flowers —

I examined 10th colours, Auricellas for ear Carlisle. Flower was on female plant with long pistils & globular stigmas; the last pollen-grains were about $\frac{4}{1000}$ of inch. The pollen of male was about $\frac{5}{1000}$ — looking with $\frac{1}{2}$ Ross eye-piece conspicuous difference in transparency of pollen: the female pollen being far more transparent — Flower in male plant more regularly of length of stamens than in Cowslips. — also paler generally in paste. The stripes of female rather globular, yellow, the tips smaller & longer. The stripes of male by comparison. In one plant the chief was little of position of stamens, the pistil reached up to them & the stigmas were rather triangular

[illegible] Carlisle

& Cups bigger, with [illegible] of globules. In one stamps shape pistils & especially stigmas quite altered & miniature!

I examined 12th Polyanthus flowers for Carlisle's father; pistil shortest & stalk with pollen — Another & female with same difference in pollen & stigma & in corolla. —

Of two Kinds of Orchis for Carlisle one was male & the other female.

May 13 My children gathered pink bunch of Cowslips. 79 were clothes were male flowers, & 52 were female flowers (& two — with imperfect stamens) — I often [illegible] that female clothes are apt to be pulled & thrown away by the children. I can perceive no difference in size of flowers in the 2 bundles.

In 2 Cowslips flowers of apparently same structure, pistil long & written the seed-capsule in female longer & the ovules about twice as large as in male flowers & stalks green. — Just abundance of female cowslips in the valley.

In two buds [illegible] with just tips of petals visible, anthers in male & pistils shown no perceptible difference.

In two flowers, about $\frac{1}{2}$ opened, I could perceive no sensible difference in size of ovary

In two the flowers of cowslip sent from [illegible] Cowslips [illegible] the flowers was actually longer in male than in female opened flowers like —

In 6 male flowers the length of pistils & pappy was a little less, the stamens considerably in different plants, & in some about $\frac{1}{4}$ the length of tube of corolla

Aug 14. Flatts with 5 flowers & under 5

Females 77 Males 103

Flatts a Number with 6 flowers & upwards of 6—

Females 112 Males 99

As the size of number does not affect eye; all those & those collected together may be added together; those were collected in two fields of very different nature

Females 52 Males 79

77 103

112 24

Males 281

Females 241

241
281
52
Total
adopted

Aug 16 2 cwt[s] flowers just cut & withered, from Sandwalk Orchard same size — seeds of male larger than males — a little yellower — certainly a less proportionate number of minute abortive seeds. — Two flowers on Aug 15th cut from greenhouse — Most different in size of seeds & those abortive — Here too male seeds have more abortive seeds. —

I mixed pollen of white female together & then rubbed on the pistil of ordinary thick male yellow flatten there can be accepted for a greater number. which is often as 5:8. — Males of larger flowers difference in number of spines not very marked. —

Compared seeds of male & female flowers just withered; it is difficult to get of some age, that I think either can be safely said. — those male seeds are very slightly yellower

Cowslip

Saw Bates American getting pollen of greenhouse Cowslip — has some beautiful double & tiny tube of females in K. Garden & in chicken house two inferior females in the Philips field — when my many cowslips. I never saw one of Primrose — I do not believe thrum-eyed and pin-eyed either — I suspect Mother must have one thing. —

Aug 20 cropped pollen off two white flowers just opening; pollen in both flowers in pistil — both Cowslip different forms — female different in size, the pollen of pistil is certainly different shape, more elongated & more transparent in middle — The pollen of male more opposite — spherical forms — In both both pollen spherical & there size of difference is apparently more granular matter of more opposite nature in male pollen than in female. —

J. B. K. Gardener plants 10 miles male flowers into hole that pistil must have got down to stigma — J. C. Thrift

June 1 by cwt[s] 2 pollen from another female plant on to stigma of [illegible] 1861. Aug 18th Four Cowslips in K. Garden have flowered & one of them appears as in offspring. —

Pollen of Males = on Females

Orchis

May 18 1868. Cross up plant of Orchis mascula: left one uncrossed; which got capsule; but shedding pollen-mass of 5 flowers crossed; 4 left uncrossed; buds above. - This plant grew in 3rd-Wall. -

June 1. I have up left anther uncrossed for 2nd day, but with pollen-mass removed. No seem up to date no point of removal.

May 24. About 10 days ago crossed up 4 orchides (from middle spec. in exhausted garden) in Beh-plot. I fertilized with comb-hairs 3 flowers, finding up pollen for bend on three plants up into 1 spur; & other 3 flowers have just withered up on my return. - [2.B has thin-Ben going to crossed with orchid in number] & Jun 14 other 3 have left fine pods, when I fertilized their 3 flowers other were my return; he see Jun 24th I find of 4 large pods - of them 1 lost - 1 with no way seed in an adjoining plant; & 2 others with mixed seed. - There are other pods setting; but to make of pods up mixed up them in an adjoining uncrossed plant. - On this adjoining plant at least 55 pods were left fully as large as the 4 selected - The tops of 12 plants bitten 14 5 50. - July 4th A plant crossed up. I find 14 new pods

18

60 but each of them very small, & many seeded with only 1, 2, or 3 good seeds; then so far is very good evidence of necessity of insects visits: for thrips or [illegible] might convey a few grains of pollen. — On the other exposed plants I now find 50 additional fine Pods.

Aug 4th I today uncovered about 4 feet long of Early Emperor Pea, & the plant was covered with splendid pods.

61

May 24 — For last 10 days I have seen many Hive Bees & many Humble Bees going to Broom; they crawl into unopened flowers for pollen: so do [illegible] Hive Bees & Humble Bees — The Hive-bees are of that size that in entering they partly straighten pistils, which rubs against & displays their bodies dusted with pollen. — This is rather different to what I remember formerly, when stigma rubbed on top of their backs. — June 27th Not one pod on covered up Branch; whereas other branches covered with pods; but in places shady, the uncovered [illegible] under [illegible] of shade. & 10 covered pods [illegible] — It is surprising that Bees should be necessary seeing that pods [illegible] of itself —

~~May 23 I covered up Vicia lathyroides & other [illegible] in Sand walk~~

June 8th marked 2 hermaphrodite Thyme plants in V. G. with stick with bark. & 2, with all flowers without stamens with naked stick. The 2nd female plant from further end of V.-G. has many very many of its pistils trifid at summit, sometimes 4 fid. & even 5 fid. I do. To see about seeding. — Aug. 4th I sow the females seeds very well: I think better than males?.

1880.

May 24 rowed up Cripps reglass - Pretty effect of the lilac with behind it cattle, but very near them; so that rival might escape in prospect to steppes; but to please others & I do not mean except to the Rose way -

The cattle go in face towards to trees; a bee would perch the cattle back & then would not a general response - [Iris B. Macrocarpa Seedling very thick of to Apiospermum & Driving bed with bunch of corollas] Sept 9th I saw in rowed to Iris - N 2 which I pollinated but not bee and & the the pods which I did not touch on with etc; but I think found four pods then a rowed plants, but then little seen the to about is hard to say positive. Century to them with not in sow as rowed in rowed - Some little - my plant when not set plants of seed. -

May 25th rowed up. in rowed with. Viola hirtula [pale] and Hastata] & Viola sylvestris. Viola ova. - May 30th Mixed flowers - Some & the flowers of to 2 Violas seem to have set [illegible] then the From ovaries Inspection pronounces & Viola d. has long : is it wanted?

Jun 21. I have visited repeatedly (at 2 nights for moths) & seen now any insects visit the flowers - Jun 27th saw the wild by Pollenia rudis & Sept 9th the pods on V. hirtula (at to Staplehurst) are now large & appear as numerous with a perfect seed as in those rowed in rowed. — I have carefully compared them. —

Aug 4th If there is any difference to V. sylvestris & hirtula I can more & fine pods than to few plants! Plants of V. hirtula there. —

Such flowers as Galium & pink Hollyhocks for me

May 30th found very simple flowers of Corydalis, which was [illegible] the corn open except to bees, & so trapped the sun I believe they do not shape the of not visited by Bees & then shows his effectively seen had visited two plants - [May 31st rowed white Iris of Rivers for Mr Phillips at his wish as trapped this] [The Iris B. Macrocarpa Shape of flower] Jun 16. Rowed to Joyce Mr Phillips then - under sun trapped this pot. upon flowers open at Sheffield. - [Sept 9th Pulled a bag of rowed up flowers & the plant with bees sitting out in trapped this pot the capsules of ripening. Of to open plant. Raises I am find - See Pepper Jamaica -

[May 30th rowed up Tobacco flowers - The Petals have at spring to side of wedding, but is rowed to two side. - Sept 9th Exactly same appearance as of pods on rowed & unrowed plants - a red autumn simple not, the daughter - The spring seeds appear except some - As wedding pretty long, it is not likely any insect? has marked in thought not. - Read Sept to bees autumn not unexpected - See Hildebrand daughter

Fumaria

62 1860

May 24 covered up Aspirge [illegible] — Pistil split at tip lies rather behind 4 anthers, but very near them; so that wind might easily impregnate the stigma; but the pollen coheres & does not seem easily to be blown away —

The anthers face in face toward the tube; a bee would push them back & then would rub against stigma. — [Saw B. muscorum sucking every flower of the Aspirge & driving head into mouth of corolla]

July 9th I have uncovered [illegible] — The 2 which I fertilised have not borne seed. & the other pods which I did not touch are well set; but I think much fewer pods than on uncovered plant, but these latter seem often to abort so hard to say positively — Certainly the others under net was so good as several uncovered — Some [illegible] plant under net set plenty of seed. —

May 25th Covered up under netting. Vicia hirsuta (which is the smallest flowered species [illegible]) & Vicia sativa. [illegible] — May 30th Mixed flowers —

June 8th The flowers of the 2 Vicias seem to have set quicker than others

From analogy Trifolium procumbens & Vicia [illegible]: is it visited?

June 21. I have watched repeatedly (& 2 nights for moths) & never saw any insect visit these flowers — June 27th saw fly with long proboscis sucking the Vicia

July 9th The pods on V. hirsuta (& the Trifolium) are now large & appear as numerous with as perfect seeds as in those uncovered. — I have carefully compared these. —

Aug. 4th If there is any difference the V. sativa & hirsuta bear more & finer pods than the free plants! Plenty of seed in little clover. —

Such flowers as Galium a great difficulty for me.

May 30th [illegible] flower of Corydalis, which was [illegible] 63

July 9th Corydalis 1860

Flower-stems	Lower flowers snapped off	Lower flowers not snapped off	upper flowers not snapped off	buds unopen
1	6	0	3	3
2	6	1	3	0
3	7	0	4	2
4	8	0	3	1
5	6	0	3	0
6	8	1	2	0
6	41	2	18	6

Total

So that of 43 lower flowers on 6 stems, only 2 not snapped off. — 18 upper flowers not set snapped off. —

[illegible] Bees [illegible] visited [illegible] Phillips [illegible] June 16. [illegible] upper flowers [illegible] plant, with [illegible] flowers I [illegible] [May 30th [illegible]] July 9th [illegible] uncovered [illegible] deception — As [illegible] Certainly [illegible] snapped off [illegible] visited [illegible] snapped off, [illegible] uncovered up, flowers [illegible] the [illegible] side. — [illegible] covered [illegible] visits? [illegible] deception

64

June 1 Scarlet Pelargonium. Cut off one side of petal with top of bract and opening of flower. In bud with stamens, healthy pollen. Open at 10 o'clock and cut off the rest to keep pollen out with edge of microscope. The bottom of stamens in bud shrivelled towards stipes; other bracts opposite number of bottom. Next day these flowers the stipes have grown a rough piece of stalk, (but not opposite number) projecting beyond edge of stamens. In one flower left open, stamens not closed & on at the point it has also seen visits of two of wasps, bees & my likely fours in pollen & to certain disposition of stipes number in Pelargonium. I was cleared & today in July open flowers, that I did not close stamens. —

June 3rd Pencil anther stamens round pollen with a spot that when cut off; to such a depth part of stipes and give sufficient chance of self-fertilisation perhaps exercise in it. —

June 6th 1 P.M. Cut the flower of Scarlet. just closed, with stamens with by stipes — Pollen shrivelled up but at 4 P.M. stamens perfectly closed. — The flower at 1 P.M. opened very first & not quite open: it was not open previously. —

June 7th Cut the flower just closed with stamens closed; I see little but the stamens open for 1/2; so I could close very close I put flower from pencil into water frame. I see in pelargonium bracts on stipes at the tip protrude. — In stamens & bracts (stipes) bend at right angle to, hanging to vertical flowers after 10 o'clock bring cut bracts extended no visit. — Cut Cordia in the vertical.

65

in water in pencil bracts; petals closed remaining shrivelled bracts.

Do these bracts & in this delay visits in cleaning in —

I. cut off stamens on three of pollen on bracts, & of pistil by hours. I felt it (flowers had been open about 2 days, but cut at 10) were ripe five & in 1½ & 2 hours after the bracts of stamens, i.e. when they were closed with pollen & the bracts had just begun to protrude. The position of part is really beautiful for Bee to get pollen on back with pollen & then to rub it on the stigma of other flowers. —

Insects B. Bees visiting them are fertilised by visits — agency. —

The Hooks on the stalk, petals of my little beyond or between one of bracts & tip of stamens. — I touched bracts of the stamens with wet point but & pollen stuck to it. —

How many the pollen 1½ fail to 10 stipes my collected with stamens to be afterwards pencilled off. — But not how many the two in Compositae, to bracts on stipes 1½ bent pollen out of stamens & retain it when the stipes ripe. — Bracts 2 & flowers; pollen bracts began to come out before bases of stipes protruded — pollen from pollen on anther. — Now. 2 really pretty to see how a grain of pollen!? on bright bracts of stipes ripening at first & then stuff to see them stopped with pollen.

June 11 Two flowers just opened for Sunday morning at 4 P.M. Sunday, three just began to protrude. — Yesterday 2? I saw stuck Honey Bee (Apis Ligustica?) just when to probe & put it back on one pollen; it was also feeding on pollen that & stamens always bracts of shrivelled bracts. — Then of bracts in the case (of wet in this) Flies may open stamens of Scarlet.

May 30/62/ Certainly no stigmatic surface on the Scarabs, extending to a wide area; but within about the base a pretty general surface, in the appearance of stigmatic, though not ideal. Jap. 62 – about wrong: the hairs seem certainly stigmatic: I looked at two grey of them. But the pollen-tube had pierced it thrice.

April 1863. I have put pollen on three separate stigmatic surfaces; got chips of it. In two pierced them; got no appearance of stigmatic tufts.

(1860)

June 6 Crossed ♀ Cauliflower with ♂ Yellow Brussels. All pairs.

Crossed ♀ Y. Cauliflower with ♂ Lobularia – pollen 3 flowers old: shrivelled up in cone in cotton: put two stems into bottle of water & set up transpiration in very many capsules – Of these 7 took up 3 to 4 pairs each – One of these had up 1 seed – a second 4. I have 3 pairs of Lobularia [illegible] Lobularia seed vitality & vigour, thanks to the Bees –

June 11. Saw this Bees sucking Stocks, they went to abundant nectar on side of stalk, stigma hairy evidently; the cotton seems separate from stigma & upright membranous sheath. – Kuhn says no nectar!

Crossed ♀ Brown Cabbage with ♂ Yellow many pairs 4 days old – two pods seem to have set on a single plant left free. Shall try in future – I think two by extremely easy. Related crosses experience? Have shrivelled the ♂ Cabbage bud set set well once; a stem crossed to prevent easy manipulation

I covered up Lathyrus nissolia & common Lotus. Aug 4th

I now see that the Lathyrus has abundance of fine pods & peas.—

I ~~could see none of Lotus covered~~ (~~Lotus bag much visited by Bees~~)

Aug 30 ~~Of the many plants of Lotus I could not find one [illegible]~~ [illegible] 2 [illegible]

~~[illegible]~~ — As L. nissolia & L. ~~pratensis~~ [pratensis] set abundance of seed, it hardly can been effect of cover. N.B. L. pratensis setting 10 lots & scarcely pod.—

Common Plantain had set plenty of seed. (see Back

Aug 29 1880. Sweet Peas either [illegible] great-gr. children of 3 1st cross — now vary a good deal.— Standard varies from pale to dark red of [illegible] — Keel in all nearly white; but wings vary from very nearly from white to a pale, [but not dark] purple; all intermediate tints in wings: not one plant has appeared like the dark pea ancestor. The standards of a few slightly blotched with white

Under the sea at Ramsella

Batty's dandelion

Sept 5.6 Visited I outside of sea-side of Hamble & Hythe shore. Found here little spikes like Euphorbia — Picked popular examples of one young flower, before pollen shed; but here shed pollen at this period only later. — The crowd of plants produced a good many seeds; but many shrivelled & not so many as I expected plants.—

1860 Nov. 20. I sowed up three ounces 3 ounces of Leek seeds. Besides these in one other opened produced very few seeds; but I noticed that out of one of the 3 ounces bottles produced very little of flower stalks; others many of them imported & Wick-Bulbs, produced vast number of bulbils. — How is this a Case for selection to employ for these productions? Selection of others of fatter beyond

I observed [illegible] with pollen

Dec. 11th One pot of Pentstemon with 61 gr of Dry earth adhering to it — Put in sand earth: Dry Earth up

Nov. 24. 1861. A Pheasant's foot from Scotland sent by Mr Lamont with clay earth, planted it.

Leek (71)

1861 Jan 6

I had 18 plants of common Glen. seedlings planted out: of them 7 had male developed earliest 11 – had none. Expected

In Dry point no external difference in size, or in general, at the time when pollen was shedding & pollen-tubes were penetrating stigma. – The petals is, however, very patchy developed in each of the flowers when the pollen is shedding – Under Lens powers the lifters of depleted aspects of stigma were long & transparent in female flowers in hide flowers – There was plenty of pollen on stigma of female flowers. – Change of condition of stem is considerable variability in stigma) in crossed plant stamens & other half of plants affected a male side of half a female

7. Hemyhelia ♂ seed weighed 36.5 gr. 100 : 7900 52.1

11 Female ♀ seed weighed 98.7 gr. 100 : 89.7

Aug 15 1863 – Seedlings from female & Hermaph. Garden Thyme both produced plants of both forms. –

Wild Thyme from Torquay

Female plant with 180 flower heads, seed weighed 8.7 i.e. 200 : 10.8

Hermaph. ♀ with 200 flower heads seed weighed 4.9 200 : 4.9

The female plant set quite as much seed as Hermaphrodite, perhaps rather larger heads of flowers

Seedlings from female wild Thyme, Torquay produced female & hermaphrodite plants. – June 1863

1861. Fifty Pods of large Sage-Green Capsule: just ripened & insect. produced. These were counted but pods (but I had not counted pods) – seed weighed 23.1 gr.

50 Pods of Red Sage-green under net-(many had pods) weighed 9.8 gr.

50 Pods of White Sage. under net, with pink mouth, but very few had pods, the 50 weighed 20 gr. So that the ver. is with less support of capsule (Red is weighable) & to & the efficient could be tested. Possibly great weight of seed in this capsule may be owing to greater number of good pods & each contained less seed. – It was clear that flowers ripened much longer & that we cut them pods ready to ripen under the net. –

1861 Two Plots of French(?) Poppy with simple leaves – Garden flowers – covered & uncovered.

30 Pods of the covered plant produced 15.6 gr. of seed

30 Pods of Covered Plant produced 16.5 gr. of seed

So that actually covered plant must fertile: I tried Poppy because does not secrete nectar.

April 21. 1862. Some corchips, originally wild plants, had been planted in my shrubbery; in 1859 they had been transplanted into K. garden & were removed; these in flower were partly potted & set in various flowerpots artificially pollinated (these not pollinated were stamens); the seedlings from these seeds, have not yet flowered; transplanted & were raised in hot-bed & then transplanted into sandy K. garden; some in shade on 1871 May & some in Park Bed, & there is not much difference of manufacture; in the 765 plants there raised & treated. The corchips in Park of opposite disposition & many clay-bed plants, yet not a basic difference in structure.—

I, also, raised a few plants in pots from seeds & kept under unnatural treatment, but the remained true..

Ap. 27. 62. I have just compared the orchis in corner of big-wood, where I got the seeds last year now coming up in the K. garden, with the Barnfield Orchis. & find them to be exactly opposite specimens. (The 764 have yellow marks at mouth of corolla, large flowers & thicker footstalks & 16/19 of last stem dilate) Then was a group of 546 plants, big & short-15 cm; have seedlings from the neighbouring plant - Both corchis & Fuchsia grow naturally in their spot & wood. Why is there difference of colour & flowers & stems? I have dried in Herbarium - Mrs. Gordon 1 sp. orchis on 1 stalk. Three orchis of mine are dried in 1862 Four of them with seedling orchis have flowered & all alike & like the Fuchsia. Except the stem is orange instead of yellow. — April 10 All 8 plants have flowered

April 27th 1862. Cowslips, wild, potted.

5 flowers, blue silk Braid: long-styled, crossed Homomorphically with pollen of long-styled cowslip & after 24° crossed Heteromorphically with pollen of short-styled. Together; yellow centre & dark red circumference.

6 flowers with white bobbin, viz 3 on short-styled & 3 on long-styled: crossed heteromorphically with pollen of Primrose ~~on two successive mornings~~.

6 flowers with thick red thread, viz 3 on short-styled & 3 on long-styled, crossed Homomorphically with pollen of Primrose ~~on two successive mornings~~. N.B. These 12 flowers crossed in order to raise Oxlips, & to see whether any difference in fertility of Heteromorphic & Homomorphic unions in two distinct species. —

& are all alike except [illegible] & very like Oxlips ~~Cowslips~~ Primroses, except rather in [illegible] of corolla darker yellow & peduncles rather large. — One plant however has not, differently to common flowers, thrown up 2 naked scapes, 1/2 inch high, & bearing flowers exactly like the other on summit like Oxlips — This shows might in some cases [illegible] of two sort of flowers on same Plant. — ~~[illegible]~~ Partly crossed with primroses & we then see how Oxlips disappear. — But on digging up the plant, I find in centre of each group of long peduncles of the Ox

May 1st Same lot of Cowslips.

10 ~~long-styled~~ short-styled (stick) heteromorphically with pollen of long-styled. white thread
10 do. do. homomorphically — of short-styled. Red thread
10 ~~short~~ long-styled no stick heteromorphically with pollen of short-styled. white thread
10 do do homomorphically — of long-styled. Red thread
The result is given I believe, in my Port-folio

Feb. 19th 63 fertilised 5 flowers on a lot of Sandemann's primrose & put in Hot-House — all failed

primroses; a short peduncle; & the peduncles of primroses spring at various heights all round it; but some off from summit. I now find that the other plants have a minute scape in centre; but is hidden in leaves; so that all plants beautifully intermediate between Oxlips & Primroses. & do not really have two forms — Only difference that in the one plant, the scape has been early & largely developed. The difference in tint of colour between these & Primroses hardly perceptible. The rudimentary scape alone shows parentage. Primroses differ in tint. The seed Primroses no vestige of the central scape.

Cuthens Road.-

Aug. 10 - 1864. - Rain almost day with much mud after wonderfully dry summer - Cuthens Road - in patches a sad pelle - visited J Walter - Lewis - Cattle & sheep may have been driven into fields for Autumn pasturage - Day Chalkhill Platform to date pods near - Lang - made -

Sparganium simplex
Potamogeton natans ?
Veronica scutellata
Ranunculus flammula
Alisma plantago
Lemna
Rumex
Glyceria fluitans
Carex spp.

Newt
Cyclas Lymnea
Water Chaytone & Hemiptera (unripe)

1866 June 7th Yr Long Carnation Plant raised from plant pod. by me in Orchard pollen of that carpel & pollen from Orchard plant, other plants differ in vigour, size & luxuriance - always has been so from first. Have an observation made on Mother Plant & Seedlings pasture in garden - Mother Plant pasture during winter. - So the case with plants - Aug. 15th Stem flowers in the carnation & some on new grig to flower -

Sept 1866 C.C. seed from Aug. 1865 under 64 - Bg. pod & pollen of one a low flower. The parent marked C. was pod in greenhouse & were the Aug. 1865 & children of Aug. 1865 Hom. fertilized - So the plants seem to be mended pedigree C.C. & which with plants in 1867 will be 2 & 2nd Mother generation of pod Hom. Chinas, the interbreeds union having been illegitimate & Homomorphic

80/ Nov. 66 I have received Euonymus, but not good case; pericarp externally pink; the seeds covered with thin orange coat. & these seeds are especially sought for by Birds —

Hooker says Magnolia seeds are bright? & pendulous by thread.

Fritz Müller wrote 2d Oct 1. 1866

These seeds are splendid crimson & as hard as ivory — I soaked for 10 hours in warmish water, & water became only slightly mucilaginous. Wd. gastric juice extract more? I do not suppose there can be any external pulp — All looks contrived to kill seeds for good of Birds. — [I gave 2 of these seeds in dough to a cock, but they were apparently ground up for after 60 h. could not be found in excrement.] [Some other seeds, of a twining Legum. sent by F. Müller which being ... to spread pods are red with black eye & Hooker says are like those of Abrus precatorius, a Legum. Tropics, or ... (which I think I have seen)] Hooker says in Indian Adenanthera pavonina, Mimosa. Could these crimson seeds be distributed on same principle as acorns?

Pomegranate notes in P. Englische or Loudon Encyclo

(81)

Beauty of seeds or of inside of pods for dispersation: F. Müller. Aug. 1866

See Passiflora for coloration & Dispn. ... & ... with coloured ... the seeds. —

Passiflora quadrilis pods become red, & opens with seed attached, which are covered by film of soft matter, I think yellow, which I fancied might be edible — The peony with inside of pods crimson & seeds dark purple; the latter covered with thin layer. possibly but not probably edible. But how ab. Portugal Laurel says Thomas Cook & Pickett.

Some objects beautiful for coloration — some gall on oak & scarlet Fungus. — Lucy W. says at Leith Hill nothing touches or eats the Peony seeds.

Observe good care is added to pods with winged seeds always dehiscing. —

F. Müller sends me seeds of Elaterium (Cucurb.) "seeds covered with red pulp adhering to the valves & very conspicuous."

Sept 26/67. Rosslyn green pod, &c. the mature becomes
with plum-colour. spots & irregular burst pod, containing
bright crimson seed, enveloped in little acid & sweet
pulp. —

Dec. 11 67 I have seen, I think in Gelli's Arcadia, that my Bird-cage
& Barley-seed — that mixture has arisen from two seeds not being eaten
with Wheat & first fruits a tree about I have watched in two
almost demolished & benefit it I f. Birds during, almost under
my eye of the daily. —

Dec. 2d. 1886 Mr Herbert Norman of Oakley near Bromley sent me a cup of
Woodcock with tarsus covered with mud, which when dry weighed
8.9 grains. Planted on burnt sand. Dec. 3d. Dec. 8th a monocotyledonous
plant appeared & soon afterwards two gramineæ!!! The plants have
not Juncus bufonius or toad rush — grows "among in marshy
ground. especially on watery sandy Heaths" Sir J. Smith. —

Aug. 1867. Mr J. P Mansell Weale sent me from
Natal a small packed weighing under ½ an oz
of the dung of locusts. It is believed that they disseminate
seeds. On Aug. 27 the dung was put on burnt sand
& Sept. 6. two grass seeds have germinated. These
were imbedded within the pellets, which seem to
consist chiefly of the husks of grapes. In one little
pellet were 3 seeds, & partly crushed & 2 peach.
These latter quite different kinds Sept 7th a third grass germinated.
In 3 other pellets of dung no perfect seeds — Sept 9th a fourth minute
grass germinated, which I extracted from pellet & placed in sand. —
Sept. 24 Two more grasses. — Oct 17th one more grass (altogether 7)
May 20 1868. One kind of grass, of which six plants came up in second
Hordeum, Eragrostis capillifolia, Reed & Sporobolus elongatus, &
two common tropical & sub-tropical grass. —
(Mr Weale Sept 26 &c. grass which it was thought was then exposed in
the Lappa aliena Spr.)

Nov. 1867. I put a Gordon foot on good & lots of dog & night soil by many thanks believe if it kept 3 years & 2 th. of chips around it. The Gordon foot is pulled in Jan & another in Feb & dog, & Indian & chips are dragged off in about 5 hours.

When grown a Gordon Setter foot closes. By the Spring night soil & chips & chips are very strong