

Cactus and Bindweed

- 19/10/62 Placed seeds between folds of wet blotting paper into ice cube dish of fridge. Let freeze solid with weight on top.
- 26/10/62 Removed from fridge and let thaw out
- 27/10/62 Planted about half of seeds in four appropriately marked pots. Other half of seeds placed in Petri dishes.

Left to right (counter clockwise) cactus and small bindweed in same Petri dish (oblong triangular seeds)

Right to left (clockwise) cactus and large bindweed in same Petri dish (flat round seeds)

Four pots and two Petri dishes placed on table in metal roof glass house. Moved into west greenhouse on 28/10/62

(over)

2/11/62 Some of the clockwise cactus seed is beginning to sprout in the Petri dish. There are type of seed which wouldn't sprout last year.

7/11/62 I ignored these things until today. The Petri dishes had become stiffs, all the water had come out of blotting paper in bottom, which was quite dry; and formed into drops on underside of lid of dish. The shoots on these sprouted cactus seed had withered and dried up. No new sprouts. The four pots had dried to a hard crust on top but were damp a half inch down. I broke up the crust of hard earth in pots; pulverised it and added water to a mush. Then I placed all the seeds from Petri dishes in appropriate pots; pressed seeds into soil and watered again. Finally I took pots from direct sunlight in glass house where they dry out too fast and placed them in metal roof glass house out of direct sunlight. This appears to be another fiasco due to lack of care. It seems the seed got overheated at the germination stage. This probably killed the seed.

22/11/62 Planted remainder of large & small birdweed secured from Green Bank in 1959. Also planted in a separate pot about 100 seeds from small birdweed grown in hot house at Stowell during summer 1961-2. Pots left in glass house with metal roof.

27/11/62 Planted remainder of Cactus seeds in respective pots.

10/12/62 Half dozen shoots of Cactus coming up in pot Left to Right.

16/12/62 Cactus shoots an inch high. Keep them all moist.

20/12/62 Drilled holes in base of all pots for air, in both pots. ^{Some cactus}

Cactus & Bindweed,

20/12/62 Moved pots outside glass house to where they can get morning sun only. Tied a few of the taller (2") shoots to steel wires inserted in earth. No shoots have dried at tip but two wilted in sunlight, apparently they must be kept moist and only allowed small periods of direct sunlight. The soil in pots tends to have a hard crust if let dry on top. It would have been better to add fine sand to soil.

No bindweed have sprouted


apparently the top of soil must remain moist with about $\frac{1}{20}$ " water added each day. When plants have become longer the roots will go deeper and continual moisture may not be as important.

23/12/62 Planted about 100 seeds of bindweed from Glenorchy in a pot.

26/12/62 Couple of cactus now 4" high. Set pots out side house where they can get morning sun but not afternoon sun. The wilted shoots of 20/12/62 turned out to be grass with root rot.

28/12/62 Keeping surface of ground moist by very small amount of water each day. There are now six shoots in pot right to left and twelve shoots in pot left to right. This is about proportional to number of seeds planted. (over)

Cactus & Bindweed

- 28/12/62. Thus the two types of seed have about equal fertility. The shoots range from just appearing to about 4" high. The larger ones are showing a brown tinge at base. This is probably normal and does not indicate any type of rot.
- 30/12/62 Pots were allowed to dry to a slight crust on top. This caused a couple of shoots to wilt. Applied water twice to soak well. Apparently shoots are very tender and lack a substantial root system. I should cover top of soil with fine white pebbles like Adams does for his clover. This will reduce surface evaporation.
- 31/12/62 Accident with largest 4" high shoot of left to right cactus. It was pulled out & bent by unknown persons, perhaps children, during my absence. I replanted, straightened and tied it to a support at two points. The brown on base of shoot is an inch long. A small grey bulb about $\frac{3}{32}$ " dia. appears at side of shoot and root extends from this downward.
- 
Brown shoot bulb Root
- Root, bulb + part of shoot put into an inch deep hole & tamped.
- 1/1/63 The top inch of shoot above pink has dried up. Lower part seems still OK. Two other shoots have dried at tip, one badly. Apparently these plants cannot stand direct sunlight at this early stage. Put both pots back into shade of greenhouse with metal roof.

4/1/63 The shoots with brown markings at bottom continue to grow. This brown area moves up as a band. Below it is a new bright green region which extends down into soil. Only a quarter of shoots display the brown band. It may have been caused by the few days overheating before putting pots back in shade. All shoots are now green at ground level. The damaged shoot still appears good below the kink. The two scorched shoots continue to wither and dry back. Perhaps I can stop this by kinking the green end of these.

6/1/63 The brown markings near base of shoots is disappearing. Probably was caused by drying and overheating in past. Presently there are: Right to Left pot, 5 healthy shoots; Left to right pot, 7 healthy shoots, 2 shoots with scorched tips, 1 shoot with broken tip. Moved pots outside as sky is overcast. Temp 75°. Apparently the shoots will be OK outside if kept from bright direct sunlight on very hot days. Took support from shoot with broken tip as it seems able to stand up satisfactorily now.

11/1/63 The tallest shoot in right to left pot has a broken tip. The longest of two shoots with scorched tips is completely withered. Perhaps one other left to right shoot has been overheated. These plants are very delicate. Should be put outside at some place on south of a building out of direct sunlight.

13/1/63 The shoot with scorched tip in left to right pot is about finished. The two shoots with broken tips are drying at end but seem to still grow at base. One other shoot which was overwatered a few days ago now has a brown band at base. The tip seems a bit yellow but it may recover. The shoots seem to be broken at tip by whipping in the wind. These plants are very delicate and must be kept out of direct sunlight and out of wind.

21/1/63 Good shoots continue to grow but shoots with scorched tips or broken tips gradually dry and die. Now have four good shoots in each pot plus one broken in right to left pot and two scorched in left to right pot.

24/1/63 Right to left pot has 3 good shoots $3''$, $3\frac{1}{4}''$, $4''$ high. One scorched tip $3\frac{3}{4}''$ high. One broken shoot $2''$ high. Left to right pot has 3 good shoots $3\frac{1}{4}''$, $3\frac{1}{4}''$, $6\frac{3}{4}''$ high. One scorched tip $6\frac{1}{4}''$ high. Three broken shoots $2\frac{1}{2}''$, $3\frac{1}{4}''$, $4''$ high. Also one new shoot $\frac{1}{2}''$ high, (maybe grass).

Dug out of left to right pot the remains of tall shoot which was scorched. Found bulb about $\frac{1}{8}''$ long + $\frac{3}{32}''$ dia at base with a root. Dried and put bulb, root + shoot in an envelope. Also dug up back right corner of pot and searched out + saved all seeds. Also found four iteys which look like remains of bulbs. Put these in envelope. Filled corner of pot with sand for identification.

28/1/63 Right to left cactus now three healthy shoots
 $3\frac{1}{4}$, $3\frac{1}{4}$, $4\frac{1}{2}$ " long, One shoot with withered tip $3\frac{1}{2}$ " long,
Shoot with broken tip now dried down to $1\frac{1}{2}$ " level.

Left to right cactus reduced to three healthy shoots $3\frac{1}{4}$, $3\frac{1}{4}$, 7 "
long, One shoot with withered tip 6 " long, Three shoots with
broken tips down to 2 ", $2\frac{1}{4}$ ", 4 " long. When the shoots
wither down to earth, they should be dug out and bulb, if any
saved.

5/2/63 Left to right cactus: 2 good shoots $3\frac{1}{4}$ & $7\frac{1}{4}$ long.
2 shoots with scorched tips $2\frac{1}{4}$ & $5\frac{3}{4}$ long. 2 shoots with
broken tips 1" & 4" long. New shoot (grass?) $3\frac{1}{4}$ long.
Pot still quite moist.

Right to left cactus: 1 new shoot $\frac{3}{8}$ " long near corner of pot,
3 good shoots $3\frac{1}{4}$, $3\frac{1}{4}$, 5" long, 2 broken shoots (1 mostly withered
& 1 very withered). Pot still moist.

Perhaps these plants have completed one years growth and
will be dormant until next year.

10/2/63 Right to left cactus: 2 good shoots $3\frac{1}{4}$ & 5" long. One
shoot withered at base & fallen down. Two much withered shoots.
New shoot now $1\frac{1}{2}$ " high but just grass.

Left to right cactus: 2 good shoots $3\frac{1}{4}$ & $7\frac{1}{4}$ " high. Shoot with
broken tip 4" high. 2 shoots with withered tips $2\frac{1}{4}$ & $5\frac{3}{4}$ " high. Two
fully withered shoots.

4/3/63 Pots neglected but still damp at $\frac{1}{2}$ " to $\frac{3}{4}$ " below surface.
Even so most shoots dried & collapsed.

Right to left cactus: One shoot $4\frac{1}{4}$ " high with scorched tip.
One grass 3" high.

Left to right cactus: Two shoots $6\frac{1}{2}$ " & $1\frac{1}{2}$ " high. Both
with scorched tip.

18/3/63 Right to left cactus: all dried & withered.

Left to right cactus: One shoot 5" high with scorched tip.

31/3/63 This plant has withered down to 2" high now. The pot
has been kept damp most of time.

15/4/63 all shoots dried out completely. Ceased to
water pots, let everything dry fully.