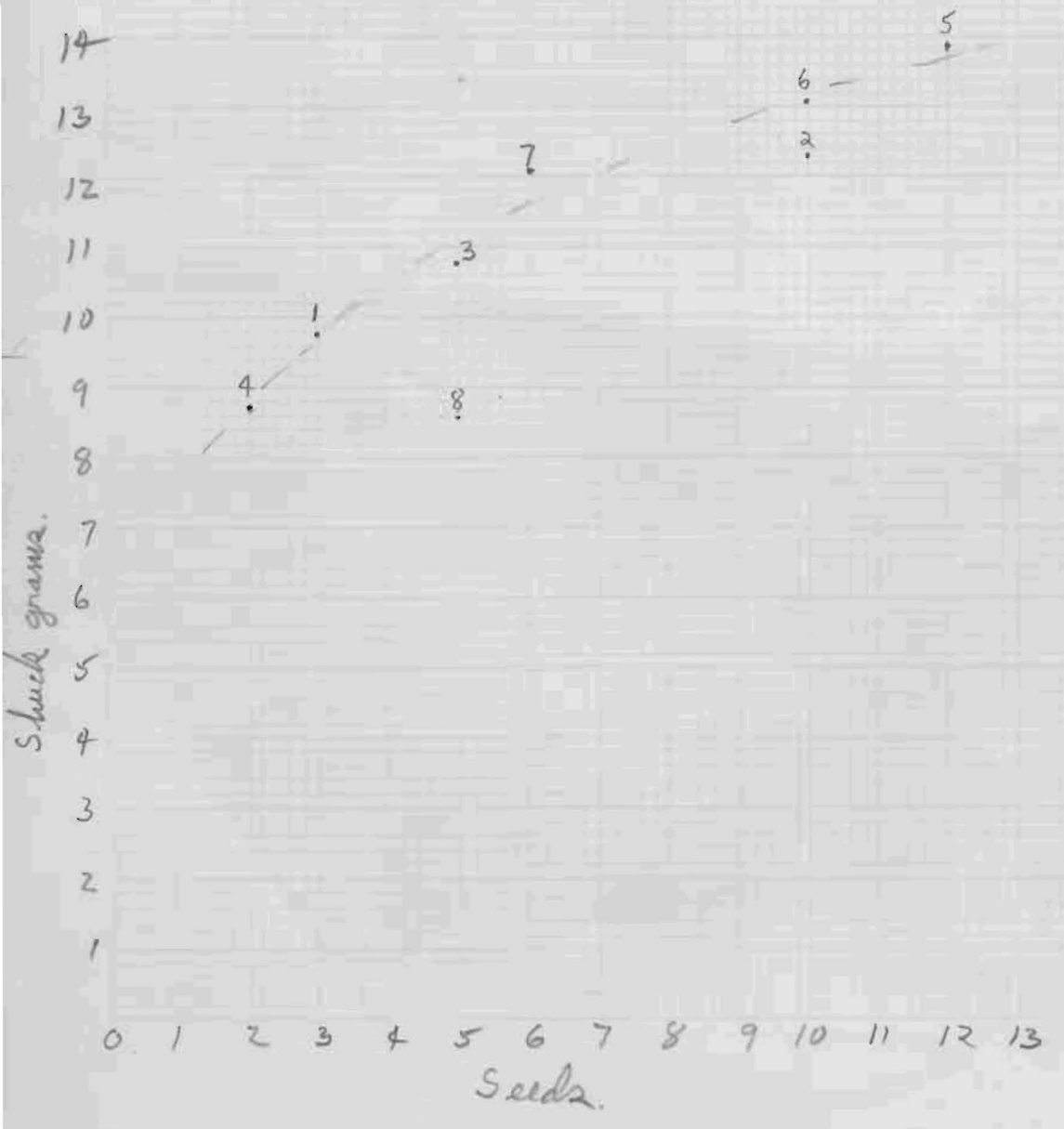


Bowiea Volubilis
 First stalk,
 Eight Pods
 53 Seeds

21/1/63

Numbers indicate position of pod starting at top. Quite Random.



Bowicia Volubilis

21/1/63

Weights in milligrams.

Pod.	Seeds		mg each	shuck		Pod	
	Number	wt		measured	computed	measured	measured
Top.	3	14.4	4.80	9.1+	9.8	1.47	24.2
2nd	10	40.1	4.01	10.6+	12.3	3.26	52.4
3rd	5	20.0	4.00	10.0+	10.8	1.85	30.8
4th	some lost seeds? 2	8.6	4.30	7.9+	8.7	.99	17.3
5th	12	48.5	4.04	13.2+	13.9	3.49	62.4
6th	10	35.6	3.56	12.0+	13.1	2.72	48.7
7th	lost one seed? 6	20.0	3.33	10.6+	12.1	1.65	32.1
Bottom	5	17.3	3.46	7.1+	8.6	2.02	25.9
Totals	53	209.5	31.50	80.5	89.3	17.6	293.8
Averages	6.62	125.6	3.94	10.1	11.2	2.20	36.7

Computed weights of shuck are best because the shuck was broken and some small parts lost when removing seeds.

Bowiea Volubilis

24/1/63 Single bulb received from Melbourne.
Put in pot with sandy soil by Don Martin.
Has stalk about 2" high with small side
branches (2) about one inch long. End of main stalk
is scorched.

25/1/63 Gave pot + plant to Mr. Walker who has greenhouses
at 92 Tolosa Rd. He put it on bench with other
potted plants in northeast corner of greenhouse
on right side of road going north. His man will
water it along with other plants and keep them moist.

14/2/63 The main stalk has broken off to about 1" high and
two side branches also broken off. The latter are still
lying in pot and look as if fell off a few days ago.
Beside and very close to stump of old main stalk is
a new slender very green shoot arising. Mr.
Walker keeps plant moist.

4/3/63 Main stalk is now 3" high. It grew up from bottom.
Old broken tip still present. The slender shoot at side has now
developed into the peculiar sprigs which were present on the
original plant. Whole plant looks very green and healthy.

19/3/63 The main shoot now $4\frac{1}{2}$ " high. Tip has withered a bit.
Slugs have eaten the sprigs and damaged surface on lower
inside of main shoot. Took the plant to my flat and
put in center of front window on floor.

- 19/4/63 Shoot now $7\frac{1}{2}$ " high. Took bulb + pot to Stowell for a few days while I'm at Flinders Island. Shoot beginning to wither + dry at tip a bit, but the bottom part is green + healthy.
- 23/4/63 Small new shoot about $\frac{1}{4}$ " long has formed in concave part of main shoot, New shoot cylindrical. Took pot + bulb back to my flat.
- 26/4/63 New shoot about $\frac{1}{2}$ " long now.
- 5/5/63 New shoot $1\frac{3}{8}$ " long. Old shoot 8" high.
- 12/5/63 " " 2" " " " $7\frac{7}{8}$ " "
- 19/5/63 " " $2\frac{3}{8}$ " " " " $7\frac{7}{8}$ " ". The old shoot is growing slowly at base and withering at top. Both rates are same.
- 26/5/63 Old shoot $7\frac{7}{8}$ " high. New shoot 3" high. Added a $\frac{1}{4}$ " dia dowel rod 31" high in center of pot. Tied new shoot in front of rod at 1" above base. Shoot crosses rod in a would be clockwise direction. The rod is placed as close as possible to bulb. Obviously the bulb has grown considerably since planting.
- 2/6/63 Old shoot still $7\frac{7}{8}$ " high. New shoot $3\frac{1}{4}$ " high. It showed no tendency to twine around dowel rod. I changed it to other side of rod. Now shoot crosses rod in a would be counterclockwise direction.
- 8/6/63 Old shoot (leaf) $7\frac{7}{8}$ " high but turning yellow at end. New shoot $3\frac{5}{8}$ " high. Still no tendency to twine around rod. I supplied it with a nice soft white piece of string to climb on now.

Bowiea Volubilis

- 16/6/63 Old shoot or leaf still $7\frac{7}{8}$ " high and drying at tip.
New shoot $3\frac{3}{4}$ " high. No visible tendency to twine.
Weather has been cool with little sunlight during past week.
- 23/6/63 Old leaf now $7\frac{5}{8}$ ". New shoot 4". No twining. Perhaps
the cool period and slow growth inhibit tendency to twine.
- 24/6/63 Outside temperature last night 30°F . The old leaf had
wilted badly and lay over side of pot limp. Second leaf
bent over slightly. A third leaf about $\frac{1}{4}$ " long is forming
between 1st & 2nd leaves. Obviously the flat is much too
exposed and cold at night during winter. Took the pot
to my room at Stovell where it remains fairly warm.
Both 1st & 2nd leaves recovered and stood up straight
by afternoon. Don Martin thinks that the flower
stalk will not appear until after the plant has
developed a large cluster of leaves. Removed wooden
stake from pot.
- 4/7/63 Set plant out in heated green house. 3rd leaf $\frac{1}{2}$ " long.
- 11/7/63 A fourth shoot is forming near 3rd. It seems
thicker than the 3rd.
- 16/7/63 Fourth shoot seems to have two very fine thread like
whiskers coming out of sides.
- 22/7/63 1st leaf wilted down to $7\frac{1}{4}$ " long
2nd " grown up to $4\frac{1}{4}$ " "
3rd shoot dried up.
4th shoot $1\frac{1}{2}$ " long. A very tight counter clockwise
spiral of two turns. Gave it string to twine upon.
Added 50 cc of Ammonium Nitrate solution.

Bowiea Volubilis

- 2/8/63 1st leaf $7\frac{3}{8}$ " long, 2nd leaf $7\frac{3}{8}$ " long. Flower stalk makes 3 turns right, $\frac{1}{4}$ turn left, 2 turns right, $3\frac{5}{8}$ " high. Looks healthy.
- 6/8/63 $3\frac{1}{2}$ turns above inflexion point.
- 19/8/63 $7\frac{1}{2}$ " " " " " First leaf is getting more limber and wilted, lying over side of pot horizontal but still green.
- 30/8/63 $9\frac{1}{2}$ turns above inflexion point
- 5/9/63 $10\frac{1}{2}$ " " " " " First leaf is withering fast. Dry down to 6" and yellow down to $4\frac{1}{2}$ ". Second leaf yellow to an inch below tip. Flower stalk healthy.
- 19/9/63 $13\frac{1}{2}$ turns above inflexion point. First leaf dry down to 3" and yellow down to $\frac{1}{2}$ ". Second leaf & flower stalk as on 5/9/63
- 23/9/63 a flower bud has appeared at tip of a leaf about $\frac{3}{4}$ inch below end of runner. First leaf completely dry down to base and ready to fall off. Second leaf yellow down to $1\frac{1}{2}$ " from base.
- 24/9/63 Took two photos from opposite sides.
- 1/10/63 Vine has $18\frac{1}{2}$ turns above inflexion point. Total $15\frac{1}{2}$ " high. 8 flower buds. Second leaf dried to $2\frac{1}{2}$ " long but green below that. The bottom & center parts of vine have produced a large number of double pointed leaves which look like pitch forks. The top part of vine has none of these. The flower buds are at ends of single stems without points.

Bougainvillea Volubilis

- 10/10/63 12½ turns from inflexion point to stem with first flower bud. Stem 10¼" above ground. Tip of runner 9½ turns and 8¼" above this stem. There are still only 8 well defined flower buds.
- 14/10/63 The next to bottom bud has opened into a six petiole flower, green inside and out.
- 18/10/63 Now three flowers are open. Tip of runner 12 turns and 10" above stem of first flower bud.
- 20/10/63 Now five flowers plus six buds. Runner is getting very small and thin. Second leaf beginning to wither again. Probably the plant is approaching full growth.
- 22/10/63 Now six flowers. 12½ turns above first bud (now flower)
- 25/10/63 Now eight flowers + 3 buds. Vine runner has quit growing. Highest bud is straight up.
- 28/10/63 Apparently during the past week a new shoot came up from bulb right next to old stem. This new shoot I unwound from tangle and started it climbing up dowel rod. It is long enough to make 1½ open turns with tip about 4" above ground. Still 8 flowers and 3 buds on first stalk.
- 31/10/63 Now 9 flowers + 2 buds.
- 4/11/63 Now 10 flowers + 1 bud at very top. Second stalk 3 turns.
- 11/11/63 The 11th flower at very top opened last night. Several of the older flowers now have large seed capsules.
- 12/11/63 Took photo.
- 22/11/63 Two photos. Second stalk 7 turns 11½" high. Has stopped sending out forked leaves. Two small buds at top. The second primitive leaf is now yellow down to base but still erect. Material in it seems to be going into second stalk. Seed capsules on first stalk now swelling up.

Bowiea Volubilis

- 1/12/63 Second primitive leaf completely withered + dried, a third flower stalk about $1\frac{1}{2}$ times diameter of first two has appeared and is now $2\frac{1}{2}$ " high.
- 9/12/63 Third stalk doing well. Took photo.
- 24/12/63 First stalk a maximum of $21\frac{1}{4}$ " high. Beginning to turn yellow. Eight successful seed pods. Three withered pods. This stalk has gone past maturity and is getting old. Second stalk $25\frac{3}{4}$ " high and still growing. Now has six open flowers and ten buds. More buds will appear. Third stalk $21\frac{1}{4}$ " high and growing fast. It has a more open spiral. Only leaves so far, no buds.
- 29/12/63 First stalk leaves all yellow. Only stalk + pods green. Second stalk 9 flowers + 8 buds. Third stalk still no buds. added 50cc of ammonium nitrate solution.
- 29/12/63 First stalk has one seed pod cracked open at top. There appears to be three black seeds inside, each in a separate partition. The second stalk is about full size. Third stalk still growing.
- 1/1/64 First stalk has two seed pods open at top. The third stalk has reached top of stick. Carefully unwound it. Put in new stick 2 ft longer and carefully rewound stalk on new stick. The third stalk beginning to make flower buds.
- 7/1/64 First stalk now has four dry pods cracked open plus four pods drying out. stalk completely dry.
- 14/1/64 Seven of eight pods are now fully dried. 5 ft
- 20/1/64 Two flowers open on third stalk. It now reaches top of tall pole.
- 21/1/64 Harvested first stalk after taking several pictures. Weighed and analysed the eight pods. Probably no seeds lost.
- 14/2/64 Second stalk beginning to turn yellow. Third stalk now 7 ft high. Over 50 buds + 50 open flowers. Few fruit also.

16/6/64

CSIRO GRATICULE A2Q

2nd Stalk *Bowiea volubilis*

Height in inches.

Pitch Δ

2.0 10

1.5 5

1.0 5

0.5

25

20

15

0

5

10

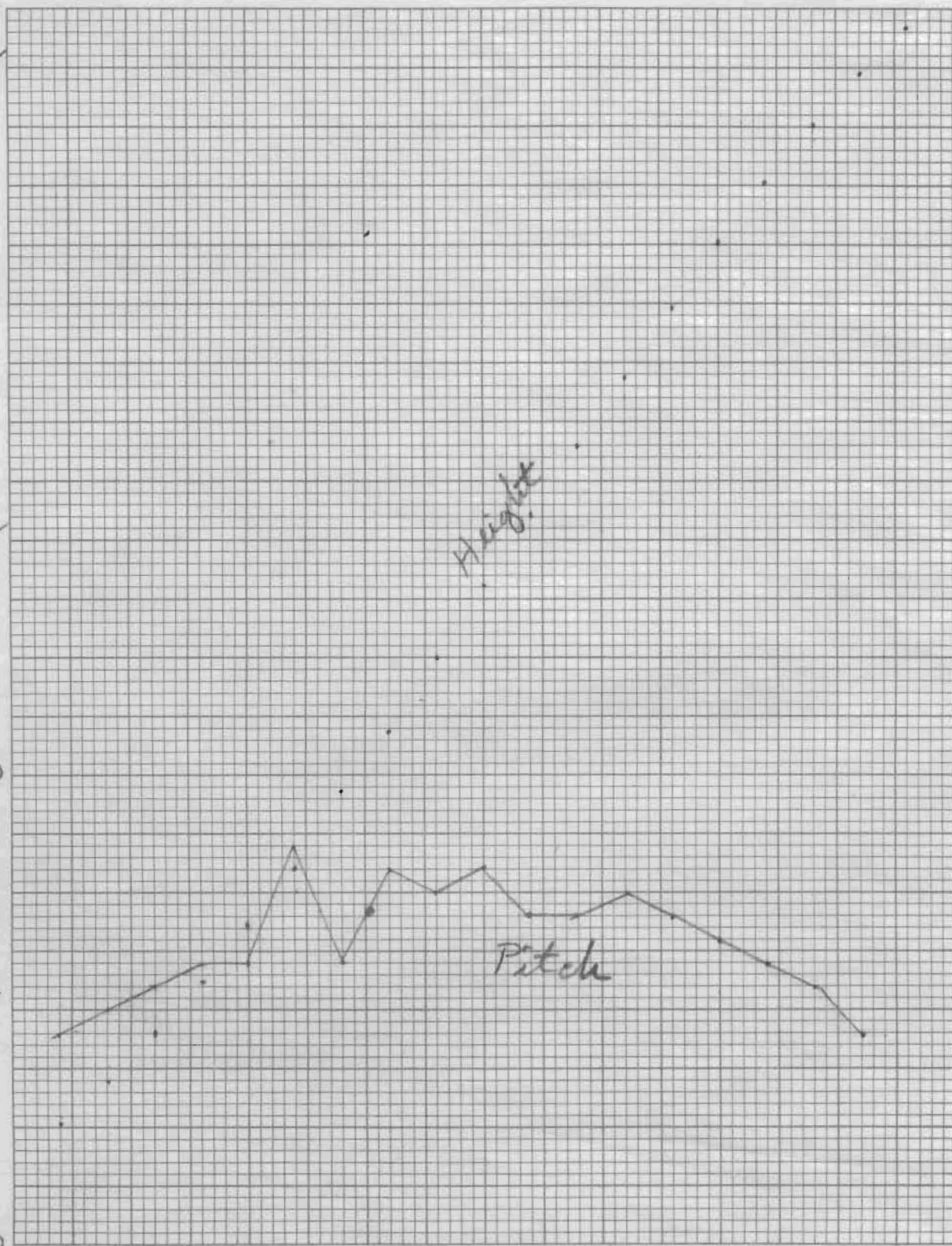
15

20

Turns

Height

Pitch



Bowiea volubilis, second stalk.

Pods numbered from top to bottom of stalk

Date	Pod		Seeds		mg seed	Mg of Shuck		mg seeds mg shuck
	Order	mg	Number	mg		measured	computed	
31/3/64	1	45.3	12	33.4	2.8	12.4	11.9	2.81
22/3/64	2	35.9	8	25.6	3.2	10.2	10.3	2.49
18/3/64	3	19.2	3	10.8	3.9	7.8	8.4	1.29
	4	48.5	9	35.9	4.0	11.6	12.6	2.85
	5	58.8	13	46.0	3.5	13.4	12.8	3.60
13/3/64	6	90.0	11	74.2	6.7	14.3	15.8	4.70
	7	55.6	8	42.0	5.3	11.9	13.6	3.09
12/3/64	8	70.6	11	56.1	5.1	15.1	14.5	3.87
	9	25.2	3	14.1	4.7	11.3	11.1	1.27
	10	29.1	4	18.9	4.7	10.3	10.2	1.86
	11	53.2	9	38.8	4.3	14.3	14.4	2.70
	12	52.2	9	37.4	4.2	15.2	14.8	2.53
	13	22.3	3	11.9	4.0	10.5	10.4	1.15
9/3/64	14	12.7	2	7.8	3.9	4.9	4.9	1.59

14 had only two instead of three compartments

9 had one compartment empty. Perhaps 1 or 2 seeds lost.

Totals	618.6	105	452.9	60.3	163.2	165.7	35.9
Average	44.2	7.50	32.4	4.31	11.7	11.8	2.56

1st & 2nd Stalks combined.

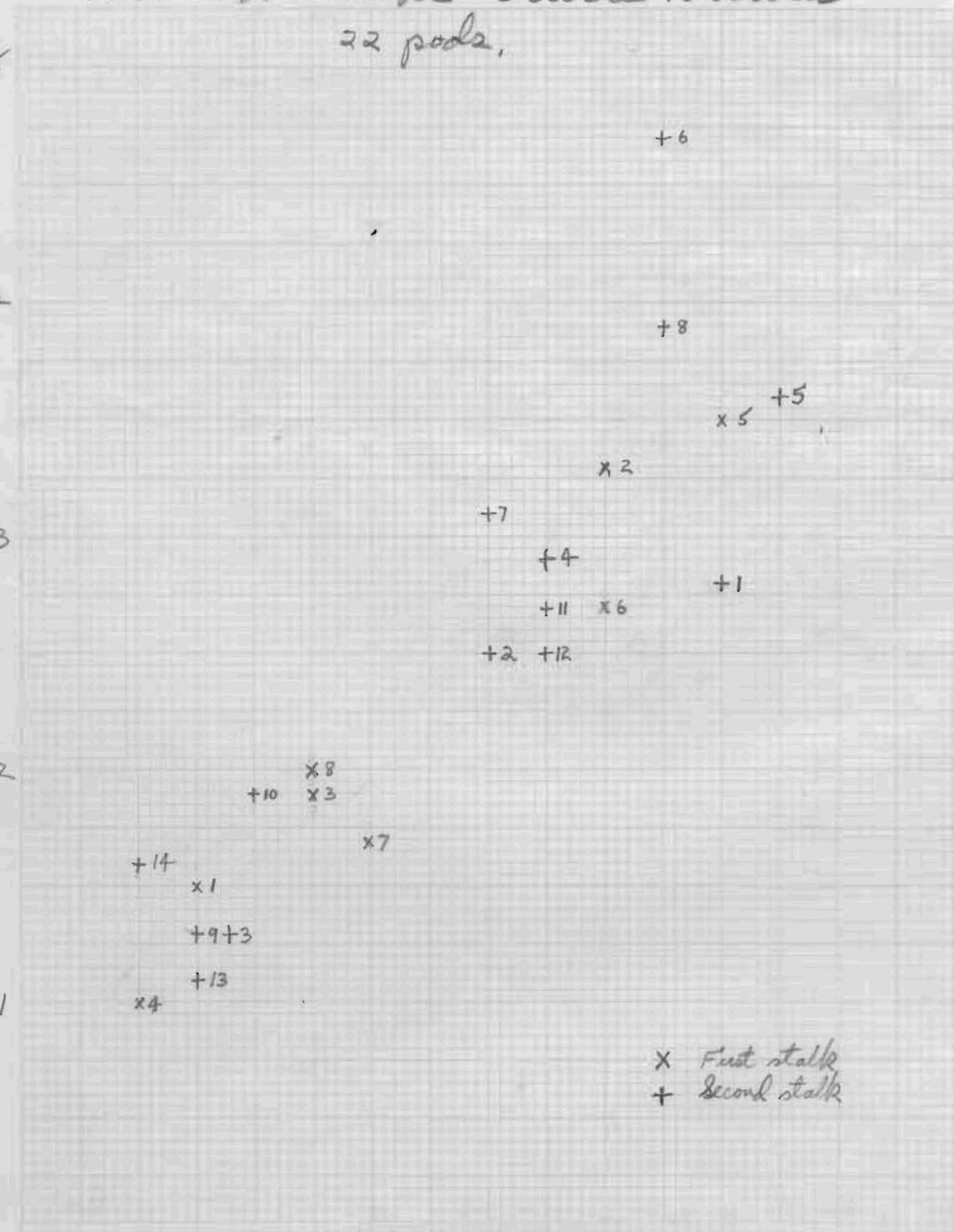
1st stalk Totals.	293.8	53	204.5	31.5	80.5	89.3	17.6
Sum.	912.4	158	657.4	91.8	243.7	255.0	53.5
Combined Average	41.5	7.19	29.9	4.17	11.1	11.6	2.43

1st & 2nd Stalks *Bowia Volubilis*

22 pods,

mg seeds / mg stalks,

5
4
3
2
1



0 1 2 3 4 5 6 7 8 9 10 11 12 13

Seeds.

x First stalk
+ Second stalk

Bowiea volubilis

20/2/64 Removed plant from table and put on floor at east end of glass house. Added a seven foot extension to top of dowel rod and pushed extension thru hole in roof of glass house. About 12 feet of rod are available for vine to climb on. Placed pineapple pot in front to shadow it in afternoon and reduce evaporation.

28/2/64 Second stalk still drying. Two pods near bottom have cracked. Others still more or less green. The third stalk is now nearly 8 ft high and growing more slowly. A large number of fruits are available. Some leaves about a foot from base are beginning to turn yellow so this stalk probably has about reached full growth.

2/3/64 ^{second stalk} Four pods near bottom are dry. Top pods very green yet.

9/3/64 Pods continuing to dry. Picked off the three immature pods. They had no seeds. Also picked off bottom pod which was tipping over. It has two seeds totalling 7.8 mg.

Shrub weighs 4.9 mg. The third stalk continues to climb slowly. The pitch of twine is much less now so stalk is reaching mature size.

12/3/64 Harvested pods # 8-13 inclusive.

13/3/64 " " 6+7 "

18/3/64 " " 3-5 "

22/3/64 " " 2

24/3/64 Third stalk has come to end of growth. The tip of vine is very small and turned out instead of around pole. A final flower bud is pointing straight up. The pitch of twine has been very small the last few turns. All these things mean end of development.

31/3/64 harvested pod # 1 second stalk

(over)

Bowiea volubilis

3/9/64 Took fotos as follows.

± 10 + 11 Stereo pair left & right from 13 feet
12, 13, 14, 15, 16 Sections of plant from top
to bottom.

6/4/64 Measured height of the turns above base level. also
put marks on dowel giving pod numbers 35, 60, 80. This time
count is from bottom because an unknown number of pods
will still form at top. One bud remains shut at very top
and about ten flowers are still open. Pods numbers 33 + 35
are dried and cracked at top. These should be harvested soon.

Mode computations and plotted data. 16/6/64

If mg seed are plotted versus mg stalks a huge
scatter of points will appear having slopes from 1.0 to 5.5
This is because slope is a function of number of seeds in
pod. The best way is to find straight line through points
using all three stalks. There will be an intercept value
at zero seeds.

Next year a similar experiment should be performed
with a reversed stalk. If the ratio mg seeds / mg stalks
is greater on reversed vine the intercept value will rise
on reversed stalk.

2/7/64

Dug up bulb. Found it had grown from size of a Hawaiian
bean weighing about 0.5 gm to $1\frac{1}{4}$ " diameter weighing
19.8 grams. An increase of 40 times. The large root
system filled pot. Roots spread out horizontally
until reaching side of pot and there went down.

Bowiea Volubilis

2/7/64 Continued.

Perhaps a third of root system (mostly finer parts) were lost when dug up. Four fotos were taken; two of different exposures at two different positions. Weight of 19.8 gms includes roots as shown in foto. Bulb was reburied in same pot for the time being. It must be transferred to a larger pot for next growing season. The three vines were saved and put in a large envelope appropriately marked.

3rd Stalk *Borvia volubilis* 6/4/64

Side of turn above ground.

Turn	Height	Δ	Turn	Height	Δ
1	1.4"	1.1	31	75.7	2.3
2	2.5	1.8	32	78.0	3.0
3	4.3	1.7	33	81.0	2.7
4	6.0	2.3	34	83.7	2.3
5	8.3	1.7	35	86.0	1.3
6	10.0	1.8	36	87.3	1.2
7	11.8	2.5	37	88.5	1.1
8	14.3	2.7	38	89.6	0.7
9	17.0	2.2	39	90.3	0.7
10	19.2	1.9	40	91.0	0.7
11	21.1	2.4	41	91.7	0.7
12	23.5	2.5	42	92.4	0.4
13	26.0	1.9	43	92.8	0.2
14	27.9	3.4	44	93.0	
15	31.3	2.2		Total	91.6
16	33.5	2.6			
17	36.1	3.2			
18	39.3	2.2			
19	41.5	3.1			
20	44.6	2.4			
21	47.0	3.4			
22	50.4	2.5			
23	52.9	2.6			
24	55.5	3.6			
25	59.1	3.2			
26	62.3	3.2			
27	65.5	2.5			
28	68.0	2.9			
29	70.9	2.5			
30	73.4	2.3			

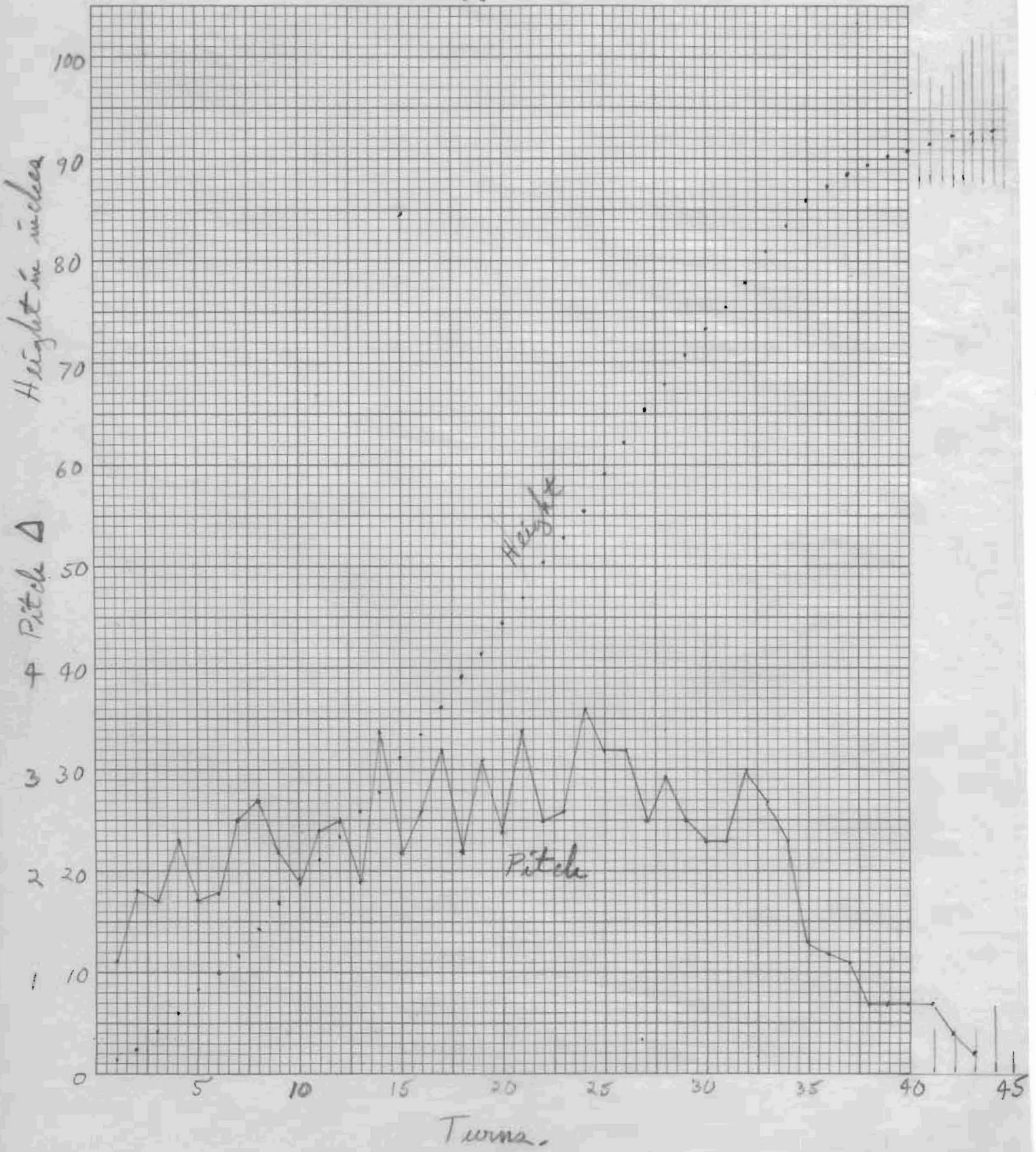
16/6/64

2nd Stalk.

Turn	Height	Δ
1	2.6"	0.9
2	3.5	1.0
3	4.5	1.1
4	5.6	1.2
5	6.8	1.2
6	8.0	1.7
7	9.7	1.2
8	10.9	1.6
9	12.5	1.5
10	14.0	1.6
11	15.2	1.4
12	17.0	1.4
13	18.4	1.5
14	19.9	1.4
15	21.3	1.3
16	22.6	1.2
17	23.8	1.1
18	24.9	0.9
19	25.8	
	Total.	23.2

3rd Stalk *Borvia volubilis*

6/4/64



Third Stalk *Bowia volubilis*. Pods numbered from bottom

Date	Pod		Seeds		mg seed	Mg Shuck		mg seed
	Order	mg	Number	mg	measured	computed	mg shuck	
30/4/64	2	47.5	11	38.2	4.20	9.2	9.3	4.11
21/4/64	1	30.5	8	22.3	2.79	8.5	8.2	2.72
27/4/64	6	40.7	10	31.7	3.17	9.6	9.0	3.52
30/4/64	9	38.8	8	27.3	3.41	11.3	11.5	2.38
24/4/64	5	35.8	7	27.2	3.89	8.7	8.6	3.16
17/4/64	4	26.2	5	18.2	3.64	8.1	8.0	2.28
24/4/64	3	35.8	7	24.0	3.43	11.6	11.8	2.03
13/4/64	7	49.8	9	33.9	3.77	12.3	15.9	2.14
24/4/64	8	63.4	13	48.7	3.75	14.5	14.7	3.32
30/4/64	10	34.8	8	26.3	3.29	8.3	8.5	3.10
24/4/64	11	22.4	4	16.0	4.00	6.8	6.4	2.50
13/4/64	12	40.0	7	28.8	4.12	10.6	11.2	2.57
10/4/64	13	36.7	7	25.6	3.66	11.1	11.1	2.31
30/4/64	14	19.1	5	13.1	2.62	6.6	6.0	2.19
4/5/64	15	37.1	12	27.8	2.32	8.4	9.3	2.99
27/4/64	16	35.7	8	26.4	3.30	9.0	9.3	2.84
17/4/64	17	18.3	3	11.3	3.77	7.3	7.0	1.62
27/4/64	18	32.0	8	23.8	2.97	8.6	8.2	2.90
24/4/64	19	50.7	10	40.3	4.03	9.8	10.4	3.88
30/4/64	20	37.1	9	28.8	3.20	7.6	8.3	3.47
→ 13/4/64	21	87.4	13 ⁽¹⁵⁾	60.8 ^(70.2)	(4.67)	25.9 ^(14.5)	26.6 ^(17.3)	(4.08)
24/4/64	22	34.2	6	24.8	4.13	9.4	9.4	2.64
4/5/64	23	23.1	7	16.2	2.32	6.7	6.9	2.35
21/4/64	24	76.7	15	62.4	4.16	14.2	14.3	4.35
17/4/64	25	78.2	14	62.5	4.46	15.9	15.7	3.98
21/4/64	26	54.3	10	42.8	4.28	11.5	11.5	3.72
4/5/64	27	48.1	15	38.0	2.53	9.6	10.1	3.76
27/4/64	28	55.6	12	45.0	3.75	10.0	10.6	4.25
30/4/64	29	22.9	5	16.2	3.24	6.8	6.7	2.42
4/5/64	30	38.1	11	29.2	2.66	8.8	8.9	3.28

Probably 2 seeds left in shuck

Probably one seed left in shuck

Date	Pod		Seeds		mg	Mg Shuck		mg seeds
	Order	mg	Number	mg	seed	measured	computed	mg shuck
27/4/64	31	15.2	3	9.2	3.07	6.1	6.0	1.54
17/4/64	32	56.7	9	44.0	4.89	12.8	12.7	3.46
7/4/64	33	92.8	15	72.3	4.82	19.6	20.5	3.52
4/5/64	34	44.0	12	33.8	2.82	10.0	10.2	3.32
7/4/64	35	81.5	12	61.8	5.15	19.1	19.7	3.14
11/5/64	36	12.0	3	7.3	2.43	5.2	4.7	1.56
4/5/64	37	31.2	7	23.6	3.47	8.0	7.6	3.11
4/5/64	38	45.6	11	35.7	3.25	9.6	9.9	3.53
30/4/64	39	66.2	14	52.4	3.74	13.2	13.8	3.80
10/4/64	41	78.0	15	59.3	3.95	18.3	18.7	3.17
10/4/64	42	68.9	15	52.0	3.47	17.4	16.9	3.08
13/4/64	43	53.2	9	39.5	4.39	12.1	13.7	2.89
	44	103.8	17	83.7	4.92	18.7	20.1	4.16
	45	89.6	12	69.2	5.76	19.5	19.4	3.57
	46	55.9	7	41.3	5.90	14.2	14.6	2.83
↳ 13/4/64	47	91.2	11 ⁽¹²⁾	65.4 ^(76.9)	(5.99)	24.9 ^(18.9)	25.3 ^(19.3)	(3.72)
27/4/64	↳ 40	90.0	18	76.2	4.23	14.3	13.8	5.52
7/7/4/64	48	37.2	6	25.7	5.28	9.6	11.5	2.24
"	49	64.2	10	49.1	4.91	14.0	15.1	3.25
"	51	45.1	6	32.5	5.42	11.3	12.6	2.58
21/4/64	50	77.4	14	59.5	4.25	17.7	17.9	3.33
21/4/64	52	22.8	3	14.1	4.70	9.0	8.7	1.62
27/4/64	53	70.4	14	56.2	4.02	13.7	14.2	3.96
"	54	89.8	16	74.3	4.65	15.3	15.5	4.79
"	55	71.5	13	56.9	4.38	14.4	14.6	3.90
"	56	87.3	14	70.7	5.05	16.1	16.6	4.26
"	57	64.7	9	49.1	5.46	14.5	15.6	3.15
30/4/64	58	51.3	11	37.9	3.45	12.6	13.4	2.83
4/5/64	59	41.8	8	30.0	3.75	11.7	11.8	2.55
5/5/64	60	53.4	10	40.2	4.02	12.8	13.2	3.05

Third Stalk *Bourica volubilis* continued

Date	Pod		Seeds		mg	Mg Shuck		mg seeds
	Order	mg	Number	mg	seed	measured	computed	mg shuck
5/5/64	61	69.6	13	54.3	4.18	15.3	15.3	3.55
"	62	88.7	17	70.4	4.14	18.0	18.3	3.84
8/5/64	63	49.1	11	37.7	3.43	11.1	11.4	3.31
"	64	58.7	14	45.9	3.28	13.5	12.8	3.58
"	65	65.6	16	50.3	3.15	14.8	15.3	3.29
11/5/64	66	60.9	15	47.7	3.18	13.7	13.2	3.61
"	67	57.0	11	45.5	4.14	10.9	11.5	3.96
"	68	11.5	2	5.9	2.95	6.1	5.7	1.04
16/5/64	69	69.8	15	50.9	3.39	13.0	13.9	3.66
"	70	69.3	18	55.8	3.10	12.8	13.5	4.13
"	71	79.8	17	64.7	3.81	14.8	15.1	4.28
18/5/64	72	80.8	18	65.7	3.65	15.2	15.1	4.35
16/5/64	73	18.3	4	10.6	2.65	7.6	7.7	1.38
19/5/64	74	69.4	14	55.8	3.98	13.9	13.6	4.10
22/5/64	75	38.0	11	28.6	2.60	9.8	9.4	3.04
"	76	46.0	13	34.6	2.66	11.8	11.4	3.04
"	77	52.7	17	39.6	2.33	13.0	13.1	3.02
25/5/64	78	42.1	13	31.6	2.43	10.3	10.5	3.01
1/6/64	79	43.1	14	32.9	2.35	10.1	10.2	3.23
"	80	39.5	12	29.3	2.44	10.3	10.2	2.88
"	81	48.6	15	36.9	2.46	12.1	11.7	3.15
"	82	25.2	7	16.4	2.34	8.8	8.8	1.87
16/6/64	83	11.2	3	5.5	1.83	6.4	5.7	0.96
Totals		4293.4	884	3293.0	307.59	978.3	999.8	260.57
Averages		51.8	10.65	39.7	3.71	11.80	12.05	3.14

36 pod had only 2 sections, # 68 same

Culls 6 15.7 2.60
 Measured total seeds on 16/6/64 2651.2 Seeds have dried out a lot.
 (over)

See envelope 1961/2

19/6/64

A linear function may be fitted to this by methods of 26/9/63. See "Up to 1 foot, Hawaiian, North Row, Standard Seed, Reversed and Normal Vines, 1961/2". An intercept and slope may be secured with high accuracy. Unfortunately the line must go through zero because ordinate goes to zero when abscissa goes to zero. Some points closer to zero could have been secured from culls which had only one seed. Unfortunately these were thrown away before this was realized.

Some curve of type $Y = aX^b$ will provide the best fit where b is slightly greater than unity. Using data from all three stalks will give 105 points.

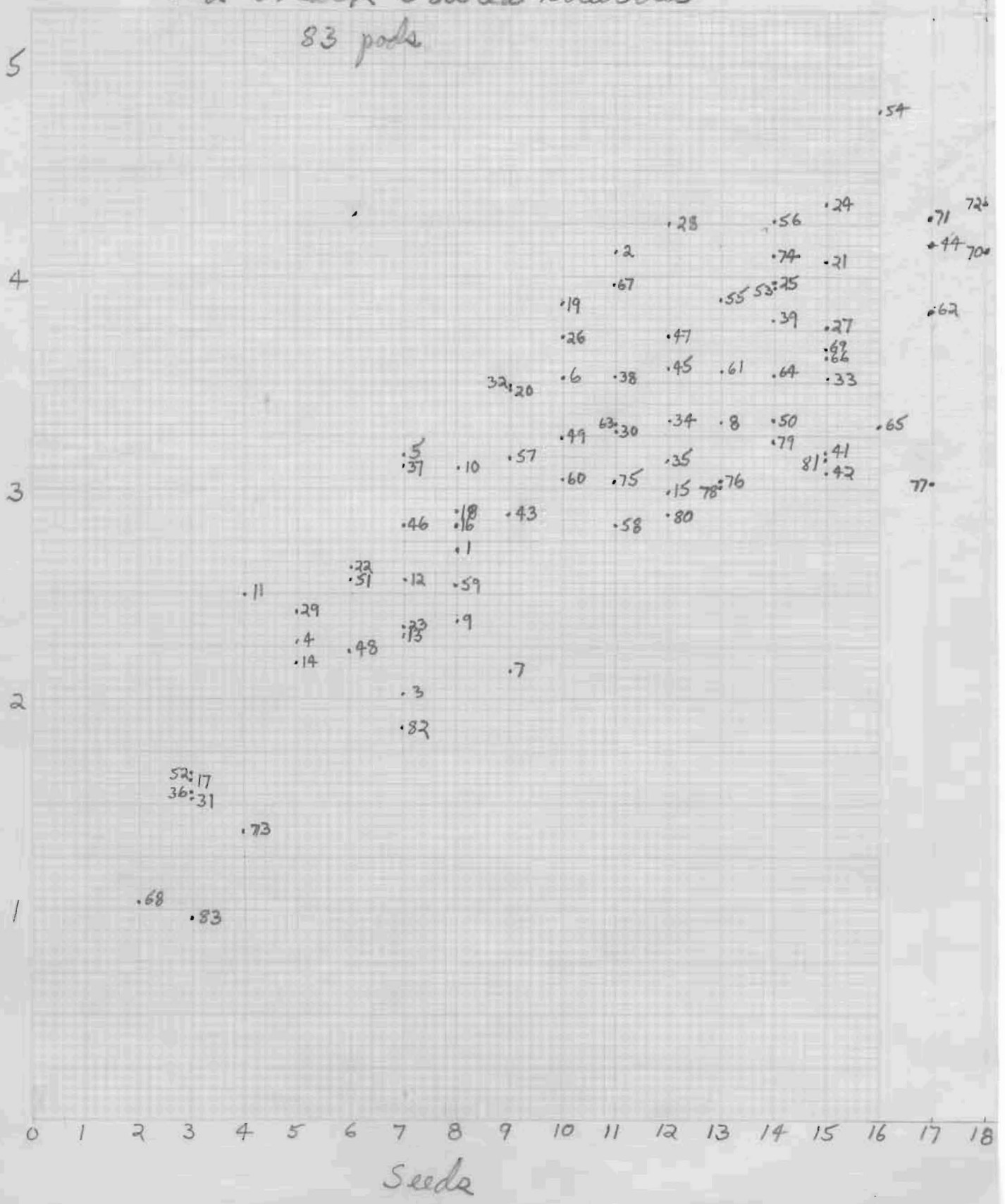
16/6/64

400

3rd Stalk *Bowisa volubilis*

83 pods

mg seeds / mg shuck



Seeds

Grote Reber STOWELL
Hobart

VARN D.F. S.S. M.S. V.R.
REGN 1 4.978712 4.978712 471.754
DEVN 103 1.087021 .010553
TOT 104 6.065734

LOGY = .323844 + 1.372432 LOGX

R = .9059 SY SX CSSY CSSX CSP
.98848743E+02 .47248317E+02 .60657340E+01 .26432310E+01 .36276560E+01

In above your $X = my$ and your $Y = ny$

In what follows Reber's notation is used.

$$\log X = .323844 + 1.372432 \log Y$$

i.e. $X = 2.1079 Y^{1.3724}$

* Points for curve drafting

Y	X
1.0	2.11
1.2	2.71
1.4	3.35
1.6	4.02
1.8	4.72
2.0	5.46
2.2	6.22
2.4	7.01
2.6	7.82
2.8	8.66
3.0	9.52
3.2	10.40
3.4	11.30
3.6	12.23
3.8	13.17
4.0	14.13
4.2	15.11
4.4	16.10

Mean $\log X = .9414$ corresponding to

Harmonic mean 8.738

Mean $\log Y = .549984$

HM = 3.548

Stenhouse:

10/7/64

Please fit the best curve of type $X = AY^B$ to the 105 points. Values and standard error for A and B are desired

Grote Pelon

X	Y	X	Y	X	Y	X	Y
3	1.47	5	2.28	15	3.52	10	3.05
10	3.26	7	2.03	12	3.32	13	3.55
5	1.85	9	2.14	12	3.14	17	3.84
2	.99	13	3.32	3	1.56	11	3.31
12	3.49	8	3.10	7	3.11	14	3.58
10	2.72	4	2.50	11	3.53	16	3.29
6	1.65	7	2.57	14	3.80	15	3.61
5	2.02	7	2.31	15	3.17	11	3.96
12	2.81	5	2.19	15	3.08	2	1.04
8	2.49	12	2.99	9	2.89	15	3.66
3	1.29	8	2.84	17	4.16	18	4.13
9	2.85	3	1.62	12	3.57	17	4.28
13	3.60	8	2.90	7	2.83	18	4.35
11	4.70	10	3.88	12	3.72	4	1.38
8	3.09	9	3.47	18	5.52	14	4.10
11	3.87	15	4.08	6	2.24	11	3.04
3	1.27	6	2.64	10	3.25	13	3.04
4	1.86	7	2.35	6	2.58	17	3.02
9	2.70	15	4.35	14	3.33	13	3.01
9	2.53	14	3.98	3	1.62	14	3.23
3	1.15	10	3.72	14	3.96	12	2.88
2	1.59	15	3.76	16	4.79	15	3.15
11	4.11	12	4.25	13	3.90	7	1.87
8	2.72	5	2.42	14	4.26	3	0.96
10	3.52	11	3.28	9	3.15		
8	2.38	3	1.54	11	2.83		
7	3.16	9	3.46	8	2.55		

Borwiana volubilis

- 23/10/64 Bulb weight reduced from 19.8 to 15.3 gms. Roots have contracted and inside shrivelled somewhat. The outside skin is like a dry onion and rather loose. Replanted bulb in pot with three times the volume. Added four cups of water to saturation. Left on office bench.
- 16/11/64 Bulb apparently is swelling as ground cracking. No sprout. Put in 80°F room.
- 26/11/64 No activity. Put in glass house. Started to dry soil.
- 1/12/64 Removed top soil. Bulb has swelled to twice original diameter and has very tight skin. Looks like a fresh onion about 1½" diameter. Probably weighs 100 gms. A very small green point is coming out of top. Put soil back. added sand on top. Watered well. Placed pot inside a steel can full of water. This brings water level up to about 3" from top of pot. Left in glass house.
- 3/12/64 Decided plant might have wet feet. Took out of metal pot + put in low dish.
- 4/12/64 The shoot has just moved dirt at surface.
- 7/12/64 Shoot ½" high. Looks like a twiner and not a leaf. A second bud appears to be forming at base of shoot.
- 10/12/64 Been cold + cloudy. No visible progress.
- 18/12/64 Bud actually turned out to be a sheath around shoot. Later has not changed any. Another shoot or leaf appears at side of sheath.
- 21/12/64 The third item turned out to be a runner, now 1" high
- 24/12/64 Runner 3" high. Put it on stick to climb
- 29/12/64 " 9" " By 5/1/65 the immature shoot of 1/12/64 has withered and dried. Finished
- 30/12/64 " 10½" "
- 31/12/64 " 12" Bulb 2½" diameter? (over)

Bowiea Volubilis

11

Date	Height	
1965		
4/1	$15\frac{3}{4}$	Upon return from trip I noted the bottom leaves were withering.
5/1	$16\frac{3}{4}$	
7/1	18	Investigation showed that the drain at bottom of pot had plugged.
8/1	$19\frac{1}{4}$	
11/1	$22\frac{1}{4}$	This caused pot to be water logged. Bulb and roots had rotted.
12/1	$22\frac{3}{4}$	
14/1	24	Bulb cavity was $1\frac{3}{4}$ " diameter.
15/1	$24\frac{3}{4}$	
18/1	$27\frac{3}{4}$	Top part of plant was living on material from bottom part,
19/1	28	
21/1	$29\frac{1}{2}$	
22/1	30	
25/1	$32\frac{3}{4}$	
?	Lot of flower buds.	
26/1	$33\frac{1}{2}$	This is end of experiment because it takes too long to grow new plant,
27/1	$34\frac{3}{4}$	
28/1	$35\frac{1}{2}$	
about on trip		
8/2	$44\frac{1}{2}$ "	

Plants of last years seed is on hand to try again in U.S.A.