

Ounces of Beans

Hawaiian 1959, Row 8

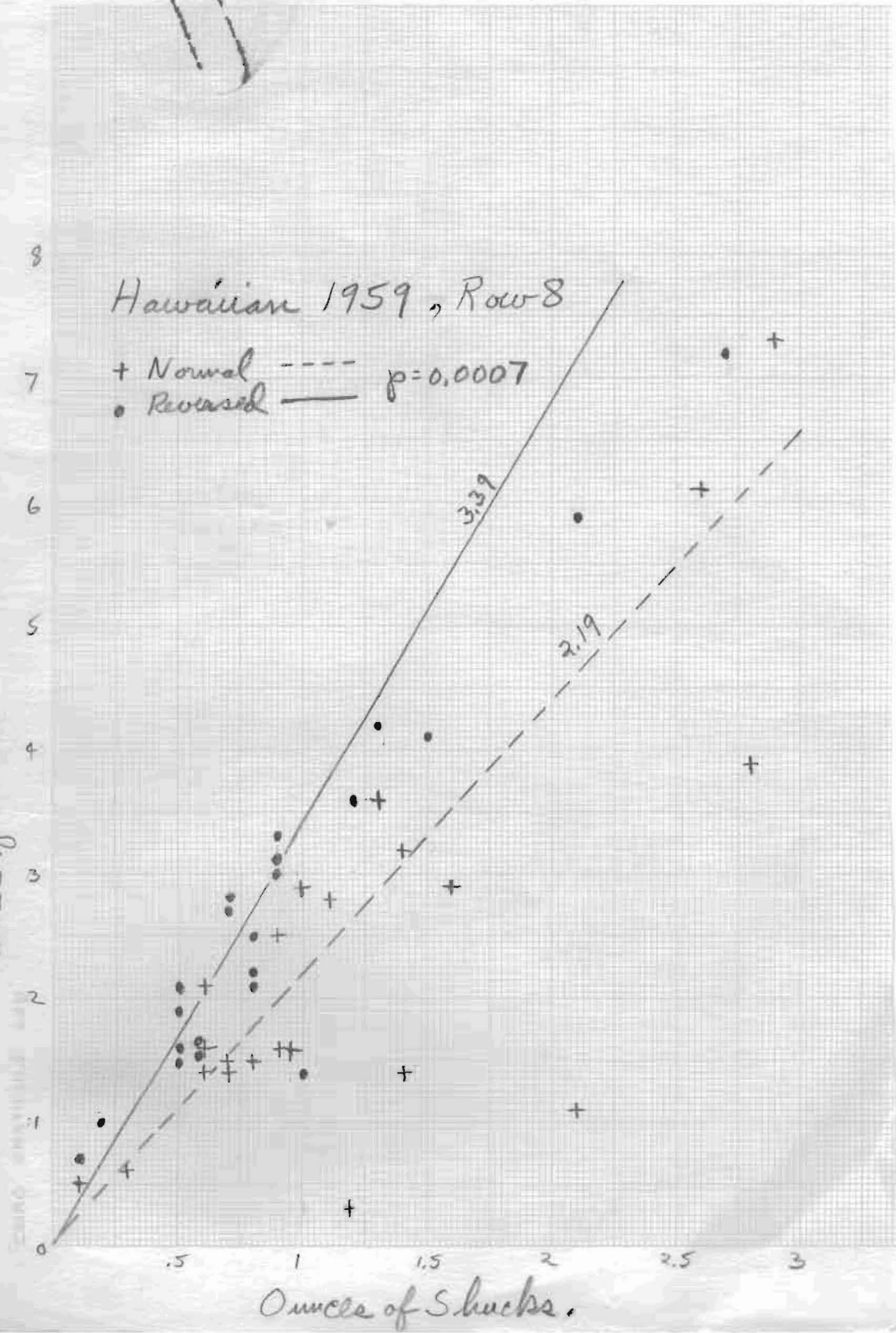
+ Normal  
• Reversed

$p=0.0007$

3.39

2.19

Ounces of Shucks.



# Hawaiian 1959 Row-8

4 May 65

## Normal (22)

## Reversed (22)

Position	Oz Beans Oz Shuska	Deviation	Dev. <sup>2</sup>	Position	Oz Beans Oz Shuska	Deviation	Dev. <sup>2</sup>
1	5.0	+2.8	7.84	2	3.2	-0.2	.04
3	2.0	-0.2	.04	4	5.0	+1.6	2.56
5	2.3	+0.1	.01	6	7.0	+3.6	12.96
7	0.3	-1.9	3.61	8	5.2	+1.8	3.24
9	1.8	-0.4	.16	10	2.8	-0.6	.36
11	2.0	-0.2	.04	12	3.3	-0.1	.01
13	3.5	+1.3	1.69	14	3.8	+0.4	.16
15	1.8	-0.4	.16	16	3.9	+0.5	.25
17	2.3	+0.1	.01	18	2.7	-0.7	.49
19	2.9	+0.7	.49	20	3.0	-0.3	.09
21	1.9	-0.3	.09	22	-	-	-
23	2.1	-0.1	.01	24	3.2	-0.2	.04
25	-	-	-	26	3.7	+0.3	.09
27	2.8	+0.6	.36	28	3.2	-0.2	.04
29	1.0	-1.2	1.44	30	-	-	-
31	0.5	-1.7	2.89	32	3.0	-0.4	.16
33	2.8	+0.6	.36	34	4.0	+0.6	.36
35	1.8	-0.4	.16	36	0.9	-2.5	6.25
37	-	-	-	38	2.7	-0.7	.49
39	2.7	+0.5	.25	40	3.3	-0.1	.01
41	2.6	+0.4	.16	42	2.6	-0.8	.64
43	1.4	-0.8	.64	44	2.7	-0.7	.49
45	2.3	+0.1	.01	46	2.8	-0.6	.36
47	2.5	+0.3	.09	48	2.7	-0.7	.49
49	-	-	-	50	-	-	-
<b>Sums</b>	48.3	+0.1	20.51		74.7	0	29.58

Averages      2.194 avg      2.12      3.39 avg      3.4

$$S = \left[ \frac{20.51 + 29.58}{22 + 22 - 2} \right]^{1/2} = \left[ \frac{50.09}{42} \right]^{1/2} = \left[ 1.192 \right]^{1/2} = 1.093$$

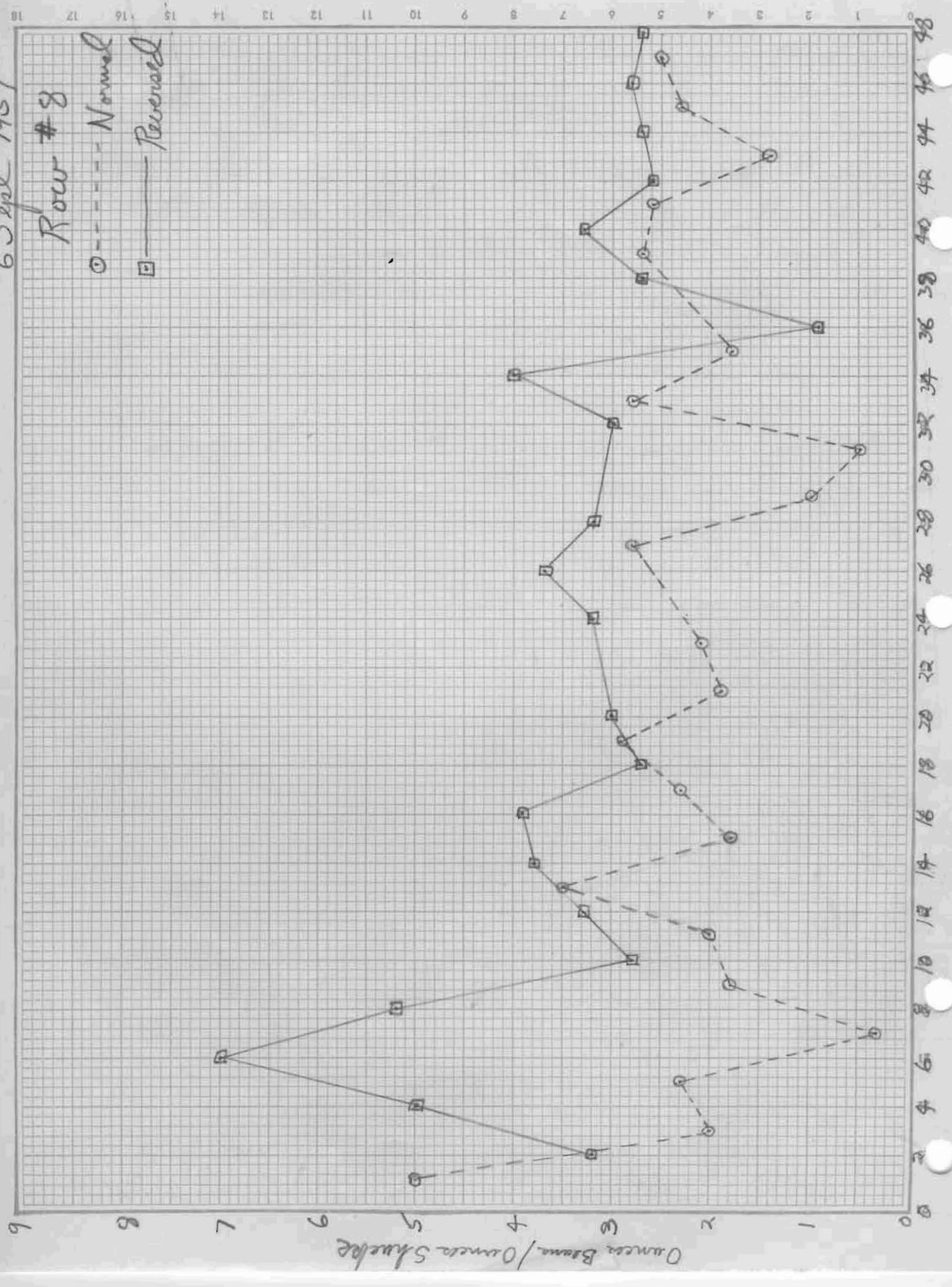
$$t = \frac{(3.39 - 2.19) \left( \frac{22 \times 22}{22 + 22} \right)^{1/2}}{1.093} = \frac{1.20}{1.093} \cdot 3.32 = 3.64, \quad (n_N + n_R - 1) = 43, \quad p = 0.0007$$

6 Sept 1959

Row # 8

○ --- Normal

□ --- Reversed



Omura Bream / Omura Skuabe

6 5 4 3 2 1 0

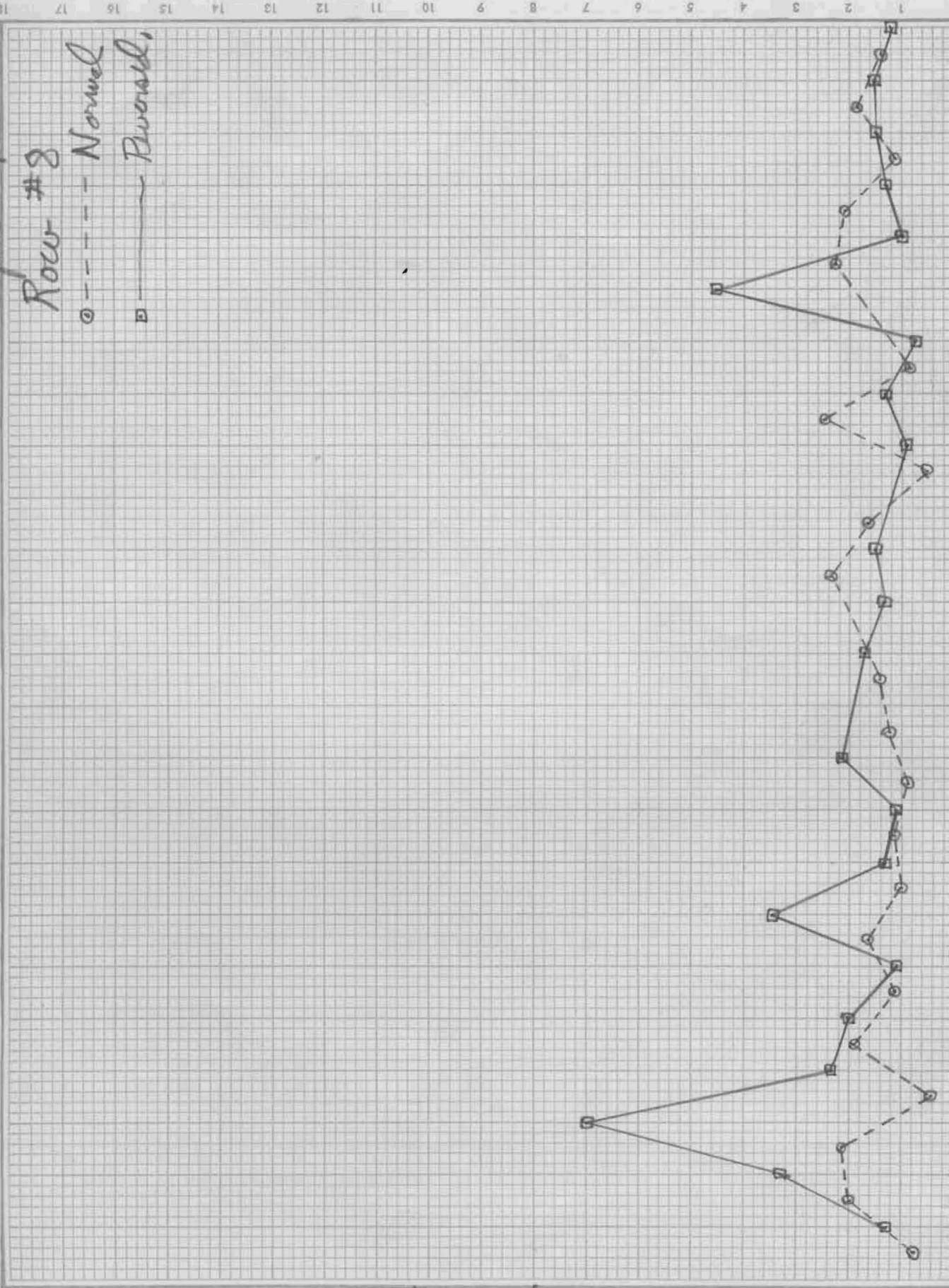
2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48

8 Sept 59

Row #8

○ --- Normal

□ --- Reversal,



Hill Number

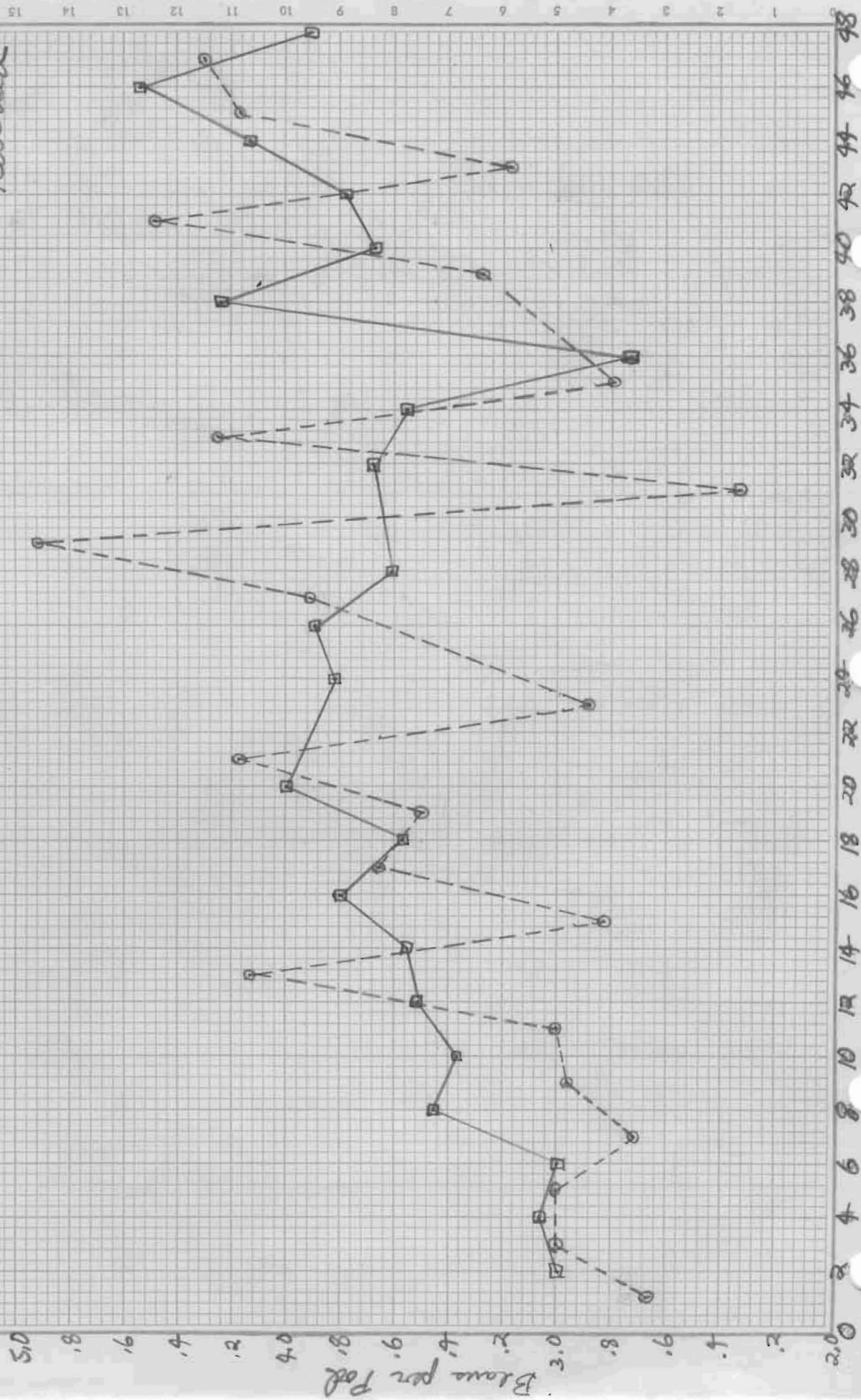
Hill Number

18  
17  
16  
15  
14  
13  
12  
11  
10  
9  
8  
7  
6  
5  
4  
3  
2  
1

8 Sept 59

Row #8

○ --- Normal  
□ --- Reversed



Hill Number

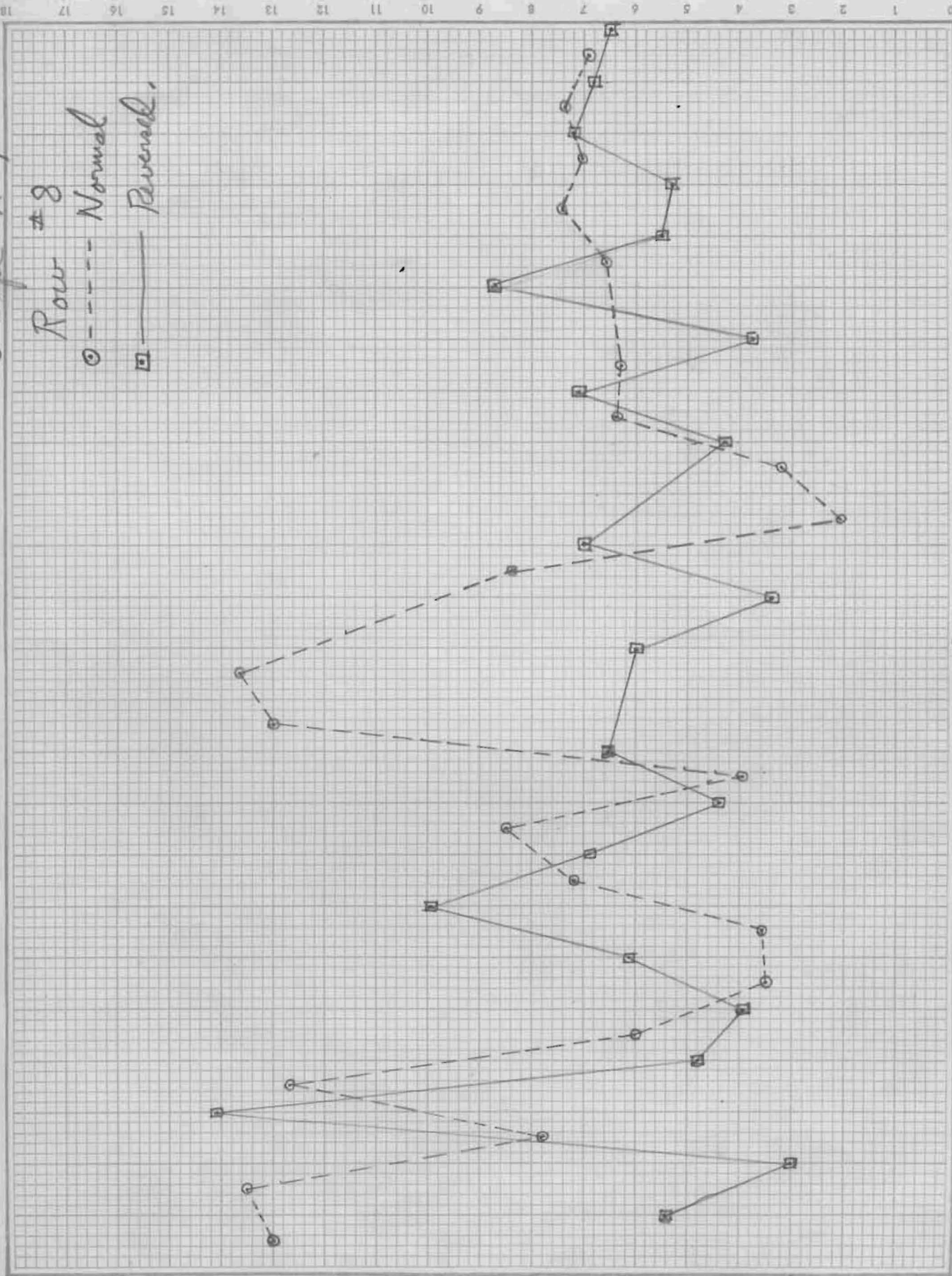
6 Sept 1959

Row #8

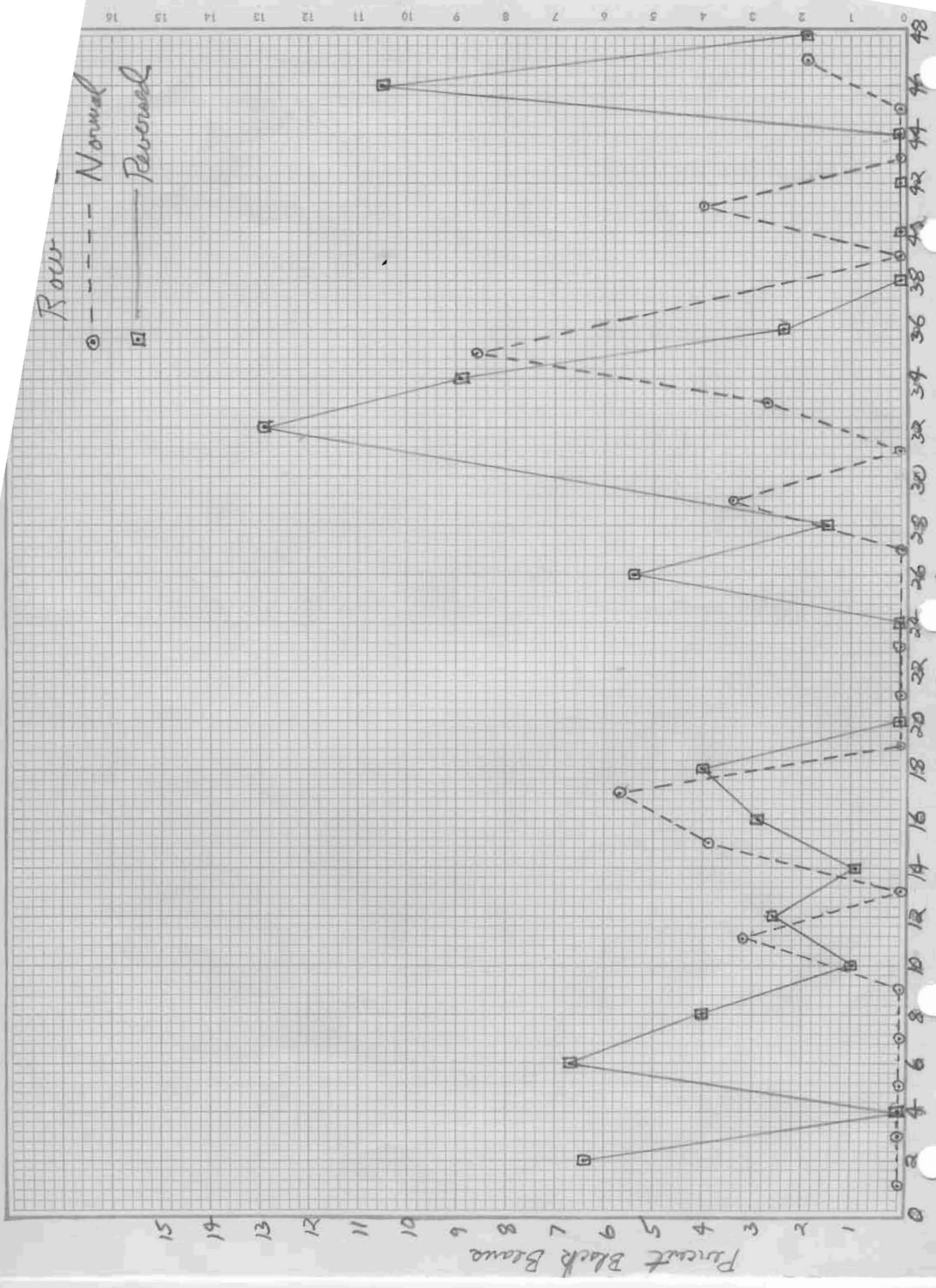
○ --- Normal

□ — Reverse

Beans per ounce



Hill Number



Row #8, Normal Vines

3 Sept 1959

Hill	Condition of Vines	Number Vines	Ounces Vines	Number Pods	Ounces Pods	Number Beans	Ounces Beans	Ounces Shucks	Beans oz (Vine + Shuck) oz	Percent Black Beans	Beans per oz.	Oz Beans	Oz Shucks	Oz Beans	Oz Vines
1	Green Flowering	4	1.3	12	0.6	32	0.5	0.1	.36	0.0	64.0	5.0	.38		
3	Green	1	0.6	13	1.1	39	0.6	0.3	.67	0.0	65.0	2.0	1.00	4 small mostly near top	
5	New Green	6	1.3	25	2.0	75	1.4	0.6	.74	0.0	53.6	2.3	1.02	1 at end mostly near top	
7	Very green	2	1.4	7	1.5	19	0.3	1.2	.12	0.0	63.4	.3	.21	2 large 1 bean 1.0 oz	
9	Partly Green	4	1.7	29	2.6	80	1.6	0.9	.61	0.0	50.0	1.8	.94		
11	Green Flowering	4	2.5	21	2.1	63	1.4	0.7	.43	3.2	45.0	2.0	.56	2 black in pod 2 beans	
13	Very green	3	2.6	23	2.7	95	2.1	0.6	.66	0.0	45.2	3.5	.81	4 partly black in pod	
15	Green	2	5.8	54	4.6	152	2.9	1.6	.22	3.9	52.4	1.8	.50	1, 2, 3 black in pods.	
17	Green	5	5.5	48	4.6	176	3.2	1.4	.46	5.7	55.0	2.3	.58	8 black in 2 pods	
19	Green Flowering	3	6.5	38	4.0	133	2.9	1.0	.39	0.0	45.9	2.9	.45		
21	Partly Dry	2	2.4	23	2.3	96	1.5	0.8	.47	0.0	64.0	1.9	.62		
23	"	3	2.1	34	2.4	98	1.5	0.7	.53	0.0	65.3	2.1	.71		
25	Missing														
27	Nearly Dry	4	2.1	35	3.5	137	2.5	0.9	.83	0.0	54.8	2.8	1.19		
29	"	1	1.7	12	2.8	59	1.4	1.4	.45	3.4	42.2	1.0	.82	2 black in pod	
31	Flowering Green	4	4.3	21	3.3	49	1.1	2.1	.17	0.0	44.5	.5	.26		
33	Nearly Dry	4	2.9	43	4.9	183	3.6	1.3	.85	2.7	50.8	2.8	1.24	5 black in pod	
35	Flowering Green	5	3.9	29	2.6	81	1.6	0.9	.33	8.6	50.6	1.8	.41	7 black in 3, 4 pods	
37	Missing														
39	Dry	5	1.4	25	2.2	82	1.6	0.6	.80	0.0	51.2	2.7	1.14		
41	Nearly Dry	1	2.7	33	3.9	148	2.8	1.1	.74	4.0	52.9	2.6	1.04	6 black in 1, 1, 4 pods	
43	Partly Dry	5	6.9	64	6.7	203	3.9	2.8	.40	0.0	52.1	1.4	.57		
45	"	4	6.5	79	8.9	322	6.1	2.6	.67	0.0	52.8	2.3	.94		
47	"	5	10.5	88	10.6	378	7.3	2.9	.54	1.9	51.8	2.5	.70	7 black 3, 1, 3 pods	



Entire Normal Vines

	Mean	RMS	SE
Oz beans / Oz stalks	2,195	.988	.211
Oz beans / Oz vines	.734	.306	.065
Beans / oz	53,3	7.04	1.50
Percent Black beans	1.52	2.38	.509
Beans / Pod	3.46	.719	.153
Oz Beans / oz vines + stalks	.52	.21	.045

Percent Black Beans omitting all zero hills	4.18	2.102	.743
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Row #8, Reversed Vines

Harvested { #21-48 4 Sept 1959  
#1-20, 3 Sept 1959

Hill	Condition of Vines	Number Vines	Ounces Vines	Number Pods	Ounces Pods	Number Beans	Ounces Beans	Ounces Shuck	Beans Dry (Vines + Shuck)	Percent Black Beans	Beans per Dry	Ory Beans	Ory Shuck	Ory Beans	Ory Vines	
2	Green Flowering	3	2.5	26	2.1	78	1.6	0.5	.53	6.4	48.8	3.2	.64			5 black beans in one pod
4	New Green	4	0.6	18	1.3	55	1.0	0.2	1.25	0.0	44.0	5.0	1.67			
6	Dry	3	0.2	15	1.1	45	0.7	0.1	2.33	6.7	64.2	7.0	3.50			3 black beans in one pod
8	Green Flowering	3	1.8	29	2.7	100	2.1	0.5	.91	4.0	47.6	5.2	1.77			4 black beans in one pod
10	"	3	2.2	30	3.0	101	2.2	0.8	.73	1.0	45.9	2.8	1.00			One black bean in one pod
12	New Green Growth	8	5.6	43	4.2	151	3.0	0.9	.46	2.6	50.3	3.3	.53			4 black in one pod
14	Nearly Dry	3	1.1	31	2.6	110	1.9	0.5	1.19	0.9	57.9	3.8	1.73			one black bean in one pod
16	New Green Very Green	4	3.9	36	3.4	137	2.7	0.7	.59	2.9	50.8	3.9	.69			4 black in one pod
18	Flowering	2	6.1	21	2.2	75	1.6	0.6	.24	4.0	46.8	2.7	.53			3 black in one pod
20	Partly Dry	3	3.3	46	4.8	184	3.6	1.2	.80	0.0	51.1	3.0	1.09			
22	Missing															
24	New Green	6	(5.0) 8.0	55	5.5	210	4.2	1.3	(.67) .45	0.0	50.0	3.2	(.34) .52			
26	New Green	4	(5.1) 6.1	38	4.3	148	3.3	0.9	(.55) .47	5.4	44.8	3.7	(.65) .54			8 black in one pod
28	Partly Dry	5	3.3	36	3.6	130	2.5	0.8	.61	1.5	52.0	3.2	.76			2 black in one pod
30	New Green	mit 1	(2.1) 3.6	mit 7	mit 0.7	mit 13	mit 0.3	mit 0.4	(.12) .08	mit 0.0	mit 43.3	mit .9	(.14) .08			
32	Flowering Green	2	3.1	19	2.0	70	1.5	0.5	.42	12.9	46.6	3.0	.48			9 black in 3 pods
34	Partly Dry	7	4.3	41	3.6	146	2.8	0.7	.56	8.9	52.2	4.0	.65			13 black 3.55 pods
36	Green	4	2.3	15	1.9	41	0.9	1.0	.27	2.4	45.5	.9	.39			1 black
38	Nearly Dry	5	0.7	21	2.2	89	1.6	0.6	1.23	0.0	55.5	2.7	2.28			
40	New Green	5	6.0	40	4.0	147	3.0	0.9	.44	0.0	49.0	3.3	.50			
42	Green	3	3.2	27	2.9	102	2.1	0.8	.52	0.0	48.6	2.6	.66			
44	Partly Dry	3	5.6	52	5.6	215	4.1	1.5	.58	0.0	52.4	2.7	.73			
46	"	3	8.0	67	8.0	304	5.9	2.1	.58	10.5	51.6	2.8	.74			32 black 3.9, 4.4, 4.5, 2
48	Green Flowering	6	12.0	94	10.1	367	7.2	2.7	.49	1.9	51.0	2.7	.60			7 black 3.4 pods

Hill #18 had 3.1 oz of obvious new growth cut off.  
 Probably this didn't remove all new growth. Cut off  
 part of runner away as mostly suckers + flowers. <sup>By morning</sup>  
 of 4th this material had dried to 2.3 oz. Decided to put back in box  
 with gross mass of vines + hulls.

Hill #24 had a lot of new green including  
 some runners. Probably 8.0 oz is at least 3 oz high.

Hill #26 probably has 1 oz of new growth in 6.1 oz.

Hill #30 Perhaps some beans were picked from this hill  
 1.5 oz new growth included in 3.6 oz vines

	Entire	Revised	Vines
	Mean	RMS	SE
Oz beans / Oz shucks	3.395	1.188	.253
Oz beans / Oz vines	.992	.731	.156
Beans / oz	50.3	4.60	.98
Percent Black Beans	3.27	3.75	.80
Beans / Pod	3.63	.430	.092
Oz beans / Oz vines + shucks	.73	.44	.09
Percent Black Beans			
Something all zero hills	4.80	3.64	0.94

# Normal Vines Row #8

# Reversed Vines

Hill	Beans Pods	Pods Vines	Ounces per Vine	Hill	Beans Pods	Pods Vines	Ounces per Vine
1	2.67	3.0		2	3.00	8.7	
3	3.00	13.0		4	3.06	4.5	
5	3.00	4.2		6	3.00	5.0	
7	2.72	3.5		8	3.45	9.3	
9	2.96	7.3		10	3.37	10.0	
11	3.00	5.3		12	3.51	5.4	
13	4.13	7.7		14	3.55	10.1	
15	2.82	27.0		16	3.80	9.0	
17	3.66	9.6		18	3.57	10.5	
19	3.50	12.7		20	4.00	15.3	
21	4.17	11.5		22			
23	2.88	11.3		24	3.82	9.2	
25				26	3.89	9.5	
27	3.91	8.8		28	3.61	7.2	
29	4.92	12.0		30			
31	2.33	5.3		32	3.68	9.5	
33	4.25	10.8		34	3.56	5.9	
35	2.79	5.8		36	2.73	3.8	
37				38	4.24	4.2	
39	3.28	5.0		40	3.67	8.0	
41	4.49	33.0		42	3.78	9.0	
43	3.17	12.8		44	4.13	17.3	
45	4.17	19.8		46	4.54	22.3	
47	4.30	17.6		48	3.91	15.7	

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Sums of data on Row #8

Normal Vines

Reversed Vines

	1-20	21-48	Total	1-20	21-48	Total
Number of Vines	34	43	77	36	53	89
Ounces Vines	29.2	47.4	76.6	24.2	58.6	82.8
Number Pods	270	486	756	295	505	800
Ounces Pods	25.8	54.1	79.9	27.4	53.7	81.1
Number Beans	864	1836	2700	1036	1969	3005
Ounces Beans	16.9	34.4	51.3	20.4	41.1	61.5
Ounces Shucks	8.4	18.1	26.5	6.0	13.8	19.8
<u>Beans Ory</u> (Vines + Shucks) ozy	4.66	6.78	11.44	9.24	6.92	16.16
<u>Percent</u> Black Beans	12.8	20.6	33.4	2.85	4.35	7.20
Beans per ozy.	539.5	633.0	1172.5	507.4	599.2	1106.6
<u>Ozy Beans</u> Ozy Shucks	23.9	24.4	48.4	39.9	34.8	74.7
<u>Ozy Beans</u> Ozy Vines	6.51	9.64	16.15	12.55	9.28	21.83
Beans per Pod	31.46	44.66	76.12	34.31	45.56	79.87
Pods per Vine	93.3	153.7	247.0	87.8	121.6	209.4
Total Black Beans	<sup>22</sup> 28	27	<sup>49</sup> 45	25	72	97

after Drying Vines + Shucks

Ozy (Vines plus Shucks)	14.8	23.8	38.6	13.0	26.9	39.9
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Row #8 Synopsis

10 Sept 59

	Drier Vines #1-#20				Greener Vines #21-#48				Total Vines #1-#48			
	Normal		Reversed		Normal		Reversed		Normal		Reversed	
	Average of Hills Group		Average of Hills Group		Average of Hills Group		Average of Hills Group		Average of Hills Group		Average of Hills Group	
Beans per Pod	3.15	3.20	3.41	3.78	3.72	3.51	3.79	4.96	3.46	3.57	3.63	4.43
Beans per Ounce	54.0	51.1	50.7	50.8	52.8	52.6	49.9	47.9	53.3	52.1	50.3	48.9
$\frac{\text{Ounces of Beans}}{\text{Ounces of Shucks}}$	2.39	2.01	3.99	3.40	2.03	1.93	2.90	2.83	2.20	1.96	3.40	3.01
$\frac{\text{Ounces of Beans}}{\text{Ounces of Vines}}$	.65	.58	1.26	.84	.80	.74	.77	.70	.73	.68	.99	.74
$\frac{\text{Ounces of Beans}}{\text{Ounces of Vines plus Shucks}}$	.47	.45	.92	.68	.57	.53	.58	.57	.52	.50	.73	.60
Percent Black Beans	1.3	2.1	2.9	2.4	1.7	1.5	3.6	3.7	1.5	1.7	3.3	3.2

after Drying Vines + Shucks

$\frac{\text{Ounces Beans}}{\text{Ounces of Vines plus Shucks}}$	1.14	1.57	1.47	1.53	1.34	1.54
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Slope adjusted to best squares line

Beans per Pod	3.15	3.43	3.72	3.77	3.52	3.68
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15 Sept 59

Row # 8  
Synopsis Continued

	Total Vines	
	% Increase	
	Average of	
	Hills	Group
Beans per Pod	5	24
Beans per Oz. <del>Ounces of Beans</del>	-6	-6
Ounces of Shucks <del>Ounces of Beans</del>	54	54
Ounces of Vines <del>Ounces of Beans</del>	36	9
Ounces (Vines + Shucks)	40	20
Percent Black Beans	120	38
	after Drying	
<del>Ounces of Beans</del> Ounces (Vines + Shucks)		15

Row #8 Beans per Pod  
Normal Vines

11 Sept 1959  
Reversed Vines

X = Hill Number	Hill	Beans / Pods	Straighten Factor	Sum	Straighten Factor	Sum	Hill	Beans / Pods	Straighten Factor	Sum	Straighten Factor	Sum
	1	2.67	+ .42	3.09	+ .53	3.20	2	3.00	+ .46	3.46	+ .41	3.41
	3	3.00	+ .33	3.33	+ .48	3.48	4	3.06	+ .36	3.42	+ .37	3.43
	5	3.00	+ .23	3.23	+ .44	3.44	6	3.00	+ .26	3.26	+ .34	3.34
Y = 2.677 + .0468X	7	2.72	+ .14	2.86	+ .40	3.12	8	3.45	+ .15	3.60	+ .30	3.75
Y = 2.96	9	2.96	+ .05	3.01	+ .35	3.31	10	3.37	+ .05	3.42	+ .27	3.64
Least squares line	11	3.00	- .05	2.95	+ .30	3.30	12	3.51	- .05	3.46	+ .23	3.74
Y = 2.921 + .0230X	13	4.13	- .14	3.99	+ .25	4.38	14	3.55	- .15	3.90	+ .20	3.75
	15	2.82	- .23	2.59	+ .21	3.03	16	3.80	- .26	3.54	+ .16	3.96
	17	3.66	- .33	3.33	+ .16	3.82	18	3.57	- .36	3.21	+ .12	3.69
	19	3.50	- .42	3.08	+ .12	3.62	20	4.00	- .46	3.54	+ .09	4.09
	21	4.17	+ .15	4.32	+ .07	4.24	22		+ .24		+ .05	
	23	2.88	+ .13	3.01	+ .02	2.90	24	3.82	+ .21	4.03	+ .02	3.84
	25		+ .10		- .02		26	3.89	+ .17	4.06	- .02	3.87
	27	3.91	+ .08	3.99	- .07	3.84	28	3.61	+ .13	3.74	- .05	3.56
Y = 3.320 + .0116X	29	4.92	+ .06	4.98	- .12	3.80	30		+ .09		- .09	
	31	2.33	+ .03	2.36	- .16	3.17	32	3.68	+ .06	3.74	- .12	3.56
Y = 3.370 + .0166X	33	4.25	+ .01	4.26	- .21	4.04	34	3.56	+ .02	3.58	- .16	3.40
	35	2.79	- .01	2.78	- .25	2.54	36	2.73	- .02	2.71	- .20	3.53
	37		- .03		- .30		38	4.24	- .06	4.18	- .23	4.01
Least squares line	39	3.28	- .06	3.22	- .35	2.93	40	3.67	- .09	3.58	- .27	3.40
	41	4.49	- .09	4.41	- .40	4.09	42	3.78	- .13	3.65	- .30	3.48
	43	3.12	- .10	3.07	- .44	3.73	44	4.13	- .17	3.96	- .34	3.79
	45	4.17	- .13	4.04	- .48	3.69	46	4.54	- .21	4.33	- .37	4.17
	47	4.30	- .15	4.15	- .53	3.77	48	3.91	- .24	3.67	- .41	3.50