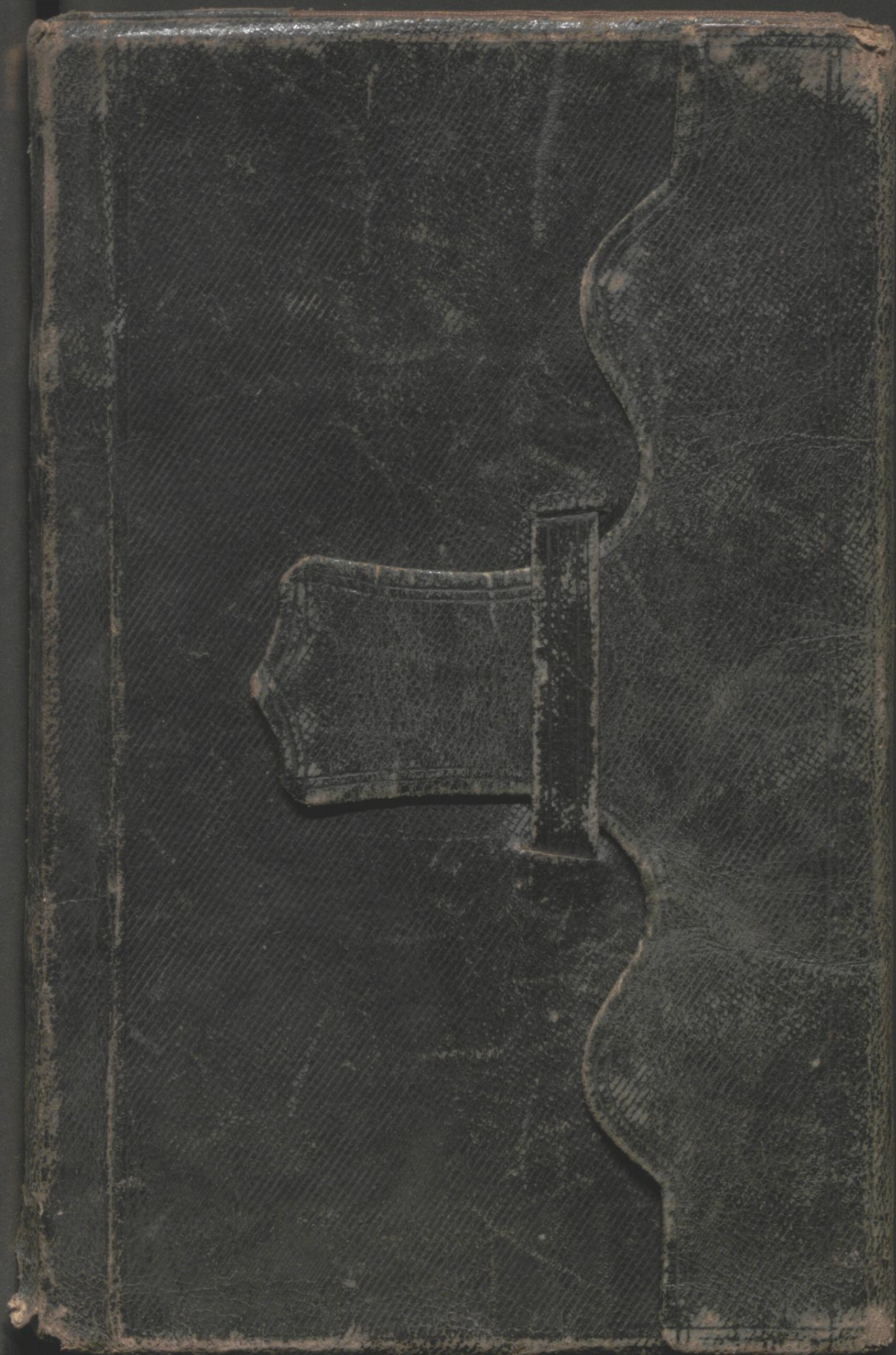








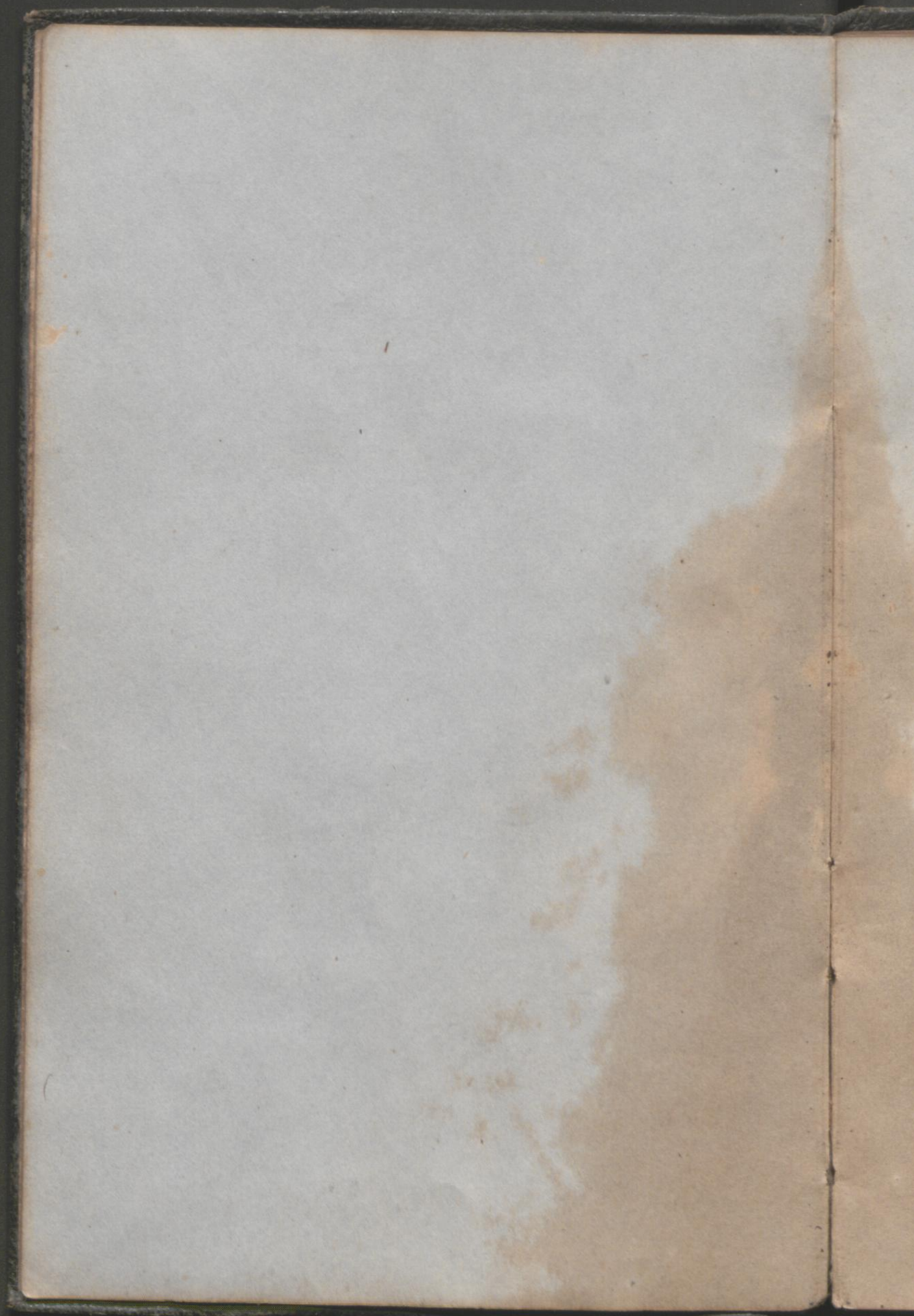


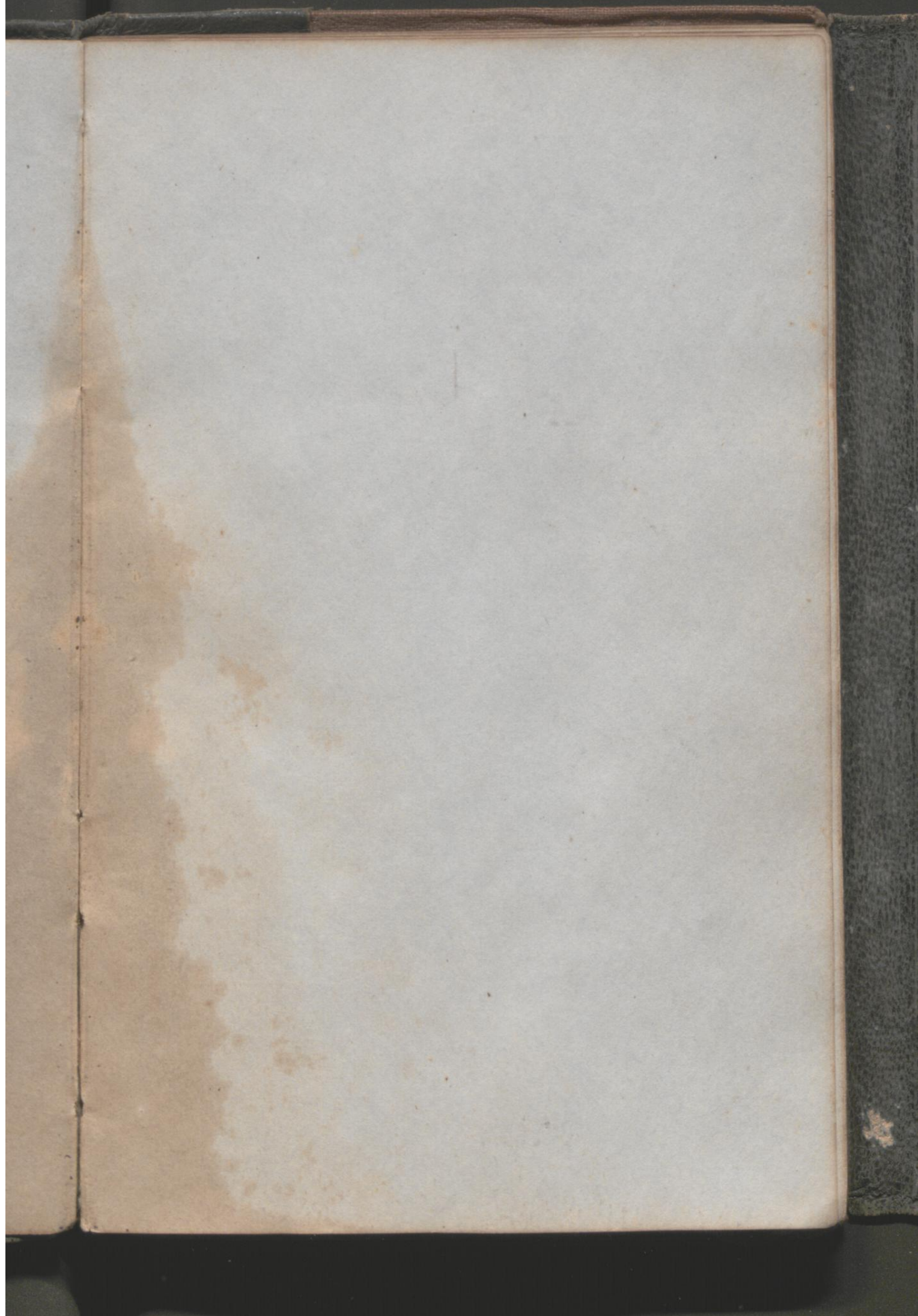


Mr. C. Horton

At & St. L. Rail Road

Apr. 18th 1857





Contents

	Page
Table of Excavation 33' base Slope 1.5 to 1	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
" " Embankment 15' base " " "	7, 8, 9, 10, 11, 12, 13
" " Excavation 20' base " " "	13 to 18
" " Embankment 14' base " " "	19 " 24
" " Excavation 36' base " " "	25 " 30
" " Embankment 26' base " " "	31 " 36
" " Excavation 18' base " " "	37 " 48
" " " 28' " " "	48 " 48
Curves, transition of, &c.	49 " 69
Terminology	72

Area of Circle = $\text{Diam}^2 \times .7854$

" " Segment - $(\text{Cho.} + \frac{1}{3} \text{ cho. of half arc})$
by height of segment $\cdot 4$ of which = area nearly
Area of an Ellipse. $\times$ the product of axis by
.7854. For the cir. apd^2 and $\times$ by the
sq of half the sum by 3.14159

Area of Parabola = $\frac{2}{3}$ prod. of base by height

" " Spherium. Multiply the dif. of the
cubes of the ends by twice the alt. and divide
the product by 3 times the dif. of their squares

Side of inscribed square = $\text{diam} \times .7071$

Tangential Dist = $\text{Rad} \times \text{Nat. Tang. } \frac{1}{2} \text{ Vertue } L$

Radius = $\text{Tangt} \times \text{Cot. } \frac{1}{2} \text{ Vertue } L$

To change origin of Curve to Centre given
 $\text{Tangt} = \text{Distance between Tangts} \div \text{Sin. of Central}$
 L

Table showing the number
in sections 100' long with a base of

	.0	.1	.2	.3	.4
0		3.2	16.5	24.9	33.4
1	87.0	96.3	105.7	115.3	124.9
2	185.1	196.5	206.1	216.8	227.5
3	294.4	305.9	317.6	329.4	341.2
4	414.8	427.4	440.3	453.0	466.0
5	546.3	560.0	573.9	587.5	602.0
6	688.8	703.7	718.7	733.8	749.0
7	842.5	858.5	874.6	890.8	907.1
8	1017.4	1024.5	1041.7	1059.0	1076.4
9	1183.5	1211.5	1219.8	1238.2	1256.8
10	1370.3	1389.6	1409.1	1428.6	1448.3
11	1568.5	1588.9	1609.4	1630.1	1650.8
12	1777.7	1799.2	1820.9	1842.7	1864.6
13	1998.0	2020.7	2043.5	2066.4	2089.4
14	2229.5	2253.5	2277.2	2300.6	2323.5
15	2472.0	2497.0	2522.0	2547.1	2572.3
16	2725.9	2750.9	2778.0	2804.8	2830.0
17	2990.7	3017.8	3045.0	3072.3	3099.7
18	3266.6	3294.8	3323.1	3351.6	3380.1
19	3553.5	3583.0	3612.4	3641.7	3671.0
20	3851.7	3882.2	3912.8	3943.4	3974.2
21	4161.1	4192.9	4224.2	4256.0	4287.9
22	4481.4	4514.1	4546.8	4579.7	4612.7

of cubic yds. excavation contained
22' and slope of 1 1/2 to 1 - Ditches not included

	.5	.6	.7	.8	.9
	421	50.8	59.7	68.7	77.8
	134.7	144.5	154.5	164.6	174.8
	238.4	249.4	260.5	271.7	283.1
	353.2	365.3	377.5	389.8	402.3
	479.1	492.3	505.7	519.1	532.6
	616.8	630.5	644.9	659.4	674.1
	764.3	779.7	795.3	810.9	826.7
	923.6	940.1	956.7	973.5	990.4
	1093.9	1111.6	1129.3	1147.3	1165.2
	1275.4	1294.2	1313.0	1332.0	1351.5
	1468.0	1487.9	1507.9	1528.0	1548.1
	1676.7	1698.7	1713.8	1735.0	1756.3
	1886.5	1908.6	1930.8	1955.1	1975.9
	2112.5	2135.7	2159.0	2182.4	2205.9
	2349.5	2373.8	2398.2	2422.8	2447.4
	2597.6	2623.1	2648.6	2674.2	2700.0
	2856.9	2883.4	2910.1	2936.7	2964.5
	3127.1	3154.9	3182.7	3210.6	3238.5
	3408.7	3437.5	3464.4	3495.4	3524.7
	3701.3	3731.2	3761.2	3791.0	3821.5
	4005.0	4036.0	4067.0	4098.3	4129.9
	4319.9	4352.0	4384.2	4416.5	4448.9
	4645.8	4679.0	4713.3	4745.7	4779.3

Elevation. S. B. and

	.0	.1	.2	.3	.4
23	4812.9	4846.7	4880.5	4914.3	4948.1
24	5155.5	5190.4	5225.4	5260.5	5295.7
25	5507.2	5542.2	5581.3	5617.5	5653.8
26	5874.0	5911.1	5948.3	5985.6	6023.1
27	6250.0	6288.2	6326.5	6364.9	6403.4
28	6637.0	6676.3	6715.1	6753.4	6791.9
29	7035.1	7075.6	7116.1	7156.7	7197.5
30	7444.4	7485.9	7527.2	7569.3	7611.3
31	7864.7	7907.4	7950.2	7993.0	8036.0
32	8296.2	8340.0	8383.8	8427.4	8472.0
33	8738.8	8783.7	8828.7	8873.8	8919.0
34	9192.5	9238.5	9284.6	9330.8	9377.1
35	9657.4	9704.5	9751.7	9799.0	9846.4
36	10133.3	10181.5	10229.8	10278.2	10326.8
37	10620.3	10669.6	10719.1	10768.6	10818.2
38	11118.4	11168.9	11219.4	11270.1	11320.8
39	11627.7	11679.3	11730.8	11782.6	11834.5
40	12148.1	12200.7	12253.5	12306.4	12359.3
41	12679.6	12733.3	12787.2	12841.2	12895.3
42	13233.2	13287.0	13339.0	13387.0	13442.3
43	13775.7	13831.9	13888.0	13944.2	14000.5
44	14340.0	14397.8	14455.0	14512.3	14569.7
45	14916.6	14974.9	15033.2	15091.6	15150.1
46	15503.7	15563.0	15622.4	15682.0	15741.6

Slope 1.5 to 1. Continued

	.5	.6	.7	.8	.9
47	4982.8	5017.1	5051.6	5086.1	5120.7
48	5331.0	5366.4	5401.9	5437.6	5473.3
49	5690.2	5726.8	5763.4	5800.2	5837.0
50	6060.6	6098.2	6136.0	6173.9	6211.9
51	6442.1	6480.8	6519.7	6558.7	6597.8
52	6834.7	6874.5	6914.5	6954.6	6994.8
53	7238.4	7279.4	7320.5	7361.7	7403.0
54	7653.2	7695.3	7737.5	7779.8	7822.3
55	8079.1	8122.3	8165.6	8209.1	8252.6
56	8516.2	8560.4	8604.9	8649.4	8694.1
57	8964.3	9009.7	9055.3	9100.0	9146.7
58	9423.6	9470.1	9516.7	9563.5	9610.7
59	9893.9	9941.5	9989.3	10037.2	10085.2
60	10375.4	10424.2	10473.0	10522.0	10571.0
61	10868.0	10917.9	10967.9	11018.0	11068.3
62	11371.7	11422.7	11473.8	11525.0	11576.3
63	11886.5	11938.6	11987.1	12043.1	12095.6
64	12413.5	12465.0	12519.0	12572.4	12625.7
65	12949.5	13003.8	13058.6	13113.7	13167.4
66	13497.6	13553.1	13608.6	13664.2	13720.0
67	14056.9	14113.4	14170.1	14226.8	14282.6
68	14627.3	14684.9	14742.7	14800.0	14858.7
69	15208.8	15267.6	15326.4	15385.4	15444.5
70	15801.4	15861.3	15921.2	15981.3	16041.5

Excavation: 20' Base and

	0	1	2	3	4
47	16101.9	16162.3	16222.8	16283.5	16344.5
48	16711.1	16772.6	16834.3	16896.1	16957.9
49	17331.5	17394.1	17456.1	17519.8	17582.7
50	17963.0	18026.7	18090.6	18154.6	18218.7
51	18605.6	18670.4	18735.4	18800.5	18865.7
52	19357.3	19395.2	19391.3	19457.5	19523.9
53	19924.1	19991.2	20058.4	20125.7	20193.1
54	20600.0	20668.2	20736.5	20804.9	20873.5
55	21287.0	21356.4	21425.8	21495.3	21565.0
56	21985.2	22055.6	22126.1	22196.8	22267.6
57	22694.4	22766.0	22837.6	22909.4	22981.1
58	23414.8	23487.5	23560.2	23633.1	23706.1
59	24146.3	24220.1	24293.9	24367.9	24442.0
60	24885.9	24963.8	25038.7	25113.8	25189.0
61	25642.6	25718.6	25794.7	25870.9	25947.2
62	26407.4	26484.5	26561.7	26639.0	26716.4
63	27183.3	27262.5	27332.9	27418.3	27496.8
64					
65					
66					
67					
68					
69					
70					

Slope 15 to 1: Continued

	5	6	7	8	9
	16405.1	16466.1	16527.2	16588.4	16649.7
	17019.9	17082.0	17144.3	17206.5	17268.9
	17645.8	17709.0	17772.3	17835.8	17899.3
	18282.9	18347.2	18411.6	18476.1	18540.8
	18931.0	18996.4	19062.0	19127.6	19193.4
	19590.3	19656.8	19723.5	19790.2	19857.1
	20260.6	20328.3	20396.1	20463.9	20531.9
	20942.1	21010.9	21079.5	21148.7	21217.8
	21634.7	21704.6	21774.6	21844.7	21914.9
	22338.4	22407.4	22480.5	22551.7	22623.0
	23052.2	23125.3	23197.5	23269.9	23342.3
	23777.2	23852.4	23925.7	23999.1	24072.6
	24516.2	24590.5	24664.9	24739.5	24814.1
	25264.4	25339.8	25415.3	25491.0	25566.7
	26023.6	26100.1	26176.8	26253.6	26330.4
	26794.0	26871.6	26949.4	27027.3	27105.2
	27575.5	27654.2	27733.1	27812.1	27891.2

Table showing the number of cubic
feet 100' long with a slope 1.5 to 1 and

Var. Embankment contained in sec-
15' rise in top

	0	1	2	3	4
0		5.6	11.3	17.1	23.1
1	61.1	67.8	74.6	81.6	88.6
2	133.3	141.1	149.1	157.1	165.3
3	216.0	225.0	234.6	243.8	253.1
4	311.1	321.1	331.3	341.6	352.0
5	416.6	427.8	439.1	450.5	462.0
6	533.3	545.6	558.0	570.5	583.1
7	661.1	674.5	688.0	701.6	715.0
8	800.0	814.5	829.1	843.8	858.6
9	950.5	965.6	980.3	997.1	1013.1
10	1111.1	1127.8	1144.6	1161.6	1178.6
11	1283.3	1301.1	1319.1	1337.1	1355.3
12	1466.6	1485.6	1504.6	1523.8	1543.1
13	1661.1	1681.1	1703.1	1721.6	1742.0
14	1866.6	1887.8	1909.1	1930.5	1952.0
15	2083.3	2106.6	2128.0	2150.5	2173.1
16	2311.1	2334.5	2358.0	2381.6	2405.3
17	2550.0	2574.5	2599.1	2623.8	2648.6
18	2800.0	2825.6	2851.3	2877.1	2903.1
19	3061.1	3087.8	3114.6	3141.6	3168.6
20	3333.3	3361.1	3389.1	3417.1	3445.0
21	3616.6	3645.6	3674.6	3703.8	3733.1
22	3911.1	3941.1	3971.3	4001.6	4032.0

	5	6	7	8	9
	29.1	35.3	41.6	48.0	54.5
	95.8	103.1	110.5	118.0	125.6
	173.6	182.0	190.5	199.8	207.8
	263.5	272.0	281.6	291.3	301.1
	362.5	373.1	383.8	394.6	405.6
	473.6	485.3	497.1	509.1	521.1
	595.8	608.6	621.6	634.6	647.8
	729.1	743.1	757.1	771.3	785.6
	873.6	888.6	903.8	919.1	934.5
	1029.1	1045.3	1061.6	1078.0	1094.5
	1195.8	1213.1	1230.5	1248.0	1265.6
	1373.6	1392.0	1410.5	1429.1	1447.8
	1562.5	1582.0	1601.6	1621.3	1641.1
	1762.5	1783.1	1803.8	1824.6	1845.6
	1973.6	1995.3	2017.1	2039.1	2061.1
	2195.8	2218.7	2241.6	2264.6	2287.8
	2429.1	2453.1	2477.1	2501.3	2525.6
	2673.6	2698.6	2723.8	2749.1	2774.5
	2929.1	2955.3	2981.6	3008.0	3034.5
	3195.8	3223.1	3250.5	3278.0	3305.6
	3473.6	3502.0	3530.5	3559.1	3587.8
	3762.5	3792.0	3821.6	3851.3	3881.1
	4062.5	4093.1	4123.1	4154.6	4185.6

Embankment 15' Road Bed

	0	1	2	3	4
23	4216.6	4247.8	4279.1	4310.5	4342.0
24	4533.3	4565.6	4598.0	4630.5	4663.1
25	4861.1	4894.5	4928.0	4961.7	4995.3
26	5200.0	5234.5	5269.1	5303.8	5338.6
27	5550.0	5585.6	5621.3	5657.1	5693.1
28	5911.1	5947.8	5984.6	6021.4	6058.6
29	6283.3	6321.1	6359.1	6397.4	6435.3
30	6666.6	6705.6	6744.6	6783.8	6823.1
31	7061.1	7101.1	7141.3	7181.6	7223.0
32	7466.6	7507.8	7549.1	7590.5	7632.0
33	7883.3	7925.6	7968.0	8010.5	8053.1
34	8311.1	8354.5	8398.0	8441.6	8485.3
35	8750.0	8794.7	8839.1	8883.8	8928.6
36	9200.0	9245.6	9291.3	9337.1	9383.1
37	9661.1	9707.8	9754.6	9801.6	9848.6
38	10133.3	10181.1	10229.1	10277.1	10325.3
39	10616.6	10665.6	10714.6	10763.8	10813.1
40	11111.1	11161.1	11211.3	11261.6	11312.0
41	11616.6	11667.8	11719.0	11770.5	11822.0
42	12133.3	12185.6	12238.0	12290.5	12343.1
43	12661.1	12714.5	12768.0	12821.6	12875.3
44	13200.0	13254.5	13309.1	13363.8	13418.6
45	13750.0	13806.5	13861.3	13917.2	13973.1
46	14311.1	14367.8	14424.7	14481.6	14538.7

and Slope 1.5 to 1

	5	6	7	8	9
4573.6	4405.3	4437.1	4469.1	4501.1	
4695.8	4728.6	4761.6	4794.6	4827.8	
5029.1	5063.1	5097.1	5131.3	5165.6	
5373.6	5408.6	5443.8	5479.1	5514.6	
5729.1	5765.3	5801.6	5838.0	5874.5	
6095.8	6133.1	6170.5	6208.0	6245.6	
6473.6	6512.0	6550.5	6589.1	6627.8	
6862.5	6902.0	6941.6	6981.3	7021.1	
7262.5	7303.1	7343.8	7384.6	7425.6	
7673.6	7715.3	7757.1	7799.1	7841.1	
8095.8	8138.6	8181.6	8224.6	8267.8	
8529.1	8573.1	8617.1	8661.3	8705.6	
8973.6	9018.6	9063.8	9109.1	9154.5	
9429.1	9475.3	9521.6	9568.0	9614.5	
9895.8	9943.1	9990.5	10038.0	10085.6	
10373.6	10422.0	10470.5	10519.1	10567.8	
10862.5	10912.0	10961.6	11011.3	11061.1	
11362.5	11413.1	11463.8	11514.6	11566.7	
11873.1	11925.3	11971.1	12025.4	12081.1	
12395.8	12448.6	12501.6	12554.6	12607.1	
12929.1	12983.1	13037.1	13091.3	13145.6	
13473.6	13528.6	13583.8	13639.1	13694.5	
14029.2	14085.3	14141.6	14198.0	14254.5	
14595.8	14653.1	14710.5	14768.0	14825.6	

Embankment: 15' Road Bed

	.0	.1	.2	.3	.4
47	14883.3	14941.2	14999.1	15057.2	15115.3
48	15466.7	15525.6	15584.7	15643.8	15703.1
49	16061.1	16121.3	16181.3	16241.6	16302.0
50	16666.7	16727.8	16789.1	16850.5	16912.0
51	17283.3	17345.6	17408.0	17470.5	17533.1
52	17911.1	17974.5	18038.0	18101.6	18165.3
53	18550.0	18614.5	18679.1	18743.8	18808.7
54	19200.0	19265.6	19331.3	19397.2	19463.1
55	19861.1	19927.8	19994.7	20061.6	20128.7
56	20533.3	20601.2	20669.1	20737.2	20805.3
57	21216.7	21285.6	21354.7	21423.8	21493.1
58	21911.1	21981.3	22051.3	22121.6	22193.0
59	22616.7	22687.8	22759.1	22830.5	22902.0
60	23333.3	23405.6	23478.0	23550.5	23623.1
61	24061.1	24134.5	24208.0	24281.6	24355.3
62	24800.1	24874.5	24949.1	25023.8	25098.7
63	25550.0	25625.6	25701.3	25777.2	25853.1
64					
65					
66					
67					
68					
69					
70					

and Slope 1.5 to 1

	.5	.6	.7	.8	.9
15173.6	15232.0	15290.5	15349.1	15407.8	
15763.5	15822.0	15881.6	15941.3	16001.2	
16362.5	16423.1	16483.8	16544.7	16605.6	
16973.6	17035.3	17097.2	17159.1	17221.2	
17575.8	17638.7	17701.6	17764.7	17827.8	
18229.2	18293.1	18357.3	18421.3	18485.6	
18873.6	18938.7	19003.8	19069.1	19134.5	
19529.2	19595.3	19661.6	19728.0	19794.5	
20195.8	20263.1	20330.5	20398.0	20465.6	
20873.6	20942.0	21010.5	21079.1	21147.8	
21562.5	21632.0	21701.6	21771.3	21841.2	
22262.5	22333.1	22403.8	22474.7	22545.6	
22973.6	23045.3	23117.2	23189.1	23261.2	
23695.8	23768.7	23841.6	23914.7	23987.8	
24429.3	24503.1	24577.2	24651.3	24725.6	
25173.6	25248.7	25323.8	25399.1	25474.5	
25929.2	26005.3	26081.6	26158.0	26234.5	

Table showing the No. Cubic Yds.
100' long, base 20'. Slope 15 to 1

	0	1	2	3	4
0	0.0	7.5	14.5	22.5	30.5
1	79.7	88.1	96.9	105.6	114.6
2	170.3	180.1	189.8	199.8	209.7
3	272.2	283.0	293.9	305.0	316.0
4	385.1	397.1	409.1	421.3	433.4
5	509.2	522.3	535.4	548.7	561.9
6	644.4	658.6	672.8	687.2	701.6
7	790.7	806.0	821.3	836.8	852.3
8	948.1	964.5	980.9	997.8	1014.2
9	1116.6	1134.1	1151.6	1169.4	1187.1
10	1296.2	1314.9	1333.5	1352.4	1371.3
11	1487.0	1506.8	1526.5	1546.4	1566.4
12	1688.8	1709.7	1730.5	1751.7	1772.8
13	1901.8	1923.8	1945.7	1968.0	1990.1
14	2125.9	2149.0	2172.0	2195.4	2218.7
15	2361.1	2385.3	2409.4	2433.9	2458.2
16	2607.4	2632.7	2657.9	2683.5	2709.1
17	2864.8	2891.2	2917.6	2944.3	2970.8
18	3133.3	3160.8	3188.3	3216.1	3243.8
19	3412.9	3441.6	3460.2	3499.0	3527.9
20	3703.6	3733.4	3763.1	3793.1	3823.1
21	4005.5	4036.4	4067.2	4098.3	4129.4
22	4328.5	4350.5	4382.4	4414.6	4446.8

Excavation contained in sections
Ditches not included

	5	6	7	8	9
	38.5	46.4	54.6	62.8	71.2
	123.6	132.8	141.9	150.4	160.7
	220.0	230.1	240.5	250.9	267.6
	327.4	338.6	350.1	361.6	373.4
	445.9	458.2	470.9	483.5	496.4
	575.5	589.0	602.8	616.5	630.5
	716.3	730.8	745.7	760.5	775.7
	868.1	883.8	899.8	915.7	932.0
	1031.0	1047.1	1065.0	1082.0	1099.4
	1205.1	1223.1	1249.3	1259.4	1277.9
	1390.2	1409.5	1428.8	1448.0	1467.5
	1586.6	1606.8	1627.2	1647.6	1668.2
	1794.0	1815.3	1836.8	1858.3	1880.1
	2012.5	2034.9	2057.6	2080.2	2103.0
	2242.2	2265.7	2289.4	2313.1	2337.1
	2482.9	2507.5	2532.4	2557.3	2582.3
	2734.8	2760.5	2786.5	2812.4	2838.6
	2997.7	3024.5	3051.7	3078.7	3106.0
	3271.8	3299.7	3328.0	3356.1	3384.5
	3557.0	3586.0	3615.4	3644.6	3674.2
	3853.3	3883.4	3913.9	3944.2	3974.9
	4160.7	4191.9	4223.5	4255.0	4286.8
	4479.2	4511.6	4544.3	4576.8	4609.7

Excavation, base 20'

	0	1	2	3	4
23	4642.5	4675.7	4708.7	4742.0	4775.3
24	4977.7	5012.0	5046.1	5080.5	5114.9
25	5324.0	5359.4	5394.6	5430.1	5465.6
26	5681.4	5717.9	5754.2	5790.9	5827.5
27	6049.9	6087.5	6125.0	6162.8	6200.5
28	6429.6	6468.3	6506.8	6545.7	6584.5
29	6820.3	6860.1	6899.8	6939.8	6979.7
30	7222.2	7263.0	7303.9	7345.0	7386.0
31	7635.1	7677.1	7719.2	7761.3	7803.4
32	8059.2	8102.3	8145.4	8188.7	8231.9
33	8494.4	8538.6	8582.8	8627.2	8671.6
34	8940.7	8986.0	9031.3	9076.8	9122.3
35	9398.1	9444.5	9490.9	9537.6	9584.1
36	9866.6	9914.2	9961.6	10009.4	10057.3
37	10346.2	10394.9	10443.5	10492.4	10541.2
38	10837.0	10886.8	10936.5	10986.5	11036.4
39	11338.8	11389.7	11440.5	11491.7	11542.7
40	11851.8	11903.8	11955.7	12008.0	12060.1
41	12375.8	12429.0	12482.0	12535.4	12588.6
42	12911.1	12965.3	13019.4	13073.9	13128.2
43	13457.4	13512.7	13567.9	13623.5	13679.0
44	14014.8	14071.2	14127.6	14184.3	14240.8
45	14583.3	14640.8	14698.3	14756.1	14813.8
46	15162.9	15241.6	15280.2	15339.1	15397.9

Slope 1.5' to 1'

	5	6	7	8	9
	4808.8	4842.3	4876.1	4909.8	4943.8
	5149.6	5184.2	5219.1	5253.9	5289.0
	5501.4	5537.1	5573.1	5609.1	5645.3
	5864.4	5901.2	5938.3	5975.4	6012.7
	6237.5	6276.4	6314.6	6352.8	6391.2
	6623.7	6662.7	6702.0	6741.3	6780.8
	7020.0	7060.2	7100.4	7140.9	7181.6
	7427.4	7468.6	7510.2	7551.6	7593.4
	7845.9	7888.2	7930.9	7973.5	8016.4
	8275.5	8319.0	8362.8	8406.5	8450.5
	8716.3	8760.9	8805.6	8850.5	8895.7
	9168.1	9213.8	9259.8	9305.7	9352.0
	9631.9	9677.9	9725.0	9771.1	9819.4
	10105.1	10153.1	10201.3	10249.4	10297.9
	10590.3	10639.5	10688.7	10737.9	10787.5
	11086.6	11136.8	11187.2	11237.6	11288.3
	11594.0	11645.3	11696.8	11748.3	11800.1
	12112.5	12165.0	12217.6	12270.1	12323.1
	12642.2	12695.6	12749.4	12803.1	12857.1
	13182.9	13237.5	13292.4	13347.2	13402.3
	13734.8	13790.5	13846.5	13902.4	13958.6
	14297.6	14354.5	14411.7	14468.7	14526.0
	14871.8	14929.7	14988.0	15046.1	15104.5
	15457.0	15516.0	15575.4	15634.6	15694.2

Excavation - Bal 20'

	0	1	2	3	4
47	15753.6	15813.4	15873.1	15933.1	15993.1
48	16335.5	16416.4	16477.2	16538.3	16599.4
49	16968.5	17030.5	17092.4	17154.6	17216.8
50	17592.5	17655.7	17718.7	17782.0	17845.3
51	18227.7	18293.0	18356.1	18420.6	18485.4
52	18874.0	18939.4	19004.6	19070.2	19135.7
53	19531.4	19597.9	19664.2	19731.0	19797.7
54	20250.0	20316.5	20383.0	20449.8	20516.5
55	20877.6	20948.3	21016.8	21085.7	21154.5
56	21570.3	21640.1	21709.8	21779.8	21849.7
57	22273.2	22343.1	22413.9	22485.0	22556.0
58	22985.1	23057.1	23129.1	23201.3	23273.4
59	23709.2	23782.3	23855.4	23928.7	24002.0
60	24444.4	24518.6	24592.8	24667.2	24741.6
61	25190.7	25266.0	25341.3	25416.8	25492.3
62	25948.1	26024.6	26101.9	26177.6	26254.2
63	26716.6	26784.2	26851.7	26919.4	27027.1

64

Slope 1.5 to 1

	5	6	7	8	9
	16053.2	16113.4	16173.9	16234.2	16294.9
	16660.7	16721.9	16783.5	16845.0	16906.8
	17279.2	17341.6	17404.3	17466.8	17529.7
	17908.8	17972.3	18036.1	18099.8	18163.8
	18549.6	18614.2	18679.1	18743.9	18809.0
	19201.4	19267.1	19333.1	19399.1	19465.3
	19864.4	19931.2	19998.5	20065.4	20132.7
	20538.5	20606.4	20674.6	20742.8	20811.3
	21223.7	21292.8	21362.0	21431.3	21500.8
	21920.0	21990.1	22060.6	22130.9	22201.6
	22627.4	22698.6	22770.2	22841.7	22913.4
	23345.9	23418.3	23490.9	23563.5	23636.4
	24075.5	24149.0	24222.8	24296.5	24370.5
	24816.3	24890.8	24965.7	25040.5	25115.7
	25568.1	25643.8	25719.8	25795.7	25873.0
	26331.1	26407.9	26485.1	26562.1	26639.4
	27115.1	27183.2	27261.3	27339.4	27417.9

Table showing the No. Cubic
road bed 14' and slope 1.5 to 1

	0	1	2	3	4
0	0.0	5.2	10.6	16.0	21.6
1	57.4	63.8	70.2	76.8	83.5
2	125.9	133.4	141.0	148.7	156.4
3	205.6	214.1	222.8	231.6	240.5
4	296.3	306.0	315.8	325.7	335.7
5	398.1	408.9	419.8	430.9	442.0
6	511.1	523.0	535.0	547.2	559.4
7	635.2	648.2	661.3	674.6	687.9
8	770.4	784.5	798.7	813.1	827.6
9	916.7	931.9	947.3	962.7	978.3
10	1074.0	1090.4	1106.9	1123.5	1140.1
11	1242.6	1260.0	1277.6	1295.3	1313.1
12	1422.2	1440.8	1459.5	1478.3	1497.2
13	1613.0	1632.6	1652.4	1672.3	1692.4
14	1814.8	1835.6	1856.5	1877.5	1898.7
15	2027.8	2049.7	2071.7	2093.8	2116.1
16	2251.8	2274.9	2298.0	2321.3	2344.6
17	2487.0	2511.2	2535.4	2559.8	2584.2
18	2733.3	2758.6	2783.9	2809.4	2835.0
19	2990.7	3017.1	3043.6	3070.1	3096.8
20	3259.3	3286.7	3314.3	3342.0	3369.8
21	3538.9	3567.5	3596.1	3624.9	3653.8
22	3829.6	3859.3	3889.1	3919.0	3949.0

Gas. contain'd in sections 100' long
at 33° 42' - Embankment

	5	6	7	8	9
	27.3	33.1	39.0	45.0	51.2
	90.3	97.2	104.2	111.3	118.6
	164.3	172.4	180.5	188.7	197.1
	249.5	258.7	267.9	277.3	286.7
	345.8	356.1	366.4	376.9	387.5
	453.2	464.6	476.0	487.6	499.3
	571.8	584.2	596.8	609.8	623.3
	701.4	715.0	728.6	742.6	756.3
	842.1	856.8	871.6	886.5	901.5
	994.0	1009.8	1025.7	1041.7	1057.8
	1156.9	1173.8	1190.9	1208.2	1225.2
	1331.0	1349.0	1367.2	1385.4	1403.5
	1516.2	1535.3	1554.6	1573.9	1593.4
	1713.5	1732.7	1753.1	1773.6	1794.2
	1919.9	1941.3	1962.7	1984.3	2006.0
	2138.4	2160.9	2183.5	2206.1	2228.9
	2368.0	2391.6	2415.3	2439.1	2463.0
	2608.8	2633.5	2658.3	2683.2	2708.2
	2860.6	2886.4	2912.3	2938.4	2964.5
	3123.6	3150.5	3177.5	3204.7	3231.9
	3397.7	3425.7	3453.8	3482.1	3510.4
	3682.9	3712.0	3741.2	3770.6	3800.0
	3977.2	4009.4	4039.8	4070.2	4100.8

Embankment - 14' Road -

bed - Slope 1.5 to 1

	0	1	2	3	4
23	4131.5	4162.3	4193.2	4224.2	4255.3
24	4444.4	4476.3	4508.4	4540.5	4572.7
25	4768.5	4801.5	4834.7	4867.9	4901.3
26	5103.7	5137.8	5172.1	5206.4	5240.9
27	5450.0	5485.2	5520.6	5556.1	5591.6
28	5807.4	5843.8	5880.2	5916.8	5953.5
29	6175.9	6213.4	6251.0	6288.6	6326.4
30	6555.5	6594.1	6632.8	6671.6	6710.5
31	6946.3	6986.0	7025.8	7065.7	7105.7
32	7348.1	7388.9	7429.8	7470.9	7512.0
33	7761.1	7803.0	7845.0	7887.9	7929.4
34	8185.2	8228.3	8271.3	8314.6	8357.9
35	8620.4	8664.5	8708.7	8753.1	8797.5
36	9066.7	9111.9	9157.3	9202.7	9248.3
37	9524.1	9570.4	9616.9	9663.5	9710.1
38	9992.6	10040.0	10087.6	10135.3	10183.1
39	10472.2	10520.8	10569.5	10618.3	10667.2
40	10963.0	11012.6	11062.4	11112.3	11162.4
41	11464.8	11515.6	11566.5	11617.5	11668.7
42	11977.7	12029.7	12081.7	12133.8	12186.1
43	12501.8	12554.9	12608.0	12661.2	12714.6
44	13037.0	13091.2	13145.4	13199.8	13254.2
45	13583.3	13638.6	13693.9	13749.4	13805.0
46	14140.7	14197.1	14253.5	14310.1	14366.8

	5	6	7	8	9
4286.6	4317.9	4349.4	4381.0	4412.6	
4605.1	4637.6	4670.1	4702.8	4735.6	
4934.7	4968.3	5002.0	5035.8	5069.7	
5275.5	5310.1	5344.9	5379.8	5414.9	
5627.3	5663.1	5699.4	5735.0	5771.2	
5990.3	6027.2	6064.2	6101.3	6138.6	
6364.3	6402.4	6440.5	6478.7	6517.1	
6749.5	6788.7	6827.9	6867.3	6906.7	
7145.8	7186.1	7226.4	7266.9	7307.5	
7553.2	7594.6	7636.1	7677.6	7719.3	
7971.8	8014.2	8056.8	8099.5	8142.3	
8401.4	8445.0	8488.6	8532.4	8576.6	
8842.1	8886.8	8931.6	8976.5	9021.5	
9294.0	9339.8	9385.7	9431.7	9477.8	
9756.9	9803.8	9850.9	9898.0	9945.2	
10231.0	10279.0	10327.2	10375.4	10423.8	
10716.2	10765.3	10814.6	10863.9	10913.4	
11212.5	11262.7	11313.1	11363.6	11414.1	
11719.9	11771.3	11822.7	11874.3	11926.0	
12235.4	12290.9	12343.5	12396.1	12448.9	
12768.1	12821.6	12875.3	12929.1	12983.0	
13308.8	13363.5	13418.3	13473.2	13528.2	
13860.6	13916.4	13972.3	14028.4	14084.6	
14423.6	14480.5	14537.5	14594.7	14651.9	

Embankment - 14' Road -

	0	.1	.2	.3	.4
47	14709.3	14766.7	14824.3	14882.0	14939.8
48	15288.9	15347.5	15406.1	15464.9	15523.8
49	15879.6	15939.3	15999.1	16059.0	16119.0
50	16481.5	16542.3	16603.2	16664.2	16725.3
51	17094.4	17156.4	17218.4	17280.5	17342.7
52	17718.5	17781.5	17844.7	17907.9	17971.3
53	18353.8	18417.9	18482.2	18546.5	18611.0
54	19000.0	19065.2	19130.6	19196.0	19261.6
55	19657.4	19723.8	19790.2	19856.8	19923.5
56	20326.0	20393.4	20460.9	20528.6	20596.4
57	21005.6	21074.1	21142.8	21211.6	21280.5
58	21662.7	21731.9	21801.7	21871.6	21941.7
59	22398.1	22468.9	22539.8	22610.9	22682.0
60	23111.1	23183.0	23255.0	23327.2	23399.4
61	23835.2	23908.2	23981.3	24054.6	24127.9
62	24570.4	24644.5	24718.7	24793.1	24867.5
63	25316.7	25391.9	25467.3	25542.7	25618.3

Sea - Slope 1.5 to 1

	.5	.6	.7	.8	.9
14997.7	15055.7	15113.8	15172.1	15230.4	
15582.9	15642.0	15701.2	15760.6	15820.1	
16179.2	16249.4	16319.8	16390.3	16460.8	
16786.6	16847.9	16909.4	16971.0	17032.6	
17405.1	17467.6	17530.1	17592.8	17655.6	
18034.7	18098.3	18162.0	18225.8	18289.7	
18675.6	18740.3	18805.6	18869.9	18934.9	
19327.3	19393.1	19459.0	19525.0	19591.1	
19990.3	20067.2	20144.2	20221.3	20298.6	
20664.3	20739.3	20810.5	20886.7	20963.1	
21349.5	21418.6	21487.9	21557.2	21626.7	
22045.8	22116.0	22186.4	22256.8	22327.4	
22753.2	22824.6	22896.0	22967.6	23039.3	
23471.7	23544.2	23616.8	23689.5	23762.2	
24201.4	24274.9	24348.6	24422.4	24496.3	
24942.1	25016.8	25091.6	25166.5	25241.5	
25694.0	25769.8	25845.7	25921.7	25997.8	

Table Showing the No. Cubic
Feet 100' Long - 36' Roadway and

	0	1	2	3	4
0		31.4	44.9	58.6	72.3
1	156.9	174.4	186.1	202.8	215.6
2	306.9	322.6	338.3	354.1	370.1
3	468.0	484.3	501.6	518.6	535.6
4	640.3	658.1	676.1	694.1	712.3
5	823.6	843.6	861.6	880.8	900.1
6	1018.1	1038.1	1058.3	1078.6	1098.9
7	1223.6	1244.8	1266.1	1287.4	1308.9
8	1440.3	1462.6	1484.9	1507.4	1530.1
9	1668.1	1691.4	1714.9	1738.6	1762.3
10	1906.9	1931.4	1956.1	1980.8	2005.6
11	2156.9	2182.6	2208.3	2234.1	2260.1
12	2418.1	2444.8	2471.6	2498.6	2525.6
13	2690.3	2718.1	2746.1	2774.1	2802.3
14	2973.6	3002.6	3031.6	3060.8	3090.1
15	3268.1	3298.1	3328.3	3358.6	3388.9
16	3573.6	3604.8	3636.1	3667.4	3698.9
17	3890.3	3922.6	3954.9	3987.4	4020.1
18	4218.1	4251.4	4284.9	4318.6	4352.3
19	4556.9	4591.4	4626.1	4660.8	4695.6
20	4906.9	4942.6	4978.3	5014.1	5050.1
21	5268.1	5304.8	5341.6	5378.6	5415.6
22	5640.3	5678.1	5716.1	5754.1	5792.3

Gas. Excavation contained in sec-
Slope 15 to 1 - Ditches 18.056 Gas pr. 100'

	5	6	7	8	9
	86.1	100.1	114.1	128.3	142.6
	230.6	245.6	260.8	275.1	291.4
	386.1	402.3	418.6	434.9	451.4
	552.8	570.1	587.4	604.9	622.6
	730.6	748.9	767.4	786.1	804.8
	919.4	938.9	958.6	978.3	998.1
	1119.4	1140.1	1160.8	1181.6	1202.6
	1330.6	1352.3	1375.4	1396.1	1418.1
	1552.8	1575.6	1598.6	1621.6	1644.8
	1786.1	1810.1	1834.1	1858.3	1882.6
	2030.6	2055.6	2080.8	2106.1	2131.4
	2286.1	2312.3	2338.6	2364.9	2391.4
	2552.8	2580.1	2607.4	2634.9	2662.6
	2830.6	2858.9	2887.4	2916.1	2944.8
	3119.4	3148.9	3178.6	3208.1	3238.1
	3419.4	3450.1	3480.8	3511.6	3542.6
	3730.6	3763.3	3794.1	3826.1	3858.1
	4052.8	4085.6	4118.6	4151.6	4184.8
	4386.1	4420.1	4454.1	4488.3	4522.6
	4730.6	4765.6	4800.8	4836.1	4871.4
	5086.1	5122.3	5158.6	5194.9	5231.4
	5452.8	5490.1	5527.4	5564.9	5602.6
	5830.6	5868.9	5907.4	5946.1	5984.8

Excavation 36' Road way

	0	1	2	3	4
23	6023.6	6062.6	6101.6	6140.8	6180.1
24	6415.1	6455.1	6495.3	6535.6	6575.9
25	6823.6	6864.7	6906.0	6947.4	6988.9
26	7240.2	7282.6	7324.9	7367.4	7410.0
27	7668.0	7711.4	7754.9	7793.4	7842.2
28	8106.9	8157.4	8196.0	8240.7	8285.6
29	8556.9	8602.6	8648.3	8694.1	8740.1
30	9018.1	9064.8	9111.6	9158.6	9205.6
31	9490.3	9538.1	9586.1	9634.1	9682.13
32	9973.6	10023.6	10071.6	10120.8	10170.1
33	10468.1	10578.1	10668.3	10618.6	10668.9
34	10973.6	11024.8	11076.1	11127.4	11178.9
35	11490.3	11542.6	11594.9	11647.4	11700.1
36	12018.1	12071.4	12124.9	12178.6	12232.3
37	12556.9	12611.4	12666.1	12720.8	12775.6
38	13106.9	13162.6	13218.3	13274.1	13330.1
39	13668.1	13724.8	13781.6	13838.6	13895.6
40	14240.3	14298.1	14356.1	14414.1	14472.3
41	14822.6	14882.6	14941.6	15000.8	15060.1
42	15418.1	15478.1	15538.3	15598.6	15658.9
43	16023.6	16084.8	16146.1	16207.4	16268.9
44	16640.3	16702.6	16764.9	16827.4	16890.1
45	17268.1	17331.4	17394.9	17458.6	17523.3
46	17906.9	17971.4	18036.1	18100.8	18165.6

Slope 1.5 to 1

	5	6	7	8	9
	6219.4	6258.9	6298.5	6338.3	6378.1
	6619.4	6660.1	6700.8	6741.6	6782.6
	7030.5	7072.3	7114.1	7151.0	7198.1
	7452.7	7495.6	7538.5	7581.6	7624.7
	7886.1	7930.0	7974.1	8018.2	8062.6
	8330.5	8375.6	8420.8	8466.0	8511.4
	8786.1	8832.3	8878.6	8924.9	8971.4
	9252.8	9300.1	9347.4	9394.9	9442.6
	9730.6	9778.9	9827.4	9876.1	9924.8
	10219.4	10268.9	10318.6	10368.3	10418.1
	10719.4	10770.1	10820.8	10871.6	10922.6
	11230.5	11282.3	11334.1	11386.1	11408.1
	11752.8	11805.6	11858.6	11911.6	11964.8
	12286.1	12340.1	12394.1	12448.3	12502.6
	12830.6	12885.6	12940.8	12996.1	13051.4
	13386.1	13442.3	13498.6	13554.9	13611.4
	13952.8	14010.1	14067.4	14124.9	14182.6
	14530.6	14588.9	14647.4	14706.1	14764.8
	15119.4	15178.9	15238.6	15298.3	15358.8
	15719.4	15780.1	15840.8	15901.6	15962.6
	16330.6	16392.3	16454.1	16516.1	16578.1
	16952.8	17015.6	17078.6	17141.6	17204.8
	17586.1	17650.1	17714.1	17778.3	17842.6
	18230.6	18295.6	18360.8	18426.1	18491.4

Excavation - 56' Roadway

	0	1	2	3	4
47	18556.9	18623.6	18688.3	18754.1	18820.1
48	19218.1	19284.8	19351.6	19418.6	19485.6
49	19890.3	19958.1	20026.1	20094.1	20162.3
50	20573.6	20642.6	20711.6	20780.8	20850.1
51	21268.1	21338.1	21408.3	21478.6	21548.9
52	21973.6	22044.8	22116.1	22187.4	22258.9
53	22690.3	22762.6	22834.9	22907.4	22980.1
54	23418.1	23491.4	23564.9	23638.6	23712.3
55	24156.9	24231.4	24306.1	24380.8	24455.6
56	24906.9	24982.6	25058.3	25134.1	25210.1
57	25668.1	25744.8	25821.6	25898.6	25975.6
58	26440.3	26518.1	26596.1	26674.1	26752.3
59	27222.6	27302.6	27381.6	27460.8	27540.1
60	28018.1	28098.1	28178.3	28258.6	28338.9
61	28823.6	28904.8	28986.1	29067.4	29148.9
62	29640.3	29722.6	29804.9	29887.4	29970.1
63	30468.1	30551.4	30634.9	30718.6	30802.3

Slope 15 to 1

	5	6	7	8	9
47	18886.1	18952.3	19018.6	19084.9	19151.4
48	19552.8	19620.1	19687.4	19754.9	19822.6
49	20230.6	20298.9	20367.4	20436.1	20504.8
	20917.4	20988.9	21058.6	21128.3	21198.1
	21619.4	21690.1	21760.8	21831.6	21902.6
	22330.6	22402.3	22474.1	22546.1	22618.1
	23052.8	23125.6	23198.6	23271.6	23344.8
	23786.1	23860.1	23934.1	24008.3	24082.6
	24522.6	24605.6	24680.8	24756.1	24831.4
	25286.1	25362.3	25438.6	25514.9	25591.4
	26052.8	26130.1	26207.4	26284.9	26362.6
	26830.6	26908.9	26987.4	27066.1	27144.8
	27619.4	27698.9	27778.6	27858.3	27938.1
	28419.4	28500.1	28580.8	28661.6	28742.6
	29230.6	29312.3	29394.1	29476.1	29558.1
	30052.8	30135.6	30218.6	30301.6	30384.8
	30886.1	30970.1	31054.1	31138.3	31223.6

Table Showing the res. cubic
Sections 100' Long. Road bed 26'

	0	1	2	3	4
0		9.7	19.5	29.4	39.4
1	101.9	112.6	123.5	134.6	145.7
2	214.8	226.7	238.7	250.9	263.1
3	338.9	351.9	365.0	378.3	391.6
4	474.1	488.2	502.4	516.8	531.3
5	620.4	635.6	651.0	666.4	682.0
6	777.8	794.1	810.6	827.2	843.9
7	946.3	963.8	981.3	999.0	1016.8
8	1123.9	1144.5	1163.2	1182.0	1200.9
9	1316.7	1336.3	1356.1	1376.1	1396.1
10	1518.5	1539.3	1560.2	1581.2	1602.4
11	1731.5	1753.4	1775.4	1797.5	1819.8
12	1955.6	1978.6	2001.7	2024.9	2048.3
13	2190.7	2214.9	2239.1	2263.5	2287.9
14	2437.0	2462.3	2487.6	2513.1	2537.8
15	2694.4	2720.8	2747.3	2773.8	2800.5
16	2963.0	2990.4	3018.0	3045.7	3073.5
17	3242.6	3271.2	3299.8	3328.6	3357.6
18	3533.3	3563.0	3592.8	3620.7	3650.7
19	3835.2	3866.0	3896.9	3927.9	3959.0
20	4148.1	4180.1	4212.1	4244.2	4276.4
21	4472.2	4505.2	4538.4	4571.6	4605.0
22	4807.4	4841.5	4875.8	4910.1	4944.6

Gas. Embankment contained in
and slope 15 to 1

	5	6	7	8	9
	49.5	59.8	70.1	80.6	91.2
	156.9	168.3	179.8	191.3	203.0
	275.5	287.9	300.5	313.2	326.0
	405.1	418.7	432.3	446.1	460.1
	545.8	560.5	575.3	590.2	605.2
	697.7	713.5	729.4	745.4	761.5
	860.6	877.6	894.6	911.7	928.9
	1034.7	1052.7	1070.9	1089.1	1107.5
	1219.9	1239.0	1258.3	1277.6	1295.1
	1416.1	1436.4	1456.8	1477.3	1497.8
	1623.6	1645.0	1666.4	1688.0	1709.7
	1842.1	1864.6	1887.2	1909.9	1932.6
	2071.8	2095.3	2119.0	2142.8	2166.7
	2312.5	2337.2	2362.0	2387.0	2411.9
	2564.4	2590.1	2618.1	2642.1	2668.2
	2827.3	2854.2	2881.2	2908.4	2935.6
	3101.4	3129.4	3157.5	3185.8	3214.1
	3386.6	3415.7	3444.9	3474.3	3503.8
	3683.9	3711.1	3741.5	3771.9	3802.5
	3990.3	4021.6	4053.1	4084.7	4116.4
	4308.8	4341.3	4373.8	4406.5	4439.3
	4638.4	4672.0	4705.7	4739.5	4773.4
	4979.2	5013.9	5048.6	5083.6	5118.6

Embankment 26' Road bed

	0	1	2	3	4
23	513.57	5188.9	5224.3	5259.8	5295.3
24	5511.1	5547.5	5583.9	5620.3	5657.2
25	5879.6	5917.1	5954.7	5992.4	6030.1
26	6259.3	6297.8	6336.5	6375.3	6414.2
27	6650.0	6689.7	6729.9	6769.9	6809.4
28	7051.9	7092.6	7133.6	7174.6	7215.7
29	7464.8	7506.7	7548.7	7590.9	7632.1
30	7888.9	7931.9	7975.0	8018.3	8061.6
31	8324.1	8368.2	8412.4	8456.8	8501.3
32	8770.4	8815.6	8861.0	8906.4	8952.0
33	9227.8	9274.1	9320.6	9367.2	9413.9
34	9696.3	9743.8	9791.3	9839.0	9886.8
35	10175.9	10224.5	10273.2	10322.0	10360.9
36	10666.7	10716.4	10766.2	10816.1	10866.1
37	11168.5	11219.3	11270.2	11321.2	11372.4
38	11681.0	11733.4	11785.4	11837.5	11889.8
39	12205.6	12258.6	12311.7	12364.9	12418.3
40	12740.7	12794.9	12849.1	12903.5	12957.9
41	13287.0	13342.3	13397.6	13453.1	13508.7
42	13844.4	13900.8	13957.3	14013.8	14070.5
43	14413.2	14470.4	14527.0	14583.6	14640.5
44	14992.6	15051.2	15110.5	15168.6	15227.5
45	15583.3	15643.0	15702.8	15764.3	15822.7
46	16185.2	16245.9	16306.8	16367.9	16429.0

Slope 1.5 to 1

	5	6	7	8	9
	5331.0	5366.8	5402.7	5438.7	5474.9
	5694.4	5730.9	5767.9	5805.0	5842.3
	6068.1	6106.1	6144.2	6182.4	6220.9
	6453.2	6492.4	6531.6	6571.0	6610.4
	6849.5	6889.8	6930.1	6970.6	7011.2
	7256.9	7298.3	7339.8	7381.3	7423.0
	7675.5	7717.9	7760.5	7803.2	7846.0
	8105.1	8148.7	8192.9	8236.1	8280.1
	8545.8	8590.5	8635.1	8680.2	8725.2
	8997.7	9043.5	9089.4	9135.4	9181.5
	9460.4	9507.6	9554.6	9601.7	9648.9
	9934.7	9982.6	10030.9	10079.1	10127.5
	10419.9	10469.0	10518.3	10567.6	10617.1
	10916.2	10966.4	11016.8	11067.3	11117.8
	11423.6	11475.0	11526.4	11578.0	11629.7
	11942.1	11994.6	12047.2	12099.9	12153.6
	12471.8	12525.3	12579.0	12632.8	12686.7
	13013.5	13067.2	13121.0	13176.9	13231.9
	13564.4	13620.1	13676.1	13732.1	13788.2
	14127.3	14184.2	14241.2	14308.4	14355.6
	14701.3	14759.4	14817.6	14875.8	14934.1
	15286.5	15345.7	15404.9	15464.2	15523.7
	15882.8	15943.2	16003.4	16063.9	16124.5
	16490.3	16551.6	16613.0	16674.5	16736.3

Embankment 26' Road bed

	0	1	2	3	4
47	16778.1	16860.0	16922.0	16984.2	17046.0
48	17422.2	17485.2	17548.3	17611.6	17674.9
49	18057.4	18121.5	18185.7	18250.1	18314.8
50	18703.7	18768.9	18834.2	18899.7	18965.3
51	19361.1	19427.4	19493.9	19560.5	19627.5
52	20029.5	20097.0	20164.6	20232.3	20300.1
53	20709.3	20777.8	20846.5	20915.3	20984.2
54	21400.0	21469.6	21539.4	21609.3	21679.4
55	22101.9	22172.6	22243.5	22314.5	22385.7
56	22814.8	22886.7	22958.7	23030.8	23103.1
57	23538.9	23611.9	23685.0	23758.2	23831.6
58	24274.1	24348.2	24422.4	24496.7	24571.2
59	25020.4	25095.9	25171.4	25246.4	25322.2
60	25777.8	25854.3	25930.6	26007.1	26083.8
61	26546.3	26627.7	26701.3	26779.0	26856.8
62	27325.9	27404.5	27483.2	27561.9	27640.8
63	28117.7	28196.3	28276.1	28356.0	28434.0

Slope 1.5 to 1

	5	6	7	8	9
17108.7	17171.2	17233.8	17296.5	17359.3	
17738.4	17802.0	17865.6	17929.4	17993.3	
18379.1	18443.9	18508.6	18573.5	18638.5	
19031.0	19096.8	19162.7	19228.7	19294.8	
19693.9	19760.8	19827.9	19895.4	19962.2	
20368.0	20436.0	20504.2	20572.4	20640.7	
21053.2	21122.3	21191.6	21260.9	21330.4	
21749.5	21819.7	21890.1	21960.5	22031.1	
22456.9	22528.2	22599.7	22671.3	22743.0	
23175.4	23247.9	23320.5	23393.1	23465.9	
23905.0	23978.6	24052.3	24126.1	24200.0	
24645.8	24720.5	24795.3	24870.2	24945.2	
25397.6	25473.4	25549.3	25625.4	25701.5	
26160.6	26226.4	26314.6	26391.7	26467.8	
26934.7	27012.7	27090.8	27169.1	27247.4	
27719.9	27799.0	27878.2	27946.5	28037.0	
28516.2	28596.4	28676.7	28757.7	28837.8	

Table showing the No cubic
Sections 100' Long - Road-bed 18'

	0	1	2	3	4
0		6.7	13.6	20.5	27.6
1	72.2	80.1	88.0	96.1	104.2
2	155.5	164.5	173.5	182.7	191.9
3	249.9	260.0	270.1	280.4	290.8
4	355.5	366.7	378.0	389.4	400.9
5	472.2	484.5	496.9	509.4	523.0
6	600.0	613.4	626.9	640.5	654.2
7	738.9	753.4	768.0	782.7	797.6
8	888.9	904.5	920.2	936.1	952.0
9	1050	1067	1084	1101	1118
10	1232	1240	1258	1274	1294
11	1406	1425	1444	1463	1482
12	1600	1620	1640	1661	1681
13	1806	1827	1848	1869	1891
14	2022	2045	2067	2089	2113
15	2250	2273	2297	2321	2344
16	2489	2513	2538	2563	2588
17	2739	2765	2790	2816	2842
18	3000	3027	3054	3081	3108
19	3272	3300	3328	3356	3384
20	3556	3585	3614	3643	3672
21	3850	3880	3910	3941	3971
22	4156	4187	4218	4249	4281

Gas Excavation contained in
Slope 1.5 to 1

	5	6	7	8	9
	34.7	42.0	49.4	56.9	64.5
	112.5	120.9	129.4	138.0	146.7
	201.3	210.8	220.4	230.1	240.0
	301.3	311.9	322.6	333.4	344.5
	412.5	424.2	436.0	448.0	460.0
	534.7	547.6	560.6	573.6	586.7
	668.1	682.0	696.1	710.2	724.5
	812.5	827.6	842.7	858.0	873.4
	968.1	984.2	1001	1017	1033
	1135	1152	1169	1187	1205
	1313	1331	1349	1368	1387
	1501	1521	1541	1560	1580
	1701	1722	1743	1764	1785
	1913	1934	1956	1978	2000
	2135	2158	2181	2204	2227
	2368	2392	2416	2440	2465
	2613	2638	2663	2688	2713
	2868	2894	2921	2947	2973
	3135	3162	3189	3217	3245
	3413	3441	3469	3498	3527
	3701	3731	3761	3790	3820
	4001	4032	4063	4094	4125
	4313	4344	4376	4408	4440

Excavation - Base 18'

	0	1	2	3	4
23	4472	4505	4537	4569	4602
24	4800	4833	4867	4901	4934
25	5139	5173	5208	5243	5278
26	5489	5525	5560	5596	5632
27	5850	5887	5924	5961	5998
28	6222	6260	6298	6336	6374
29	6606	6645	6684	6723	6762
30	7000	7040	7080	7121	7161
31	7406	7447	7488	7529	7571
32	7823	7865	7907	7949	7992
33	8250	8293	8337	8381	8424
34	8689	8733	8778	8823	8868
35	9139	9185	9230	9276	9322
36	9600	9647	9694	9741	9788
37	10072	10120	10168	10216	10264
38	10556	10605	10654	10703	10752
39	11050	11100	11150	11200	11251
40	11556	11607	11658	11709	11761
41	12072	12125	12177	12229	12282
42	12600	12653	12707	12761	12814
43	13139	13193	13248	13303	13358
44	13689	13745	13800	13856	13912
45	14250	14307	14364	14421	14478
46	14822	14880	14938	14996	15054

Slope 1.5 to 1

	5	6	7	8	9
	4635	4668	4701	4734	4767
	4968	5002	5036	5070	5105
	5313	5348	5383	5418	5453
	5668	5704	5741	5777	5813
	6035	6072	6109	6147	6185
	6413	6451	6489	6528	6567
	6801	6841	6881	6921	6960
	7201	7242	7283	7324	7365
	7613	7654	7696	7738	7780
	8035	8078	8121	8164	8207
	8468	8512	8556	8600	8645
	8913	8958	9003	9048	9093
	9368	9414	9461	9507	9553
	9835	9882	9929	9977	10025
	10313	10361	10409	10458	10507
	10801	10851	10901	10950	11000
	11301	11352	11403	11454	11505
	11813	11864	11916	11968	12020
	12335	12388	12441	12494	12547
	12868	12922	12976	13030	13085
	13413	13468	13523	13578	13633
	13968	14024	14081	14137	14193
	14535	14592	14649	14707	14765
	15113	15171	15229	15288	15347

Excavation - Base 18'

	0	1	2	3	4
47	15406	15465	15524	15583	15642
48	16000	16060	16120	16181	16241
49	16606	16667	16728	16789	16851
50	17222	17285	17347	17409	17472
51	17850	17913	17977	18041	18104
52	18489	18553	18618	18683	18748
53	19139	19205	19270	19336	19402
54	19800	19867	19934	20000	20068
55	20472	20540	20608	20676	20744
56	21156	21225	21294	21363	21432
57	21850	21920	21990	22061	22131
58	22556	22627	22698	22769	22841
59	23272	23345	23417	23489	23562
60	24000	24073	24147	24221	24294

Continuation of

	0	.5		0	.5
61	24739	25113	68	30232	30635
62	25489	25868	69	31050	31468
63	26250	26635	70	31889	32313
64	27022	27413	71	32739	33168
65	27806	28210	72	33600	34035
66	28600	29001	73	34472	34913
67	29406	29813	74	35356	35801

Slope 1.5 to 1

	5	6	7	8	.9
15701	15761	15821	15880	15940	
16301	16362	16423	16484	16545	
16913	16974	17036	17098	17160	
17535	17598	17661	17724	17787	
18168	18232	18296	18360	18425	
18813	18878	18943	19008	19073	
19468	19534	19601	19667	19733	
20135	20202	20269	20337	20405	
20813	20881	20949	21018	21087	
21501	21571	21641	21710	21780	
22201	22272	22343	22414	22485	
22913	22984	23056	23128	23200	
23635	23708	23781	23854	23927	
24368	24442	24516	24590	24665	

18' Base for each .5 cutting

	0	.5		0	.5
75	36250	36701	82	42823	
76	37156	37613	83	43806	
77	38072	38535	84	44800	
78	39000	39468	85	45806	
79	39939	40413	86	46832	
80	40889		87	47850	
81	41850		88	48889	

Table showing the No. Cubic
Roadway 28' and a slope 1.5 to 1 -

	0	1	2	3	4
0		10.4	21.0	31.6	42.4
1	109.3	120.8	132.5	144.3	156.1
2	229.6	242.3	255.0	267.9	280.9
3	361.2	374.9	388.8	402.8	416.9
4	503.7	518.6	533.6	548.6	563.9
5	657.5	673.4	689.5	705.7	722.1
6	822.2	839.3	856.5	873.8	891.2
7	998.1	1016.0	1035.0	1053.0	1072.0
8	1185	1204	1224	1243	1263
9	1383	1403	1424	1445	1465
10	1592	1614	1635	1657	1679
11	1812	1835	1858	1881	1904
12	2044	2068	2092	2116	2140
13	2287	2312	2337	2362	2387
14	2541	2567	2593	2619	2645
15	2806	2833	2860	2887	2915
16	3081	3109	3138	3166	3195
17	3368	3397	3427	3456	3486
18	3667	3697	3728	3758	3789
19	3976	4007	4039	4070	4102
20	4296	4328	4361	4394	4427
21	4627	4661	4695	4729	4763
22	4970	5005	5040	5075	5111

Qu. contained in sections 100' Long
Ditches not included - Excavation

	5	6	7	8	9
	53.2	64.2	75.3	86.5	97.9
	168.1	180.2	192.4	204.8	217.2
	294.0	307.2	320.5	334.0	347.5
	431.1	445.4	459.9	474.4	489.1
	579.3	594.7	610.2	625.8	641.6
	738.5	755.0	771.7	788.4	805.3
	908.8	926.4	944.2	962.0	980.0
	1090.0	1109.0	1128.0	1147.0	1166.0
	1283	1303	1322	1343	1363
	1486	1507	1528	1549	1571
	1701	1723	1745	1767	1790
	1927	1950	1973	1997	2020
	2164	2189	2213	2238	2262
	2413	2438	2464	2489	2515
	2672	2698	2725	2752	2779
	2942	2970	2997	3025	3053
	3223	3252	3281	3310	3339
	3516	3546	3576	3606	3636
	3820	3851	3882	3913	3944
	4134	4166	4198	4231	4263
	4460	4493	4527	4560	4594
	4797	4832	4866	4900	4935
	5146	5181	5217	5253	5288

Excavation - Road way 38'

	11	1	2	3	4
23	5324	5360	5396	5432	5469
24	5689	5726	5763	5800	5838
25	6065	6103	6141	6179	6218
26	6451	6491	6530	6570	6609
27	6850	6890	6931	6971	7012
28	7259	7309	7342	7384	7426
29	7680	7722	7765	7808	7851
30	8111	8155	8199	8243	8287
31	8554	8598	8643	8688	8734
32	9007	9053	9099	9145	9191
33	9472	9519	9566	9613	9661
34	9948	9997	10045	10093	10142
35	10435	10484	10534	10583	10633
36	10933	10983	11034	11084	11135
37	11443	11494	11546	11598	11649
38	11963	12016	12068	12121	12174
39	12494	12548	12602	12656	12710
40	13037	13092	13147	13202	13257
41	13591	13647	13703	13759	13815
42	14156	14213	14270	14327	14385
43	14731	14790	14848	14906	14965
44	15318	15378	15437	15497	15556
45	15917	15977	16038	16098	16159
46	16526	16587	16649	16711	16773

Slope 15 to 1

5	6	7	8	9
5505	5542	5578	5615	5652
5875	5913	5951	5989	6027
6257	6295	6334	6373	6412
6649	6689	6729	6769	6809
7053	7094	7135	7176	7217
7468	7510	7552	7594	7637
7894	7937	7981	8024	8067
8331	8375	8420	8464	8509
8779	8824	8870	8915	8961
9338	9384	9431	9478	9525
9708	9756	9804	9851	9900
10190	10239	10288	10337	10386
10683	10732	10782	10832	10882
11186	11237	11288	11339	11391
11701	11753	11806	11858	11910
12227	12281	12334	12387	12441
12764	12819	12873	12928	12982
13312	13368	13423	13479	13535
13872	13928	13985	14043	14099
14442	14500	14558	14615	14673
15024	15082	15141	15200	15259
15616	15676	15736	15796	15856
16220	16281	16342	16403	16465
16835	16897	16959	17021	17084

Excavation - Roadway 28'

St.	0	1	2	3	4
47	17146	17209	17272	17335	17398
48	17778	17842	17905	17969	18033
49	18420	18485	18550	18615	18680
50	19074	19140	19206	19273	19339
51	19739	19806	19873	19940	20008
52	20415	20483	20551	20620	20688
53	21102	21171	21241	21310	21380
54	21800	21870	21941	22012	22082
55	22509	22581	22652	22724	22796
56	23230	23302	23375	23448	23521
57	23961	24035	24109	24183	24257
58	24704	24779	24854	24929	25004
59	25457	25533	25609	25686	25762
60	26222	26299	26376	26454	26531

Continuation of 28' Bal.

St.	5	St.	5		
61	26998	27390	68	32741	33172
62	27785	28183	69	33605	34042
63	28583	28986	70	34481	34924
64	29393	29801	71	35369	35816
65	30213	30627	72	36267	36720
66	31044	31464	73	37176	37635
67	31887	32312	74	38096	38561

Slope 15 to 1

St.	5	6	7	8	9
17461	17524	17587	17651	17714	
18098	18162	18226	18291	18356	
18746	18811	18877	18942	19008	
19405	19472	19538	19605	19672	
20075	20143	20211	20279	20347	
20707	20836	20894	20963	21032	
21450	21519	21589	21659	21730	
22153	22224	22295	22366	22438	
22868	22940	23012	23085	23157	
23594	23667	23741	23814	23888	
24331	24405	24480	24554	24629	
25079	25155	25230	25306	25381	
25838	25915	25993	26068	26145	
26609	26686	26764	26842	26920	

to each 15 cutting

St.	5	St.	5	
75	39028	39498	83	46880
76	39970	40446	84	47711
77	40924	41405	85	48554
78	41889	42375	86	50028
79	42865	43357	87	51072
80	43852		88	52148
81	44850		89	53235

Curves

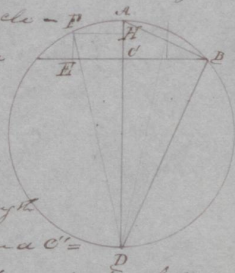
The Chord and Middle Ordinate given.

to find the Diameter of Circle - p

$\triangle BCD$ similar to $\triangle ACB$. then

$$AC:CB::CB:CD \text{ or } \frac{CB^2}{AC} + AC =$$

Diameter of Circle



The Ch. and ch. of half

the arc given, to find the length

of arc, nearly. C = Ch. of arc, and C' =

Ch. of half the arc. then $\frac{2C'^2 - C^2}{3} + 3C' =$ Length of arc nearly

Two parallel Chords, and the distance between

them given, to find the distance of the greater from

the center of the Circle. C = greater Ch. C' = lesser

and D = distance between and X = distance

$$\text{of greater from center. } \frac{(D^2 + \frac{C'^2}{2}) - \frac{C^2}{2}}{2D} = X$$

The middle ordinate AC given, to find

any other at EF . $AD - AC = CD$ then

$\sqrt{DF^2} = FH^2 = HD$ and $FD - CD = CH$ or its equal

EF , the ordinate required -

To find the ordinates for chords of 100 ft

Multiply the rectangle of the abscissa by the

no. degree of the central $\angle$ divide the product

by 10000, and $\frac{7}{8}$ of the quotient will be the Ord.

or, divide the rectangle of the abscissa by

the diameter will give it nearly -

To find the distance from a Vertex
at to commence the Curve - Multiply
the given Radius by the Nat. Tangt
of $\frac{1}{2}$ the ^{external} angle at Vertex

1. The first of these is the
the second is the
the third is the
the fourth is the
the fifth is the
the sixth is the
the seventh is the
the eighth is the
the ninth is the
the tenth is the
the eleventh is the
the twelfth is the
the thirteenth is the
the fourteenth is the
the fifteenth is the
the sixteenth is the
the seventeenth is the
the eighteenth is the
the nineteenth is the
the twentieth is the
the twenty-first is the
the twenty-second is the
the twenty-third is the
the twenty-fourth is the
the twenty-fifth is the
the twenty-sixth is the
the twenty-seventh is the
the twenty-eighth is the
the twenty-ninth is the
the thirtieth is the
the thirty-first is the
the thirty-second is the
the thirty-third is the
the thirty-fourth is the
the thirty-fifth is the
the thirty-sixth is the
the thirty-seventh is the
the thirty-eighth is the
the thirty-ninth is the
the fortieth is the
the forty-first is the
the forty-second is the
the forty-third is the
the forty-fourth is the
the forty-fifth is the
the forty-sixth is the
the forty-seventh is the
the forty-eighth is the
the forty-ninth is the
the fiftieth is the
the fifty-first is the
the fifty-second is the
the fifty-third is the
the fifty-fourth is the
the fifty-fifth is the
the fifty-sixth is the
the fifty-seventh is the
the fifty-eighth is the
the fifty-ninth is the
the sixtieth is the
the sixty-first is the
the sixty-second is the
the sixty-third is the
the sixty-fourth is the
the sixty-fifth is the
the sixty-sixth is the
the sixty-seventh is the
the sixty-eighth is the
the sixty-ninth is the
the seventieth is the
the seventy-first is the
the seventy-second is the
the seventy-third is the
the seventy-fourth is the
the seventy-fifth is the
the seventy-sixth is the
the seventy-seventh is the
the seventy-eighth is the
the seventy-ninth is the
the eightieth is the
the eighty-first is the
the eighty-second is the
the eighty-third is the
the eighty-fourth is the
the eighty-fifth is the
the eighty-sixth is the
the eighty-seventh is the
the eighty-eighth is the
the eighty-ninth is the
the ninetieth is the
the ninety-first is the
the ninety-second is the
the ninety-third is the
the ninety-fourth is the
the ninety-fifth is the
the ninety-sixth is the
the ninety-seventh is the
the ninety-eighth is the
the ninety-ninth is the
the hundredth is the

To find Radi. corresponding to any $\angle$ Def. and to = Chords, of any given length the $180^\circ - \angle$ Def. then as $\sin$ of $\angle$ Def. is to $\sin$ of half the remaining $\angle$, so is Cho. to Rad.

To find $\angle$ deflection for any given Radi. and for = Chords, of any given length - $\div \frac{1}{2}$ the chord by Radi. = Nat. sine Tangent, then twice the $\angle$ corresponding to this sine is the $\angle$ Def.

To find Def. in Ft. - Divide Radi. by 10,000 or for any equal chords. $\div \frac{1}{2}$ the given chord by Radi. = Nat. sine of $\frac{1}{2} \angle$ Def., twice this $\times$ by Cho. = Def. in Ft. and decimals

To find tangential distance for any Radi. & equal chords; find tangential $\angle$, then twice the sine of $\frac{1}{2}$ this $\angle \times$ chord = Tang. dist. in Ft.

To find middle ordinates. $R - \sqrt{R^2 - (\frac{1}{2} \text{cho})^2}$ - or subtract the Nat. Co. sine of tangential $\angle$ from 1 and $\times$ by Radi.

To find any ordinate middle being given Radi. - mid. ord. then $\sqrt{D^2 - E^2} = F$, then $H D$ - the former dist. = remains sought - See page 49

The $\angle A P B$ subtended by any chord $A B$ at centre is twice the $\angle A C B$ at any part of the circumference on same side of the chord -

The $\angle B A C$ formed by any $\angle$ cho. $A B$ with a tangt. at either extremity, is = half the $\angle A P B$ at the centre, or to the $\angle A C B$ at the circumference -

The exterior $\angle B P C$ formed by two unequal chords, $A B, B C$, is = to the central $\angle A P B$, or $C P B$, or twice the Tangent $G A B$ -

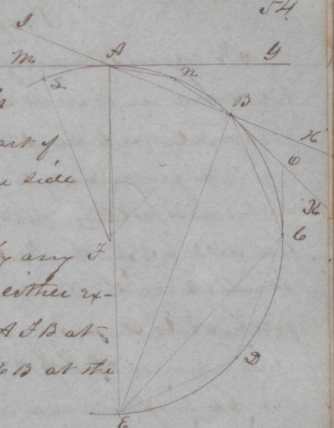
The exterior $\angle S A B$ of two unequal chords, $S A, A B$, is = to half the sum of their central $\angle$ s $S P A$, or to the sum of their Tangents $S A A$ -

The exterior $\angle$ of any two chords, $A N, N B$, is = half the central $\angle$ of $A B$, or its exterior $\angle$ with its equal $B C$ -

The exterior $\angle K B C$, of any two Tangents $B C, B K$, is = the central $\angle B P C$ of the cho. $B C$ which joins their point of contact -

Diameter of circle $\frac{360}{3.1416}$ and Radi. = $\frac{180}{3.1416}$ or 57.3 and the Radi. of any other circle = $\frac{57.3}{m}$, the radii of circles being directly as their degrees of curvature -

Note. m and n represent deg. of curvature; $m > n$



Prop. 1.

To change the origin of a curve so that it shall terminate in a Tangt. parallel to a given Tangt. - or

Instrumentally measure

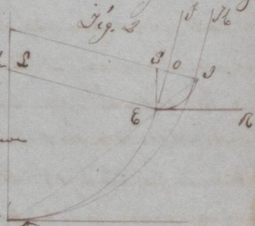
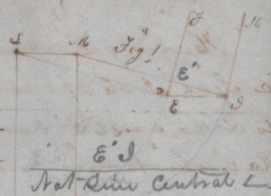
the dist EO , to the Tangt you wish to intersect, parallel with the back Tangt. Set that dist. from A to O and you have the origin sought.

Prop. 2

Having a curve terminating in a tangent, it is required to find where a curve of different Rad. originating at the same point will terminate in a parallel Tangt.

Instrumentally With E at Center and $E.R.$ as Tangent describe the differential curve EO equivalent to AE , and O will be the point sought.

To find the curvature of EO $a = sp. so m$ and $n =$ the curvature of AE and a is then $\frac{a}{m} =$ Rad AE and $\frac{a}{n} =$ Rad of EO and then difference $= \frac{a}{m} - \frac{a}{n}$ and a divided by this result $= \frac{m \cdot n}{m - n}$ that is multiply their curvatures together and divide by their difference - To find EO Geometrically. Multiply the Nat cosine of the central $\angle$ by the diff. of Radii add this to the lesser Rad. then the quarter this amt. $= EO$

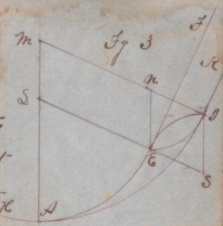


Prop. 3

Having a Curve Fig 3 and a Line SK at distance from it, to draw another Curve of different Rad. which shall touch the first Curve and also the line SK -

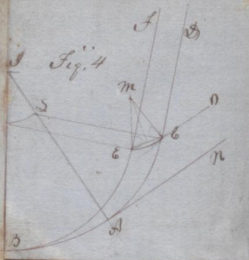
Set S be the centre of KDE . Draw the Tan. ES parallel to SK , and through S and E draw DS , and make it equal to the Rad. of the other Circle: from S with the Rad. SE describe the differential circle ES , cutting SK in I : join SB and draw SA parallel to it; complete the parallelogram SSm ; then will m be the centre of the circle required - Application from E as a Tan. trace the curve EO as directed in the preceding proposition until it intersects SK in I . The central $\angle ESS$ must then be ascertained from the $3rd$. (after completing the same) and the curve SE made equivalent to it; it is then the P.C.C. sought from which if a curve be described, it will touch SK in the point I -

To find IO - Multiply the Nat. Cos. of the central $\angle$ by the difference of Rad., add this to the lesser Rad. and the greater less this amt. equal IO -



Prop 4

Having located a compound curve $H.A.A.C.$ Fig 4, terminating in a Tangt $C.D.$, it is required to change the P.C.C. from A to B , so that the curve will terminate in a Tangt $E.F.$ parallel to $C.D.$

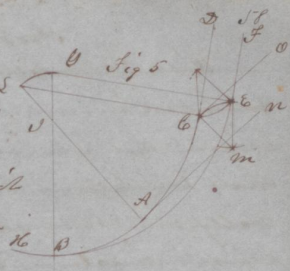


Let S be the centre of $H.B.A.$ and S the centre of $A.C.$, and draw $S.A.$, then $S.S$ is the difference of the radii of the two Curves: make $C.M$ equal and parallel to $S.S$ and describe the Circle $C.E$, cutting $C.F$ in E . Draw $S.D$ parallel to $M.E$, then will B be the new P.C.C. sought.

Application— If in starting from the point A , the index set at zero, it will show upon completing the Tan. at C the whole L between $A.H$ and $C.D.$, and by turning back to A , the telescope will assume a position $C.O$ parallel to $A.H$: then from $C.O$ as Tan. describe the curve $C.E$ until it intersects $C.D$ at a certain as in the last Prop, the central L of $C.E$ which is equivalent to $A.B$, and consequently the point B may be obtained by setting over A and tracing a portion of the curve equivalent to $C.E$.

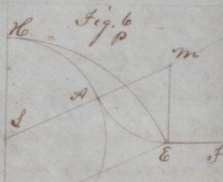
Prop 5

A second case in this Prop. occurs, when the Rad. of $A.C.$ Fig 5, is greater than that of $H.A.$, the effect of which is to throw the point m on the opposite side of $C.C.$, and consequently the curve must be turned in the opposite direction in passing from C to E .



Prop 5

When the position of the Tan. ES Fig 6, is such that if produced it would cut HC & AB , it is evident that a curve which shall touch them both externally, must be turned in the opposite direction from HC & AB making a revolution -



Take a point H in HC & AB , where the Tan HP is parallel to ES , through H and the center S draw HS & make it equal to the sum of the two radii HS and MC . From S with the Rad. HS , describe describe the curve HC intersecting ES in E , and complete the parallelogram $SS'EM$. Then since $MS = ES$, or HS , and $SA = HS$, MA must $= MC$ or CS , and since HP is parallel to ES , and MC to ES , the $\angle MCE = \angle HPS$, which is a right $\angle$. Therefore a circle described from the center M with Rad. MA will touch ES in E .

The following operation is similar to the preceding - The integral curve is found as follows: $a = 57.30$, $m =$ curvature AE , $n =$ curvature HA , then Rad. $AE = \frac{a}{m}$, and Rad. $HA = \frac{a}{n}$ and their sum $= \frac{m+n}{mn}$, and divided by this result gives $\frac{mn}{m+n}$, or multiply the curvatures together and divide by their sum -

Prop 5

When H is inaccessible Fig 7, the proposition will be solved thus -

Take any point A , Fig. 7, describe AC until the Tan. becomes parallel to ES . Then from C and a Tan. CC' parallel to AC describe curve CE , intersecting ES in E ; then ascertain the whole central $\angle$ of CE , and extend HC to B , so that A & B shall be equivalent to CE , and B will be the point of HC required.

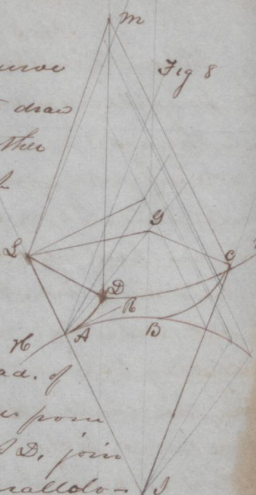


Prop. 6

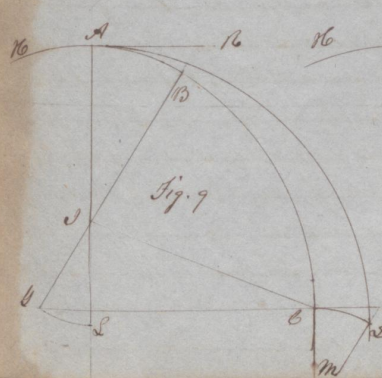
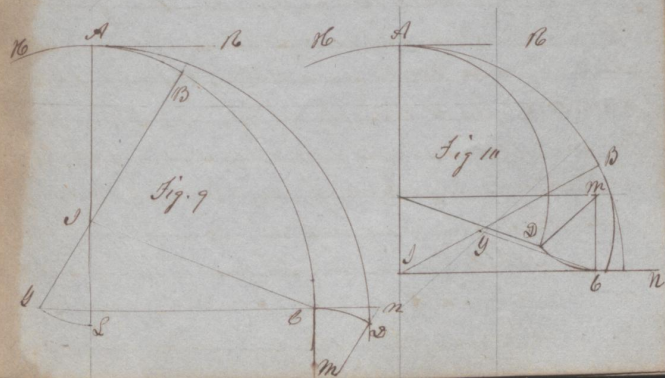
Having located a curve
H. A. B. Figs. 8, 9 and 10, to draw
through a point C, another
curve which shall touch
H. A. B. —

In Fig. 16 take any point A , and S and the centre I draw AS , and make it equal to the Rad. of the required circle, and from S as a centre, describe SD , join SC and complete the parallelogram, $SCMC$, then will M be the centre of an integral circle Fig. 8 and a difference circle, Figs. 9 and 10 - From the centre M describe MD cutting AS in D , join MD and draw SB parallel to it; make $BS = SA$, then will B be the centre of the curve BC - For since IS and IS are parallel and $= MC$ and MD , IS must be parallel an $= CD$, and hence, BC must be parallel an $= SD$, i.e. to SA or SB ; hence a circle described from B with BC will pass through C as required -

Application - Since CM is parallel to AD , the $\tan$, CM must be parallel to AD . Therefore, from the point A run AD



with the Transit; and from any convenient point in AD deflect to C , and by turning the Telescope into the position CW , parallel to AB , then describe the differential or integral curve CD until it intersects AD ; complete the Saw. AD , and ascertain the central $\angle$ of CD and make AB equivalent; from the Saw. at B describe BC , which must pass through the point C - In Fig 9 CD is turned towards the same hand as AB and in Fig 8 and 10, towards the opposite hand. The reason is evident from the position of the parallelogram $ISMb$ - In Fig 8 ABc is a rotation; in Fig 9 and 10 Compound; in Fig 6 c is outside of B and the Rad. Bc is the greater; in Fig 10 c is inside of AB , and the Rad. of Bc least.



to a
the

$\angle AOB = 60^\circ$

Fig 11

Application - Take any point H in the curve and measure to C ; from H towards the centre lay off HP , any convenient multiple of the Rad., and make HC a similar multiple of HC , then will CP be a similar multiple of CS , and parallel to it. Divide SP by CS , and the quotient will be the curvature of CS . With this curvature and from a Tangt. at right $\angle$ to CP or CS , describe CS , and where it cuts HC will be the P. L. Squired

Prop 8

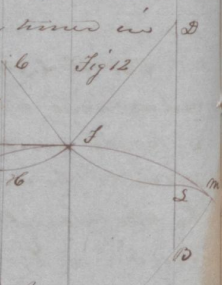
Between two curves, to draw a third with a given Rad. which shall touch both.

When all the curves are turned in the same direction -

Let $H S$ and $L M$, Fig. 12 be the given curves of which A and B are the centres, S it is required to describe a third curve $S T M$, with a given Rad. which shall touch the first two.

Take any point H in $H S$, E and a corresponding point L in $L M$, draw $A H$ and $B L$, and produce them till $A C$ and $B D$ are each = to the Rad. of third curve.

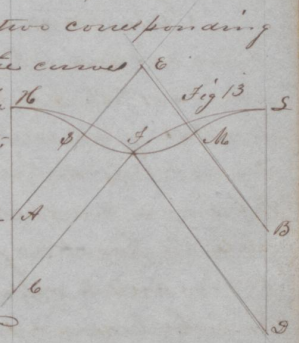
From C and D as centres describe the circles $H C$ and $L D$, and from their intersection draw $E C$ parallel to $A C$ and $B D$, and complete the parallelogram $A C E$ or $B D E$, then will E be the centre of the curve $S T M$ which shall touch the other in S and M . - For $A E = C E$ or $C H$, and $A S$ to $A H$, $E S$ must be = $A C$, which is by construction = $C E$. - Therefore $E S = E C$, &c. -



Prop 8 - Contd

Application - Since FE is parallel to $H C$, the Tangt. FM must be parallel to $H C$.

Therefore from any two corresponding points, H & L , describe the curves $H C$ & $L D$ and from their intersection with a Tangt. parallel to $H C$ describe the required curve each way till it touches the other as required -



Prop 8 - Case 2

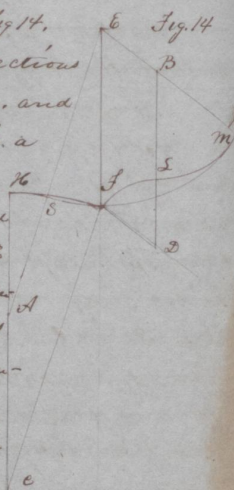
Fig. 13 - When $H S$ and $L M$, Fig. 13, are turned in the same direction and it is required that $S M$ shall be turned in the contrary direction.

Join $H A$ and $L B$ as before, and produce them till $A C$ and $B D$ are equal to the Rad. of the third circle - Describe the integral circles $H C$ and $L D$, draw $E C$ and complete the parallelogram as before, then E will be the centre of the required circle -

The demonstration and field operation in this is analogous to the former - The integral circles $H C$ & $L D$ must be turned in the same direction as $H S$ or $L M$.

Where H & S and M & S , Fig 14,
are turned in opposite directions

Take H and S as before, and
draw CH and BS in such a
manner that CH shall be the
Rad. of an integral and
 BS of a differential curve, to
 H & S respectively, complete
the parallelogram as before,
and E will be the centre
of the required circle,
which must be turned in
the same direction as the
curve to which the differential Rad. was
applied —



To draw a Tangt. to two curves
already located —

Take any point

H , Fig 15 & 16,

in the circle

H & S , and take

a corresponding

point in the other

circle S & H , and measure HL .

Then suppose HL drawn par-

allel to AB and take $CH:HS::HA:SL$

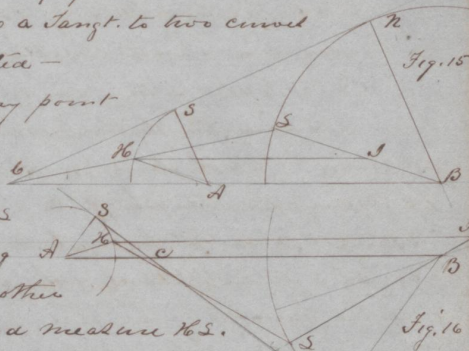
That is in Fig 15, $CH:HS::HA:SL$

And in Fig 16, $CH:HS::HA:SL$

Then C will be a point in the common Tangt.
which may be drawn as directed in prop. 7 —

For HL and SL are similar triangles,
and $SL:HA::HS:CA$, but $SL:HA$ and HS are
constant and therefore, C is constant, and
any line drawn through C to meet both
circles will make the same t with the radii
at the point of meeting, and therefore, if
it touch one circle, it will touch both —

Note: If $HA=SB$, then CH (Fig 15) will be per-
pendicular to HL —



To find the depth of ~~masses~~ of arch
To $1/34$ of span add 1 foot and from the
amt subtract $1/144$ of the span

To find the thickness of abutments
for arches - x = thickness, a = Fill, b = height
 c = span; then $x = \frac{2b + c + a}{10}$

Example, arch 10' span, abutments 6' high
fill 40' $\frac{12 + 10 + 40}{10} = 6.3$ thick

To find the depth of Key stone, Perot
 d = depth, then $d = 0.0694$ Radius of intrados
+ 1 ft, R is taken as the greatest Rad. of Arch.
When the Rad. is more than 48' this rule
will give more than is needed in practice
(For Lancer stone)

To find the elevation of the outer rail on
a curve $\frac{11.67 \times \text{Miles per hour}^2}{32 \times \text{Rad.}} \times 56.5$ Gauge

Adhesion of Locomotive upon rail
from 105 to 1666 the weight on drivers

Angle of repose on railway: 25051

Force of traction on goods 8 lbs to the T
for Load and 15 lbs per T for Engine (Paw-burn)

To measure the distance C to an inaccessible object B approximately, with compass and 4 rod chain. Call AB the line, B being an inaccessible object on the coast: from any convenient point A measure AC at right $\angle$ s, to C : at C take the $\angle ACB$ which being subtracted from 90° gives the $\angle ABC$. Then multiply 57.29 the distance on an $\angle$ of 1° with the course to make a departure of (1) by AR , and divide by the degree of the $\angle$ at B — 2 Poles Same Rule

To do the same accurately
Let AB , Fig 2, be a portion of the line, B being inaccessible. From A at right $\angle$ s lay off AC , of any convenient length, remove to C and lay CD at right $\angle$ s to CB fixing the point D in AB produced — Now $\triangle DAC$ similar $\triangle ABC$
Then $DA:AC::AC:AB$ or $\frac{AC^2}{DA} = AB$

Example Fig 1 $\frac{57.29 \times 4}{\angle ABC}$

Blank Page(s)

Variation of Compass.
 1st observation Sept 1st 1856 1.40 East

Observation by S. S. Lyon about the
 same time 2° 19 (probably error)

Observation by myself Aug 7th 58
 1° 40' East by Mutchetts Compass
 by mind 2° 05' making the variation
 of the Inset, 20'

Sept 1885 at Sawm Co. Ohio. Infor-
 0° 06" E

Table of Linear measurements

Sinks	Fect	Gads	Poles	Chains	Fms	Mils
25	16.5	5.5	1			
100	66.0	22.0	4	1		
1000	660.0	220.0	40	10	1	
8000	5280.0	1760.0	320	80	8	1

Table of Square measurements

Sq. Sinks	Fect	Gads	Poles	Chains	Acres	Mils
625	37 3/4	30 1/4	1			
10,000	4356	484	16	1		
25,000	10,890	1,210	40	2 1/2	1	
100,000	43,560	4,840	160	10	4	1
64,000,000	2,787,400	3,077,600	102,400	6,400	2,560	640

Azimuth Table

Mean azimuths for each year

Year	Sat. 33°	34°	36°	38°	40°	42°	44°
1853	1.44	1.46 1/2	1.49	1.52	1.55 1/4	1.58 1/4	2.02 1/4
1854	1.43 3/4	1.46	1.48 3/4	1.51 1/4	1.54 1/4	1.58 1/4	2.02 1/4
1855	1.43 1/4	1.45 3/4	1.48 1/4	1.51 1/4	1.54 1/2	1.58	2.02
1856	1.43	1.45 1/4	1.48	1.50 3/4	1.54	1.57 1/2	2.01 1/2
1857	1.43 3/4	1.44 3/4	1.47 1/2	1.50 1/4	1.53 1/2	1.57	2.01
1858	1.42 1/4	1.44 1/2	1.47	1.50	1.53	1.56 3/4	2.00 1/2

Difference of apparent & true levels in St. Croix

St. Dist	St. Curv	St. Refr.	St. Both	Mils	St. Curv	St. Refr.	St. Both
1000	0.000	0.000	0.000	1.00	.67	.09	.58
2000	0.000	0.000	0.000	1.25			
3000	0.002	0.000	0.002	1.50	1.50	.21	1.29
4000	0.004	.000	.004	1.75			
5000	.006	.001	.005	2.00	2.67	.38	2.29
6000	.008	.001	.007	2.25			
7000	.011	.002	.009	2.50	4.17	.60	3.57
8000	.015	.002	.013	2.75			
9000	.019	.003	.016	3.00	6.00	.86	5.14
10000	.023	.003	.020	3.50	8.17	1.17	7.00
11000	.028	.004	.024	4.00	10.67	1.52	9.15
12000	.034	.005	.029	4.50	13.55	1.93	11.62
13000	.042	.006	.036	5.00	16.67	2.38	14.29
14000	.046	.007	.039	6.00	24.01	3.43	20.58
15000	.055	.008	.047	7.00	32.69	4.67	28.01
16000	.060	.009	.051	8.00	42.69	6.10	36.59
17000	.070	.010	.060	9.00	54.02	7.72	46.30
18000	.076	.011	.065	10.00	66.70	9.53	57.17
19000	.088	.012	.076	11.00	80.69	11.53	69.16
20000	.094	.013	.081	12.00	96.00	13.71	82.29
25000	1.154			13.00	112.67	16.09	96.58
30000	1.572			14.00	130.67	18.67	112.00
35000	2.11			15.00	150.00	21.43	128.57
40000	2.72			16.00	170.67	24.38	146.29

Slopes and Angles

Slope	Angle	Slope	Angle	Slope	Angle	Slope	Angle
1/4 to 1	75° 58'	3/4 to 1	17° 06'	6/4 to 1	9° 00'	12 to 1	4° 45'
1/2 " 1	63° 28'	3/2 " 1	15° 56'	6/2 " 1	8° 30'	13 " 1	4° 24'
3/4 " 1	53° 08'	3/4 " 1	14° 55'	6 3/4 " 1	8° 26'	14 " 1	4° 00'
1 " 1	45° 00'	4 " 1	14° 02'	7 " 1	8° 08'	15 " 1	3° 49'
1 1/4 " 1	35° 40'	4 1/4 " 1	13° 15'	7 1/4 " 1	7° 51'	16 " 1	
1 1/2 " 1	33° 42'	4 1/2 " 1	12° 32'	7 1/2 " 1	7° 35'	20 " 1	2° 52'
1 3/4 " 1	29° 44'	4 3/4 " 1	11° 53'	7 3/4 " 1	7° 21'	25 " 1	2° 18'
2 " 1	26° 34'	5 " 1	11° 19'	8 " 1	7° 07'	30 " 1	1° 55'
2 1/4 " 1	23° 58'	5 1/4 " 1	10° 47'	8 1/4 " 1	6° 48'	40 " 1	1° 26'
3/2 " 1	21° 48'	5 1/2 " 1	10° 18'	9 " 1	6° 20'	50 " 1	1° 09'
2 3/4 " 1	19° 59'	5 3/4 " 1	9° 52'	10 " 1	5° 43'	75 " 1	
3 " 1	18° 26'	6 " 1	9° 27'	11 " 1	5° 00'	100 " 1	0° 35'

Difference of True & Apparent Level in inches

Dist. in fms.	Diff.	Dist. in fms.	Diff.	Dist. in fms.	Diff.	Dist. in fms.	Diff.
50	0.0007	900	0.2332	1800	0.930	2700	2.090
100	0.003	1000	0.287	1900	1.004	2800	2.350
200	0.011	1100	0.347	2000	1.148	2900	2.416
300	0.026	1200	0.413	2100	1.266	3000	2.583
400	0.046	1300	0.485	2200	1.389	3100	2.939
500	0.070	1400	0.563	2300	1.522	3200	3.575
600	0.100	1500	0.646	2400	1.653	3300	4.593
700	0.140	1600	0.735	2500	1.794	1 Mile	5.001
800	0.180	1700	0.830	2600	1.940	1 1/4 "	5.506

Formula. Given Dist. 1st Dist. 2nd: Cor.: Cor. Sought = $1/16 \times 1/4 \times 1/16 \times 1/16$

Ordinate, distance taken from extremity of ch.

Center angle	5'	10'	15'	20'	25'	30'	35'	40'	45'	50'
110° 30'	0.020	0.039	0.056	0.070	0.082	0.094	0.097	0.105	0.108	0.109
100° 00'	0.041	0.078	0.111	0.140	0.164	0.183	0.198	0.209	0.216	0.218
90° 00'	0.065	0.120	0.170	0.214	0.257	0.281	0.304	0.321	0.331	0.334
80° 00'	0.083	0.157	0.222	0.279	0.327	0.366	0.397	0.419	0.432	0.436
70° 00'	0.102	0.194	0.274	0.344	0.404	0.452	0.490	0.516	0.533	0.538
60° 00'	0.124	0.235	0.334	0.419	0.491	0.549	0.595	0.628	0.647	0.654
50° 00'	0.144	0.272	0.386	0.484	0.567	0.635	0.688	0.726	0.748	0.756
40° 00'	0.173	0.364	0.538	0.704	0.833	0.925	0.987	1.045	1.094	1.126
30° 00'	0.185	0.537	0.797	1.034	1.231	1.381	1.487	1.556	1.595	1.617
20° 00'	0.207	0.793	1.156	1.498	1.795	2.041	2.233	2.371	2.454	2.491
10° 00'	0.227	1.029	1.608	2.064	2.395	2.602	2.703	2.781	2.836	2.873
0° 00'	0.249	1.471	2.268	2.838	3.282	3.541	3.651	3.711	3.741	3.756
30° 00'	0.268	1.808	2.720	3.403	3.958	4.315	4.481	4.556	4.596	4.611
20° 00'	0.290	2.050	3.079	3.779	4.245	4.513	4.603	4.636	4.651	4.657
10° 00'	0.310	2.286	3.331	3.943	4.322	4.503	4.523	4.536	4.541	4.543
0° 00'	0.332	2.528	3.590	4.117	4.309	4.366	4.388	4.396	4.396	4.396
30° 00'	0.351	2.665	3.742	4.182	4.335	4.351	4.351	4.341	4.321	4.291
20° 00'	0.373	2.707	3.802	4.257	4.373	4.350	4.317	4.273	4.211	4.134
10° 00'	0.393	2.744	3.854	4.322	4.350	4.285	4.203	4.096	3.966	3.811
0° 00'	0.415	2.786	3.896	4.376	4.336	4.183	4.003	3.796	3.566	3.311
30° 00'	0.434	2.822	3.925	4.405	4.296	4.103	3.883	3.636	3.366	3.066
20° 00'	0.440	2.860	3.950	4.420	4.260	4.030	3.783	3.511	3.211	2.886
10° 00'	0.448	2.894	3.966	4.427	4.247	4.003	3.743	3.456	3.146	2.811
0° 00'	0.453	2.922	3.974	4.427	4.229	3.965	3.693	3.386	3.056	2.711
30° 00'	0.458	2.940	3.976	4.420	4.209	3.927	3.643	3.326	2.986	2.636

Grades in Mile and 100 Ft.

In. M.	In. 100 Ft.	In. M.	In. 100 Ft.	In. M.	In. 100 Ft.	In. M.	In. 100 Ft.
0.5	0.0094	12.5	0.2567	24.5	0.4640	37.0	0.7008
1.0	0.0189	13.0	0.2462	25.0	0.4735	38.0	0.7200
1.5	0.0284	13.5	0.2557	25.5	0.4829	39.0	0.7396
2.0	0.0379	14.0	0.2660	26.0	0.4924	40.0	0.7576
2.5	0.0473	14.5	0.2746	26.5	0.5019	41.0	0.7765
3.0	0.0568	15.0	0.2841	27.0	0.5113	42.0	0.7954
3.5	0.0663	15.5	0.2936	27.5	0.5208	43.0	0.8144
4.0	0.0760	16.0	0.3030	28.0	0.5303	44.0	0.8333
4.5	0.0852	16.5	0.3125	28.5	0.5398	45.0	0.8523
5.0	0.0947	17.0	0.3220	29.0	0.5493	46.0	0.8712
5.5	0.1047	17.5	0.3314	29.5	0.5587	47.0	0.8901
6.0	0.1136	18.0	0.3409	30.0	0.5682	48.0	0.9091
6.5	0.1231	18.5	0.3504	30.5	0.5776	49.0	0.9280
7.0	0.1326	19.0	0.3598	31.0	0.5871	50.0	0.9470
7.5	0.1420	19.5	0.3693	31.5	0.5966	51.0	0.9669
8.0	0.1515	20.0	0.3788	32.0	0.6060	52.0	0.9879
8.5	0.1610	20.5	0.3882	32.5	0.6155	53.0	1.0038
9.0	0.1705	21.0	0.3977	33.0	0.6250	54.0	1.0237
9.5	0.1799	21.5	0.4072	33.5	0.6345	55.0	1.0417
10.0	0.1894	22.0	0.4167	34.0	0.6439	56.0	1.0606
10.5	0.1988	22.5	0.4261	34.5	0.6534	57.0	1.0796
11.0	0.2083	23.0	0.4356	35.0	0.6629	58.0	1.0985
11.5	0.2178	23.5	0.4451	35.5	0.6723	59.0	1.1174
12.0	0.2273	24.0	0.4546	36.0	0.6818	60.0	1.1364

Rule for Middle Ord. $\frac{72^{\circ} \times C}{8} = \text{Grade } 88$
 $a = \text{Abscissa}, C = \text{Curvature}$
 Radius: Angle computed from 100' Ch.
 Equal to in Tangential

Angle	Radius	Diff.	V.S.	Angle	Radius	Diff.	V.S.
0	5 68760	145	0.18	2.5	2547	3926	1491
10	34380	291	0.36	30	2456	4072	569
15	22930	436	0.54	35	2371	4217	527
20	17190	581	0.73	40	2292	4363	545
25	13752	727	0.91	45	2218	4508	564
30	11460	872	1.09	40	2149.0	4653	582
35	9823	1017	1.27	45	2084.0	4799	600
40	8595	1163	1.45	50	2023.0	4944	618
45	7640	1308	1.63	5.00	1910.0	5235	654
50	6876	1453	1.82	5	1859.0	5380	673
1.00	5730	1745	2.18	10	1810.0	5526	691
5	5289	1890	2.36	15	1763.0	5671	709
10	4912	2036	2.54	20	1719.0	5817	727
15	4584	2181	2.73	25	1677.0	5962	745
20	4298	2327	2.91	30	1637.0	6108	764
25	4045	2472	3.09	35	1599.0	6253	782
30	3820	2618	3.27	40	1563.0	6398	800
35	3619	2763	3.45	45	1528.0	6544	818
40	3438	2908	3.64	50	1495.0	6689	836
45	3274	3054	3.82	55	1463.0	6835	854
50	3125	3199	4.00	6.00	1433.0	6980	873
2.00	2865	3490	4.36	15	1348.0	7116	927
5	2750	3635	4.54	30	1274.0	7353	981
10	2644	3781	4.73	45	1207.0	8289	1036

Radius Angles Computed from 100' Ch.
equal twice the Tangential angle

Angle	Radius	Def.	R.S.	Angle	Radius	Def.	R.S.
5.00	1146.0	8722	1.091	16.00	521.7	17170	2.401
15	1092.0	9187	1.146	15	510.1	17610	2.456
30	1042.0	9595	1.200	30	499.1	20050	2.511
45	996.8	10030	1.255	45	488.5	20500	2.566
60.00	954.4	10470	1.309	12.00	478.3	20940	2.620
15	917.0	10900	1.364	15	468.7	21360	2.675
30	882.0	11340	1.419	30	459.3	21790	2.730
45	849.3	11780	1.473	45	450.3	22210	2.785
7.00	819.0	12210	1.528	13.00	441.7	22640	2.839
15	790.8	12640	1.582	15	433.4	23070	2.894
30	764.5	13080	1.637	30	425.5	23510	2.949
45	739.9	13510	1.692	45	417.7	23940	3.000
8.00	716.8	13950	1.746	14.00	410.3	24370	3.058
15	695.1	14380	1.801	15	403.1	24810	3.113
30	674.6	14810	1.855	30	396.2	25240	3.168
45	655.5	15250	1.910	45	389.6	25670	3.222
9.00	637.3	15680	1.965	15.00	383.1	26110	3.277
15	620.2	16120	2.019	30	370.8	26540	3.337
30	603.8	16550	2.074	16.00	359.3	27183	3.496
45	588.4	16990	2.128	30	348.4	28170	3.606
10.00	573.7	17430	2.183	17.00	338.3	29156	3.716
15	559.7	17870	2.238	30	328.7	30143	3.826
30	546.4	18300	2.292	18.00	319.6	31129	3.935
45	533.8	18730	2.347	19.00	310.9	32101	4.045

Table of long Chords

Angle	Radius	Length of Ch. beginning to second			
		1.00	2.00	3.00	4.00
1.00	5730.0	100	200.0	300.0	400.0
15	4584.0	100	200.0	300.0	399.9
30	3820.0	100	200.0	300.0	399.9
45	3274.0	100	200.0	300.0	399.8
2.00	2865.0	100	200.0	299.9	399.7
15	2547.0	100	200.0	299.9	399.6
30	2292.0	100	200.0	299.8	399.5
45	2084.0	100	200.0	299.8	399.4
3.00	1910.0	100	200.0	299.7	399.3
30	1637.0	100	200.0	299.6	399.1
4.00	1433.0	100	199.9	299.6	398.9
30	1274.0	100	199.9	299.4	398.5
5.00	1146.0	100	199.9	299.2	398.0
30	1042.0	100	199.8	299.0	397.6
6.00	995.4	100	199.7	298.8	397.6
30	882.0	100	199.7	298.6	397.2
7.00	819.0	100	199.6	298.4	396.2
30	764.5	100	199.6	298.2	395.7
8.00	716.8	100	199.6	298.0	395.2
30	674.6	100	199.5	297.8	394.7
9.00	637.3	100	199.4	297.5	394.1
30	603.8	100	199.3	297.3	393.2
10.00	573.7	100	199.2	297.0	392.4

Switzerland & Tyrope
Haut. Aug 4. Switzer to Eng. Ordinate Oct 18 Rail

Blank Page(s)

Natural Sines, Cosines & Tangents

°	'	Sines	Cosines	Tangents	°	'	Sines	Cosines	Tangents
15	00	436	.99999	00436	6	15	10887	.99406	10952
30	00	872	.99996	00873	30	13	220	.99357	11394
45	00	1309	.99991	01309	45	11	754	.99307	11836
1	00	1745	.99985	01745	7	00	12187	.99255	12278
15	02	181	.99976	02182	15	12	620	.99200	12722
30	02	618	.99966	02619	30	13	053	.99144	13165
45	03	034	.99953	03035	45	13	485	.99087	13609
2	00	03490	.99939	03492	8	00	13917	.99027	14054
15	03	26	.99923	03229	15	14	349	.98965	14499
30	04	362	.99905	04366	30	14	781	.98902	14945
45	04	798	.99885	04803	45	15	212	.98836	15391
3	00	05234	.99863	05241	9	00	15643	.98769	15838
15	05	669	.99839	05678	15	16	074	.98700	16286
30	06	115	.99813	06116	30	16	505	.98629	16734
45	06	540	.99786	06554	45	16	935	.98556	17183
4	00	06976	.99756	06993	11	00	17365	.98481	17633
15	07	411	.99725	07431	15	17	794	.98404	18083
30	07	846	.99692	07870	30	18	224	.98325	18534
45	08	281	.99657	08309	45	18	653	.98245	18986
5	00	08716	.99619	08749	11	00	17081	.98163	19438
15	09	150	.99580	09189	15	19	509	.98079	19891
30	09	585	.99540	09629	30	19	937	.97992	20345
45	10	019	.99497	10069	45	20	364	.97905	20800
6	00	10453	.99452	10510	12	00	20791	.97815	21256

Natural Sines, Cosines & Tangents

°	'	Sines	Cosines	Tangents	°	'	Sines	Cosines	Tangents
12	15	21218	.97723	21712	18	15	31316	.94970	32975
30	21	644	.97630	22169	30	17	30	.94832	33460
45	22	070	.97534	22628	45	32	144	.94693	33945
13	00	22495	.97437	23087	19	00	32557	.94552	34433
15	22	920	.97338	23547	15	32	970	.94409	34923
30	23	345	.97237	24008	30	33	381	.94264	35412
45	23	769	.97134	24470	45	33	792	.94118	35904
14	00	24192	.97030	24933	20	00	34202	.93969	36397
15	24	615	.96923	25397	15	34	612	.93819	36892
30	25	038	.96815	25862	30	35	021	.93667	37388
45	25	460	.96705	26328	45	35	429	.93514	37887
15	25	882	.96593	26794	21	00	35837	.93358	38386
15	26	303	.96479	27263	15	36	244	.93201	38888
30	26	724	.96363	27732	30	36	650	.93042	39391
45	27	144	.96246	28203	45	37	056	.92881	39896
16	00	27564	.96126	28675	22	00	37461	.92718	40403
15	27	983	.96005	29147	15	37	865	.92554	40911
30	28	402	.95882	29621	30	38	268	.92388	41421
45	28	820	.95757	30097	45	38	671	.92220	41933
17	00	29237	.95630	30573	23	00	39073	.92050	42447
15	29	654	.95502	31051	15	39	474	.91879	42963
30	30	071	.95372	31530	30	39	875	.91706	43481
45	30	486	.95240	32010	45	40	275	.91531	44001
18	00	30902	.95106	32492	24	00	40674	.91355	44522

Natural Sines, Cosines & Tangents

"	'	Sine	Cosine	Tang.	"	'	Sine	Cosine	Tang.
24.	15	41172	91176	45046	30.	15	50377	86384	58318
	30	41469	90996	45572		30	50754	86163	58904
	45	41866	90814	46100		45	51129	85941	59493
25.	00	42262	90631	46630	31.	00	51504	85717	60086
	15	42657	90446	47163		15	51877	85491	60681
	30	43051	90259	47697		30	52250	85264	61280
	45	43445	90070	48234		45	52621	85035	61881
36.	00	43837	89879	48773	32.	00	52992	84805	62486
	15	44229	89687	49314		15	53361	84573	63095
	30	44620	89493	49858		30	53730	84339	63707
	45	45010	89298	50404		45	54097	84104	64322
27.	00	45399	89101	50952	33.	00	54464	83867	64940
	15	45787	88902	51503		15	54829	83629	65562
	30	46175	88701	52056		30	55194	83389	66188
	45	46561	88499	52612		45	55557	83147	66817
28.	00	46947	88295	53170	34.	00	55919	82904	67450
	15	47332	88089	53731		15	56280	82657	68087
	30	47716	87882	54295		30	56641	82413	68728
	45	48099	87673	54861		45	57000	82165	69372
29.	00	48481	87462	55430	35.	00	57358	81915	70020
	15	48862	87250	56002		15	57715	81664	70673
	30	49242	87036	56577		30	58070	81412	71329
	45	49622	86820	57154		45	58425	81157	71989
30.	00	50000	86603	57735	36.	00	58779	80903	72654

Natural Sines, Cosines & Tangents

"	'	Sine	Cosine	Tang.	"	'	Sine	Cosine	Tang.
36.	15	59131	80644	73323	41.	15	66735	75784	87697
30	59482	80386	73996		30	66262	74896	88472	
45	59832	80125	74673		45	66588	74606	89253	
37.	00	60182	79864	75355	42.	00	66913	74314	90040
15	60529	79600	76041		15	67257	74023	90833	
30	60876	79335	76732		30	67559	73738	91633	
45	61222	79069	77428		45	67880	73432	92439	
38.	00	61566	78801	78128	43.	00	68200	73135	93251
15	61909	78532	78833		15	68518	72837	94070	
30	62251	78261	79543		30	68835	72537	94876	
45	62592	77988	80258		45	69157	72236	95729	
39.	00	62932	77715	80978	44.	00	69466	71934	96568
15	63271	77439	81703		15	69779	71630	97418	
30	63608	77162	82433		30	70091	71325	98269	
45	63944	76884	83169		45	70401	71019	99131	
40.	00	64279	76604	83910	45.	00	70710	70710	1.00000
15	64612	76323	84656		15	71019	70401	1.00876	
30	64945	76041	85408		30	71325	70091	1.01760	
45	65276	75756	86165		45	71630	69779	1.02653	
41.	00	65606	75471	86928	46.	00	71934	69466	1.03553

Tangents from 15° to 90°

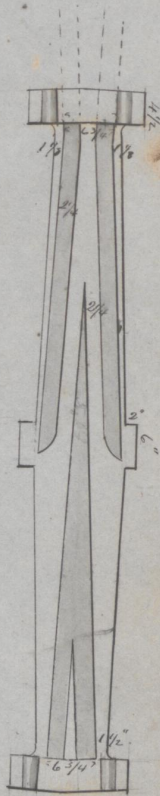
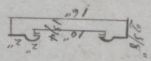
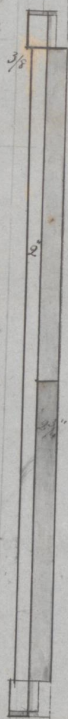
D. M.	Tangent	°	Tangent	°	Tangent	°	Tangent
16.00	1.0355	54.30	1.4119	63.00	1.9626	74.00	3.4874
50	1.0538	55.00	1.4281	30	2.1157	75.00	3.7321
47.00	1.0724	30	1.4450	64.00	2.0503	76.00	4.0107
30	1.0913	56.00	1.4826	30	2.0965	77.00	4.3314
48.00	1.1106	30	1.5108	65.00	2.1445	78.00	4.7046
30	1.1303	57.00	1.5399	30	2.1943	79.00	5.1445
49.00	1.1504	30	1.5697	66.00	2.2460	80.00	5.6712
30	1.1708	58.00	1.6003	30	2.2998	81.00	6.3137
50.00	1.1918	30	1.6318	67.00	2.3558	82.00	7.1153
30	1.2131	59.00	1.6643	30	2.4142	83.00	8.1443
51.00	1.2349	30	1.6977	68.00	2.4751	84.00	9.5144
30	1.2572	60.00	1.7321	30	2.5386	85.00	11.4301
52.00	1.2799	30	1.7675	69.00	2.6051	86.00	14.3007
30	1.3032	61.00	1.8040	70.00	2.7475	87.00	19.0811
53.00	1.3270	30	1.8418	71.00	2.9042	88.00	28.6363
30	1.3514	62.00	1.8807	72.00	3.0776	89.00	57.2500
54.00	1.3764	30	1.9210	73.00	3.2708	90.00	Infinita

$\cos. = \frac{1}{\sin.}$ $\sec. = \frac{1}{\cos.}$ $\tan. = \frac{\sin.}{\cos.}$ $\cot. = \frac{\cos.}{\sin.}$ $\sec. = \frac{1}{\cos.}$ $\csc. = \frac{1}{\sin.}$ $\tan. = \frac{\sin.}{\cos.}$ $\cot. = \frac{\cos.}{\sin.}$

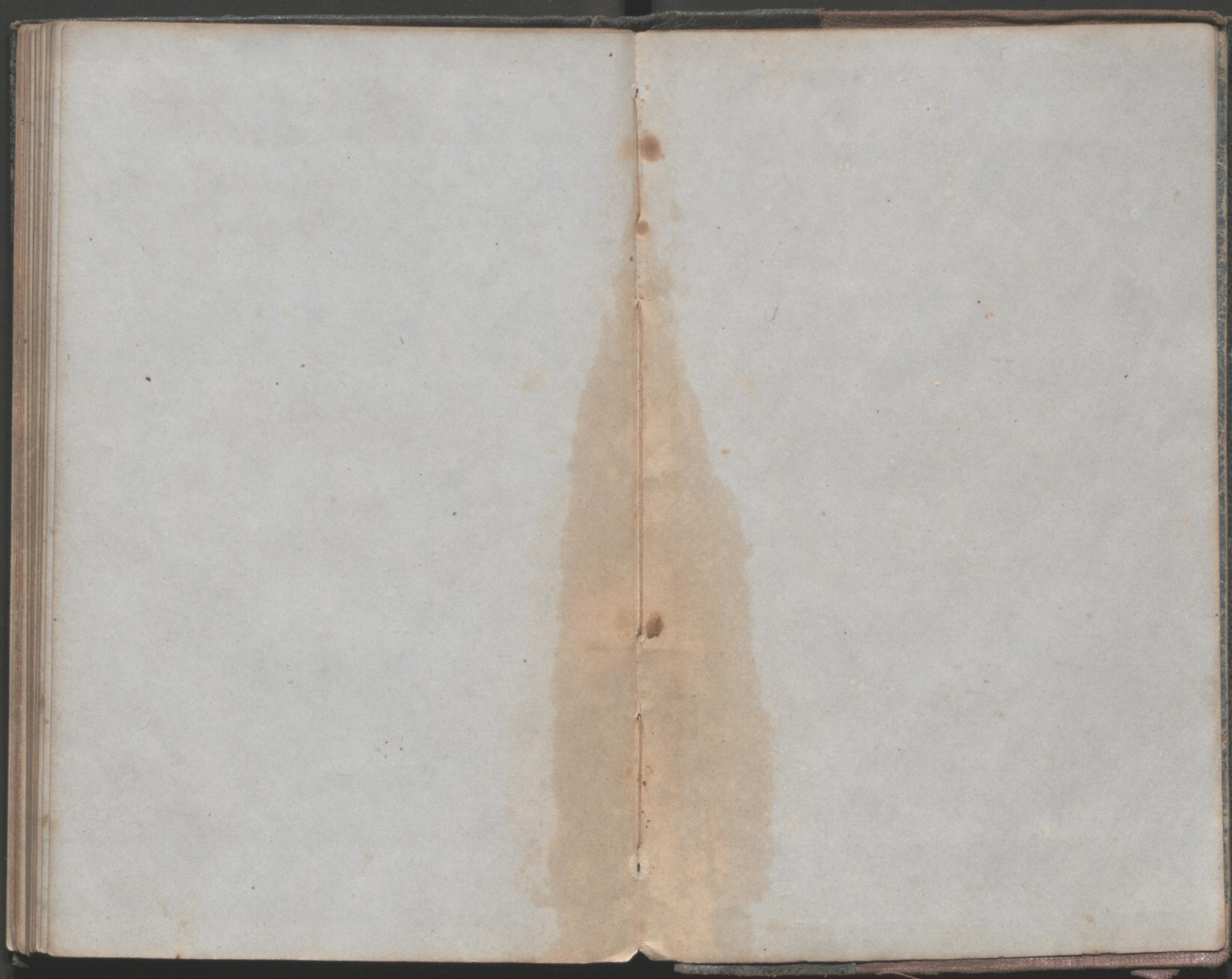
Sept 27 1866
 Strength of Truss
 Total length of cables from end
 of jump to face of rock

Angle	Point	Wings	Total
5° 14'	6.2"		7.11"

4 1/4" 3.2" 5.6 1/2"



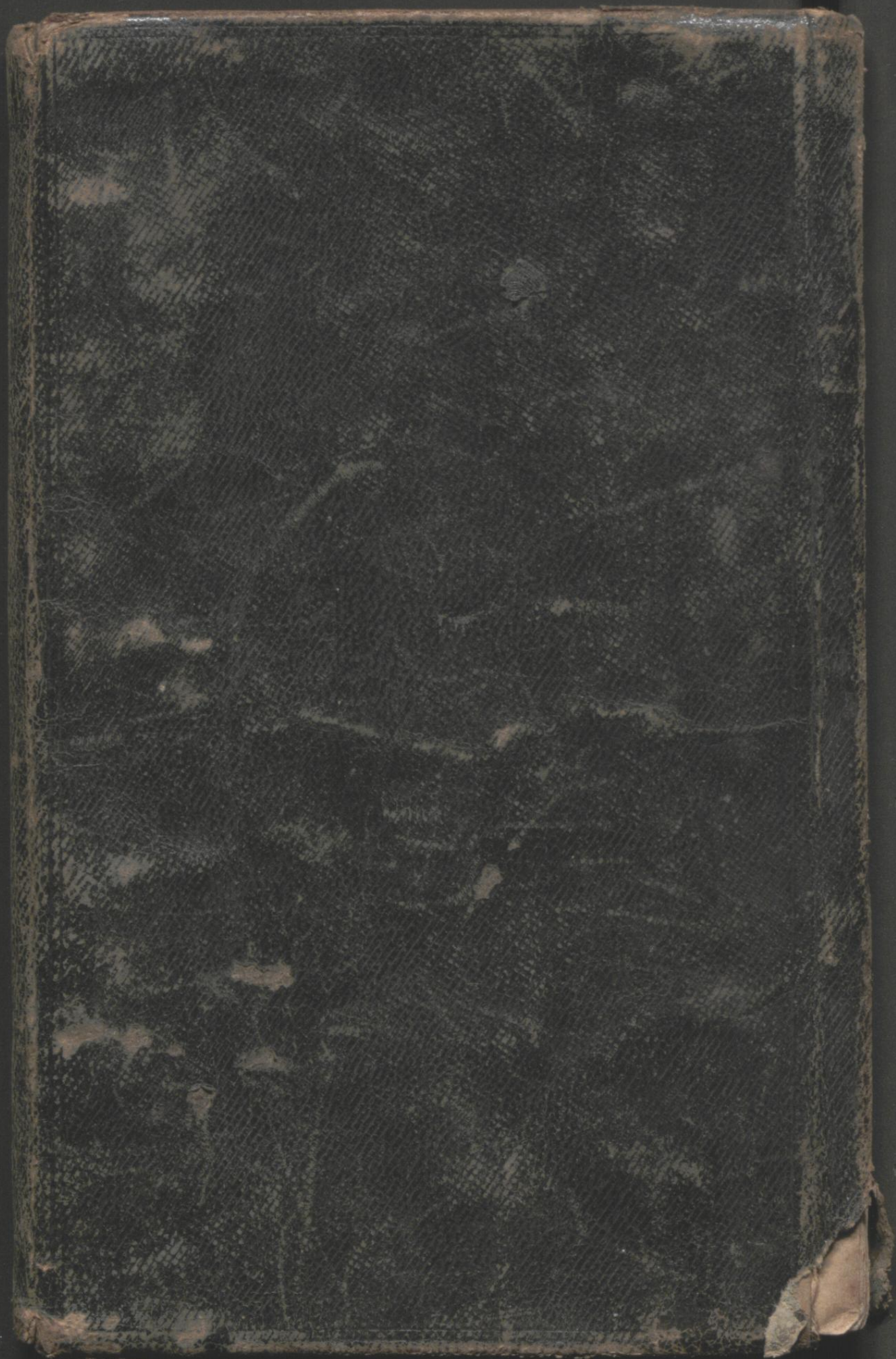
Price's Works Keokuk Ky Imp. Co
 Work opened Sept 27/66
 Rock 1 1/4[¢] per lb. - Tunnel 3 1/4[¢] - Earth .29[¢]
 Estimated cost per foot \$19,280.46



2.2 Kelgoon
3.2 Kuck
7.2 Sluice

2.2 Kelgoon
3.2 Ruck
7.2 Sluer





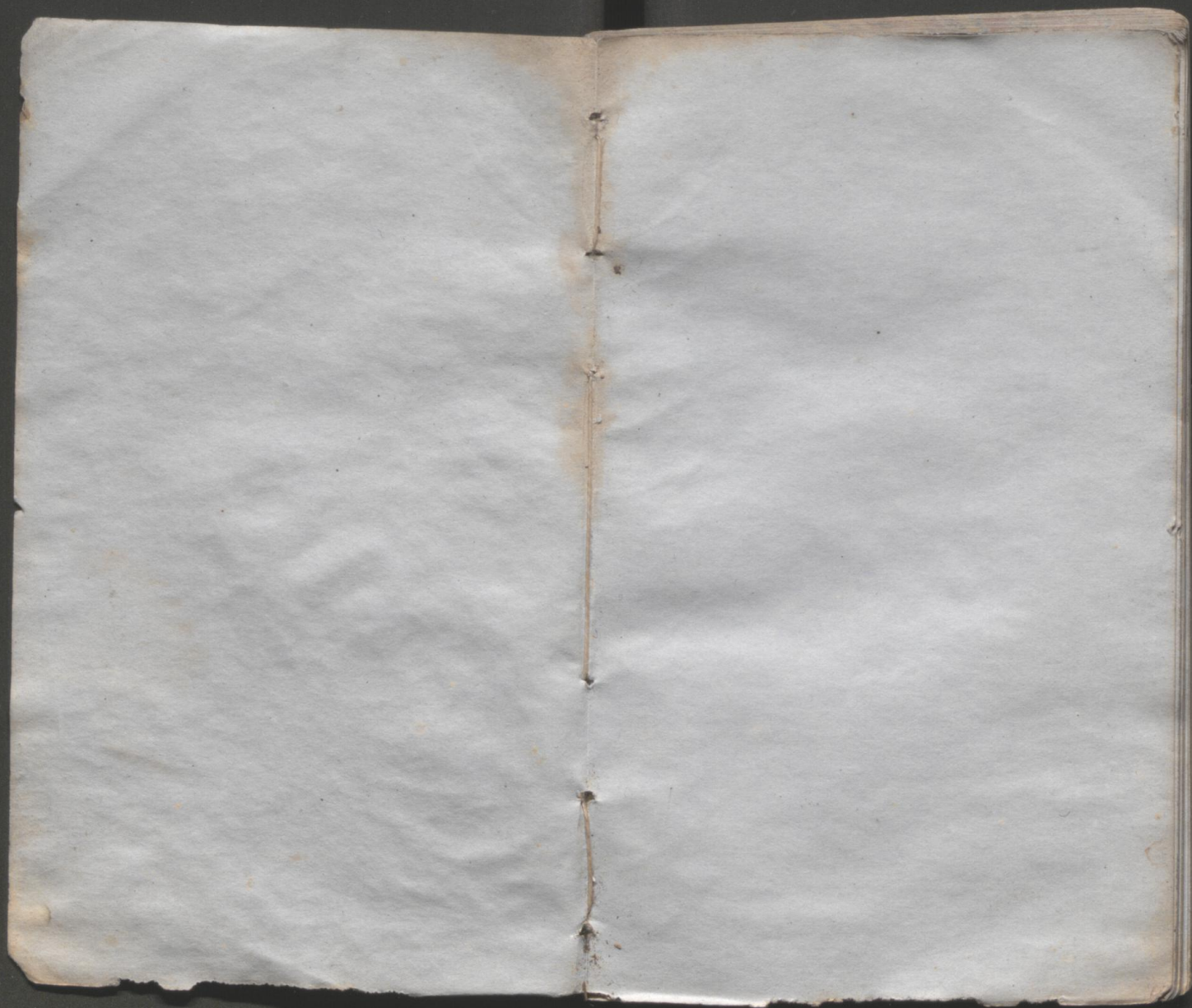
30

M. J. Hutton

1852

1791
65

for 101 - 1000 1000 1000



THE
UNIVERSAL DIARY:

CONTAINING

A BLANK SPACE FOR EVERY DAY IN
THE YEAR, FOR THE RECORD OF
PERSONAL ACCOUNTS, INTER-
ESTING EVENTS, &c. &c.

SUITABLE FOR ANY YEAR.

BOSTON:
TAPPAN & WHITTEMORE,
BOOKSELLERS AND STATIONERS,
114 WASHINGTON STREET.

TAPPAN & WHITTEMORE,
114 Washington Street, . . Boston,

IMPORTERS AND WHOLESALE DEALERS IN
FOREIGN AND AMERICAN
STATIONERY.

They also keep and manufacture to order, all the various
styles of

BLANK ACCOUNT BOOKS

In use — made of the best English or American Paper,
and warranted to give entire satisfaction.

TOGETHER WITH A COMPLETE ASSORTMENT OF

SCHOOL & MUSIC BOOKS,

Standard Theological and Miscellaneous Books.

☞ Our Stock contains, we think, as large a variety
as any in the city ; and we would respectfully invite
Traders, Teachers and others, to examine it before pur-
chasing elsewhere.

Orders from the country solicited, and shall receive
prompt personal attention.

Particular attention paid to furnishing Public and
Private Libraries.

114 WASHINGTON STREET.

INTEREST TABLE.—Showing the Interest from 1 day to 2 years, on from \$5 to \$1,000, at 6 per cent.

Dols.	DAYS.								MONTHS.							
	1	2	3	4	5	10	20	30	2	3	4	5	6	12	18	24
5	0	0	0	0	0	1	2	3	5	8	10	13	15	30	45	6
10	0	0	1	1	1	2	3	5	10	15	20	25	30	60	90	1.2
20	0	1	1	1	2	3	7	10	20	30	40	50	60	1.20	1.80	2.4
30	1	1	2	2	3	5	10	15	30	45	60	75	90	1.80	2.70	3.6
40	1	1	2	3	3	7	13	20	40	60	80	1 00	1.20	2.40	3.60	4.8
50	1	2	3	3	4	8	17	25	50	75	1.00	1 25	1.50	3.00	4 50	6.0
60	1	2	3	4	5	10	20	30	60	90	1.20	1.50	1.80	3.60	5.40	7.2
70	1	2	4	5	6	12	23	35	70	1.05	1.40	1.75	2 10	4.20	6.30	8.4
80	1	3	4	5	7	13	27	40	80	1.20	1.60	2.00	2.40	4.80	7.20	9.6
90	2	3	5	6	8	15	30	45	90	1.35	1.80	2.25	2.70	5.40	8.10	10.8
100	2	3	5	7	8	17	33	50	1.00	1.50	2.00	2.50	3.00	6.00	9.00	12.0
200	3	7	10	13	17	33	67	1.00	2.00	3.00	4.00	5.00	6.00	12.00	18.00	24.0
300	5	10	15	20	25	50	99	1.50	3.00	4.50	6.00	7.50	9.00	18.00	27.00	36.0
400	7	13	20	27	33	67	1.33	2.00	4.00	6.00	8.00	10.00	12.00	24.00	36.00	48.0
500	8	17	25	33	42	83	1.67	2.50	5.00	7.50	10.00	12.50	15.00	30.00	45.00	60.0
1000	17	33	50	67	83	1.67	3.33	5.00	10.00	15.00	20.00	25.00	30.00	60.00	90.00	120.0

EXPLANATION.—To find the Interest, look for the sum in the left column, under the head of Dollars, and the top of the column under the head of days or months, and the sum opposite will be the Interest required. Thus, 10 dollars for 30 days will be 5 cts.; for 24 months, 120 cts., and so on.

RATES OF POSTAGE.

LETTERS, not exceeding half an oz., and within 3,000 miles, 3 cts. prepaid, 5 cts. not prepaid; and the same for every additional half oz. or fraction thereof. Over 3,000 miles, double these rates. Foreign letters, from any post-office in the U. S., wholly or in part by sea, under 2,500 miles, 10 cts.; over 2,500 miles, 20 cts.; but no change is made in existing postal arrangements with foreign countries. Drop-letters 1 ct.; advertising 1 ct.

WEEKLY NEWSPAPERS not over 3 oz. sent from the office of publication to subscribers within the county, free; out of the county, and within 50 miles, 5 cts. a quarter; over 50, and less than 300 miles, 10 cts. a quarter; over 300, and less than 1,000 miles, 15 cts.; over 1,000 and less than 2,000, 20 cts.; over 2,000, and less than 4,000, 25 cts.; over 4,000 miles, 30 cts. Monthly Newspapers, one-fourth those rates; semi-monthly, one-half those rates; semi-weekly, double those rates; tri-weekly treble those rates; and oftener than tri-weekly, five times those rates. Newspapers less than 300 square inches, one-fourth the above rates.

ALL OTHER NEWSPAPERS, CIRCULARS NOT SEALED, HANDBILLS, ENGRAVINGS, PAMPHLETS, PERIODICALS, MAGAZINES, and other printed matter, (except periodicals as below,) including books and parcels not exceeding 32 oz., for every ounce or fraction of an ounce under 500 miles, 1 ct.; over 500, and less than 1,500, 2 cts.; over 1,500 and less than 2,500, 3 cts.; over 2,500, and less than 3,500, 4 cts.; over 3,500, five cents, — *to be paid in advance*. If by oversight unpaid, double those rates to be charged.

ON PERIODICALS, published quarterly or oftener, subscribers to pay half the above rates quarterly in advance. The publishers of newspapers, and of periodicals not over 16 oz., may interchange one copy free, and enclose bills to subscribers.

POSTAGE TO CANADA. *Letters* through to any office in Canada, ten cents per half ounce, prepaid or not at option. *Newspapers* and all printed matter the usual rates, prepaid to the line. Editors of newspapers exchange free. Postage the same to the other British Provinces.

OTHER FOREIGN POSTAGE, FROM ANY POINT IN THE UNITED STATES. To England, Scotland, and Ireland, by British or American steamers, 24 cts. a single rate, or half ounce, prepaid or not; newspapers (wrapped in a narrow slip, with both ends open,) 2 cts. prepaid. To Bremen, by American line, 20 cts. prepaid or not: newspapers 2 cts. prepaid. To other points on the continent of Europe, our inland and the sea postage is 20 cts., the residue of the postage paid abroad: newspapers via England, 4 cts. prepaid; not via England, 2 cts. prepaid. To most other countries of the world postage can be prepaid at any office in the United States, varying from 20 to 87 cts. a rate of half ounce, but in many countries the rate is one-fourth instead of one-half an ounce. Newspapers and periodicals, prepaid, may be sent to most foreign countries, postage generally 4 cts.

January 1, 185

January 2.

Left Milaw for Newcastle
at Gorham Friday night, on Saturday
morning took care, arrived at N-
Saturday Evening. - Thursday B Can
Left N for Portlance, Friday took
care for Gorham; at Bethel the night
at Porter's party Saturday

January 3.

January 4, 185

January 5.

January 6.

January 7, 185

January 8.

January 9.

January 10, 1852

Sunday January 11.

Left Milan for ^{Stratford} ~~Stratford~~ ^{Stratford} where
arrived in the evening: on Monday
up on Parks and Justice work
at night - since myself comfortably
located in a snug room, and
feel quite at home

January 12.

Thursday January 13, 1852

At work in the house arranging my notes of the work - Monday up on Foster and Parks work, dinner with Parks - Received a note from Westbrook regarding my presence in Portland & something in relation to the Street

January 14.

Thursday January 15.

At home all day, in the afternoon took stage for P. but shortly after starting received a letter stating that my presence was not required - at night attended a ball at Gouletts was in today

Friday January 16, 185

To Mr Edwards also to a Miss
Day, much pleased with what I
saw but having to remain up
all night - did not feel to day have
also taken a slight cold this morn-
ing the thermometer at -36 below 0
much complaining of frozen ears
and limbs

Saturday January 17.

At home in the morning - in the af-
ternoon were out - called on the
Misses Days. Mr Grodins and Mr Codd
my companions. Gaps got tight
promised me he would not drink
more for a year Thermometer 10°

Sunday January 18.

This morning Butler and Paine
called on me - saw my com-
panion of yesterday drink at
the bar. This afternoon - became
rather tight Thermometer
This morning at sunrise 0 - 23°

Monday January 19, 185

On ~~for~~ Parks and Foster
work - Thermometer 0-15

Tuesday January 20.

Left in company with Mr
Woodbury for Lancaster - Met
Johnson, the pedler, at Abbott
Lancaster in the evening
Ther. 0-10

January 21.

Wednesday - This morning
milder, some snow Thermometer
at 0
Left for Stratford at 10 A M
on my way up Saluta. Arr
ived Midd St. home at 3 o'clock

Thursday January 22, 185

Up on the works. Weather more moderate than heretofore. Friday - Remained at the house in the fore noon, in the afternoon down to see Goodwin.

Saturday out on the work. Mr. Carter and Lady arrived this evening. Weather more moderate.

January 23.

White Elm weights per cord	20592
Spanish oak	2449
Button wood	2391
Pitch Pine	1964
White "	1868
Lombardy Poplar	1774
1 cord green wood contains	
1443 lbs. of water	

January 24.

Sunday January 25, 185

More moderate, snow thawing. In day
Mr Johnson came up. Westbrook sent
up for me to meet him at Northumberland
in the afternoon came down with Mr
Somers at night - at Sargents

Monday January 26.

Went out to Milan with Mr. M-
tina at night to Pickers.
Tuesday came up with S.S. &
dined at Halls - up all night
with the dan and who continued
their amusement until 6 o'clock

January 27.

Wednesday January 28, 185

Up on Park's and too his work
felt stupid all day
Thursday made up estimates
rode over the river with
Westbrook at night - slept
with the car

January 29.

Hickory weighs for coal	4409
White oak	3827
Red "	3254
White Birch	3236
Apple tree	3115
Black Birch	3115
Gilson oak	2919
Maple	2668

Friday January 30.

Mr Westbrook here in the forenoon
in the afternoon out on Foster's
Saturday - up in the woods with
the Woodbury

January 31, 185

2.5" wide outside
3.6" long

Sunday February 1.

At Morse all day in the evening down to see Goodwin - Monday up in the wood office not finished - am told that J. Cummings was married last evening to an Irish lass with whom I became acquainted at the ball at Morse

February 2.

February 3, 185

Up in the woods Sunday
Wednesday Thursday and
Sunday stayed each night
to make Sunday evening a
little from home

February 4.

February 5.

62 meals at Mrs's

February 6, 185

February 7.

Saturday Morning over to
Lottis. Went up to the Hegar
House, took dinner, went up to see
two and Dr Brachette to a Sick
man, after dark left for French
when I arrived about 9 o'clock and
took tea - Sunday Morning went
over to Morris

~~Sunday~~

February 8.

Out on the work - at night stopped
at French - Tuesday took a walk
up on Bays and Cady's work, not
commenced yet - In the afternoon
I at Mrs. & Morgan came up
with us all night -

February 9, 185

February 10

Wednesday February 11.

Last evening learned that the Dr.
patient was dead. He was much
alarmed as this is his first. The
report today is contradicted.
This morning came over to
Goodwins in forenoon. Remained
of the day at the house.

Thursday February 12, 185

Up on Park work - gave them plates
for cutting the ice for abutments

Today up on Baggs work opened
a pit for the. The evening took
possession of our office

(10 meals at French)

Sunday February 13.

$\frac{16}{3} = \frac{30}{3} = \frac{30}{3} = \frac{30}{3}$

Saturday February 14.

On Lustre works

February 15, 185

Monday February 16.

Moderate - This morning 4" Snow
continued snowing all day
In the forenoon off with Luther in
pursuit of a woman - afternoon at
home - Roy all came in at
noon

February 17.

Tuesday. Upon 125 returned at
noon - in the afternoon remained
at home - in the evening ~~met~~
~~an acquaintance with Abigail~~
Wednesday down in Parks cold all
day. at home afternoon

February 18, 185

February 19.

Thursday. The monitor at 0-32
No work today Roy all brought
in two letters for me from Hb -
(Jan 29 all right folks will)

Friday Morn, colder - In the after-
noon went with Mr Foster and
Shannon down to Stratford to a
dance

February 20.

February 21, 185

Saturday 21 This morning more miles
fell rather stupid having been up
all night. Went down to North
umbria in the fore noon after
noon returned to Kegan
Sunday. Snowing weather mod-
erate

February 22.

Monday February 23.

Monday up on Lic 126
Tuesday on See 123
in afternoon Mr. Trook and
Robinson came up
in the evening went down to
French. Remained all night

February 24, 185

Wednesday February 25.

Left - Evening a letter from
H. - This morning returned from
Toughs, took B and made up
Estimates in the afternoon -
quite moderate

Thursday February 26.

Met Westbrook at Toughs, al-
so saw Mr Wood and have
been requested to be in Portland
on Monday next, to arrange some
matters in relation to the street

Friday February 27, 185

Cold this morning - up on Sec 125 in
the afternoon at work on Fusties
Saturday 28 Stormy on Parks in
the morning, in the afternoon re-
mained at home, at night the
hurricane

February 28.

Sunday February 29.

Blow hard all night - about 6" snow
fell during Saturday afternoon and
last night. This morning left the
woods to meet the stage for North
umberland - remained at Morse
the day, and all night - The storm
preventing the stage

Monday March 1, 185

Letter came over to Morse's this morning and proposed taking me down with him to the Falls - arrived there in the afternoon where waited until the stage came down when started for Leucaster arriving in the evening

Tuesday March 2.

This morning snowing - took stage at 4 a.m. for Gorham where we arrived about 9 but found the cars gone having left early in the morning anticipating trouble in passing through, remained at Gorham all day

Wednesday March 3.

This morning took car for Portland found track badly drifted, so delayed by this that did not reach P. until 8 in the evening

Thursday March 4, 185

Took K & P road for home where
arrived without much detention
about 1 o'clock - found M. Sick had
not left her bed for any length of
time for some days - Spent boy then
in the afternoon took a walk over
the bridge

March 5.

Friday, Saturday & Sunday about
the village making calls and follow-
ing that - considerable employment
known as loafing

March 6.

March 7, 185

Monday March 8.

This morning left home rather reluctantly for Portland not any thing of interest on the road, arrived at P. in the afternoon, recd. of Mr. Bennett 140 \$ due me since 1850. paid Mr. E. Borrowed money, and sent 20 \$ to H. - Recd of Mr. E. 200 \$ with which am to purchase Mr. Wood's paper - Uncle Gray married since I saw him last.

Tuesday March 9.

This morning took care for Gorham Met C. Morgan at Locks Mill where he has taken wife, came up leaving his wife there. Mr. Weston came up with us. Arrived at Gorham about noon and directly after dinner took stage for Lancaster - Rainy afternoon.

Wednesday March 10, 185

Last evening, as I sat in the bar-
row saw an individual, the coast, and
making certain signals which I
supposed intended for myself af-
ter much maneuvering made out
ourselves to be paternally allied -
The rain having abated left in
the morning with Morgan for Bismarck
arrived at Trench about noon and to-
day in the afternoon March 11. went up to camp

Thursday, up on 25, in the afternoon
took a walk down on Park's work
Friday 12 in the morning up on 25 & 6
returned at noon. Osgood came
in and dined with us. in the
afternoon went up to make an at-
tention in the river on 26 by West-
brooks against

March 12.

Saturday March 13, 185

On 13, completing the altivation
remained all day, dined with M
Wood - Sunday 14th Raining - at
home all day, wrote to H, at
night - rained hard -

March 14:

Monday March 15.

In the morning upon 25 - commenced
raining about 11 returned to the Shar
by cleared raining at noon - in the
afternoon down on parks, commenced
raining again about 4 - Shannon
did not go out having cut his foot
last Saturday

Tuesday March 16, 185

Morning about the house - in the afternoon on 26. Met Westbrook and returned to Shanty. Evening down at Parks to consult Westbrook in relation to Bridge Foundation - Shannon left for Portland with Foster

Wednesday March 17.

This morning in company with Royall and Salsett out on a deer hunt returned about 3 without any game. The remainder of the day in the Shanty

Salsett sick this evening from the effects of his jaunt perhaps.

Thursday March 18.

This morning down at Parks. returned at noon - afternoon Westbrook here and we went with him down to the bridge decided to put in Riprap foundation -

Friday March 19, 185

Up on Sec 26 all day
M. and at the Wood
Saturday 20 On public work
in the morning after noon
at work a 24

March 20.

Sunday March 21.

This morning down to French
did not find any letters come
to directly home and wrote
letter to H.

Monday March 22, 185

This morning up on field 26 and
dined at Mr Woods when I met
Mrs Patch Late Miss Mitchell as-
sivee home about 3 o'clock and
remained in the house the re-
mainder of the afternoon

Tuesday March 23.

Stormy + On 23 in the morning
returned to the shanty in the
fore noon and remained in-
till near night - Brackett and Wood-
bury came up to see us - went
down to tracks with them, when met
Sobdell and C Thompson, sent a boy
down to the office returned with two
letters from March 24. Snowing hard

Wednesday returned to the woods.
this morning 6" snow on the ground
at home draughting all day
A courts hip Sunday

Thursday March 25, 185

This morning down on 23, took estimates and returned to the Shanty Robinson came in and took dinner with us: his little boy with him. In the afternoon making up estimates

Friday, March 26.

Morning indications of storm rain in the afternoon with thunder at home all day drizzling

Lassett and Royall are at Bama a lady the cause - she came in to advise with me but had not courage to mention the matter lost a letter late

Saturday March 27.

This morning upon 26 taking estimates returned in the forenoon to the Shanty in the afternoon remained in on estimates

Sunday March 28, 185

This morning Pam and but
len came down to see us
Remained all day - in the
evening wrote to H -

Monday March 29.

This morning up on 26 and 27
Dined at Mr. Wood's, returned
home directly after dinner
Remained in the afternoon
at work on Bridge Day H -

Tuesday March 30.

In morning down on 23
at home at noon - Mr. Wood
and Goodwin here to dinner
Drove to the Low Bridge in the
afternoon met Shannon and
Richards - He with us all night

Wednesday March 31, 185

In the morning on 26 - at home
at noon and remained in the
remainder of the day

Thursday April 1.

At home from noon. Snowing at
noon cleared up - went down
to the office did not find any
letters

Friday April 2.

In the morning on 26 Men
idle

Saturday Morning at Bucken
23. in the afternoon out with the
Dr called on the Broken leg -
over at North 13

April 3, 185

Sunday April 4.

Last night - with the Dr. He called
out at 12 to attend an an Irish
woman, too late - Up on Cadogan
with Joking, at Lincoln St -
Saw the by dressed, returned to
the County - the new adminis-
tration commences

Monday April 5.

about at the Bridge, remained
at home the remainder of the
day - Tuesday 6 - at home -
At the office in the evening
not any letters or papers

April 6, 185

Monday April 7.

This morning Mr Emerson
brought me a letter from
H.

April 8.

Friday

April 9, 185

~ ~ ~ ~ ~
Fine day - Royall sick - Shannon
and myself up on 26 - dined at
Mr. Woods

Saturday

April 10.

April 11.

April 12, 185

April 13.

April 14.

Thursday April 15, 185

Left the woods this morning at 9
for home, walked over to Morse's
when we took the stage at noon
aimed at Gouletts - snowing in
the afternoon and whirling being
bad did not reach Lancaster until
evening - ~~snowing all the afternoon~~

Friday April 16.

At 5 this morning left on wheel
for Gorham - Whirling very bad &
foot to 18" of snow having fallen during
the night at Jefferson Mills ex-
changed our wheels for a pair of rollers
standing the change could not proceed
faster than a walk did not arrive
at Gorham until 2

Saturday April 17.

This morning took freight train
thinking to reach Farmouth
in season for Bath train
during stop at Falls called at
Mr Cobbs - Not in season

Sunday April 18, 185

Much disappointed that I did
not reach in season for the Bath train
cannot reach home until Monday
Dined with Mr. Eaton. He hav-
ing a bad cold did not attend
meeting. Rather unpleasant
during the day

Monday April 19.

This morning took Road for Bath
Met on the train a Mr. Tice with
whom I became acquainted on
my way down on the freight, left
at the port, where he resides
invited me to see him, good fellow
Had a cold ride out from Bath
found the family well
April 20.

Tuesday Wednesday and
Thursday rainy and cold
loafing about the street

April 21, 185

Friday April 22.

Charles being at Shups cut
took a horse and waggon and
went after him - being closely
shaved he did not know me.
The Tylor family very polite
said a pleasure to see me.
Returned in the afternoon -
Showery all day -

Saturday April 23.

Not raining but colder
and so wet that our
cannot get around

Sunday April 24, 185

A pleasant day - In the morning took a walk with Charley up to the cemetery, saw the graves of my old friends Elliott and Nichols - many sad recollections

Monday April 25.

The boat arriving at noon bid adieu to Etta and the family, and left again for the Hogue. Had a fine run to Portland where we arrived about 4.

In the evening up at Lancaster Hall to see Mrs Adams perform.

Tuesday April 26.

Took cars this morning for Gorham where we took dinner. In the afternoon had a tedious and unpleasant time going over to Lancaster - arrived in the evening cold & fatigued - Met Foster at Minot.

Monday April 27, 185

This morning took stage again
for St. Mary's. Cold and stage
crowded - Tassell whom we
met at Gorham entertained
us somewhat by his jokes -
dined at Gouttets
Arrived at the Shanty at
4 feeling much fatigued and
wishing my April 28. at home

Tuesday - Taking estimates
and looking over the work
Cold & cloudy all day

April 29.

Tuesday April 30, 185

A pleasant day, at work
on Sect^s 123 and 4

Saturday May 1.

On 27th this morning, at noon
commenced raining and re-
turned home

Sunday May 2.

Rainy in the forenoon. Wrote to
M. L. H. afternoon out shooting and
raising land

Monday May 3, 185

Pleasant in the morning down in
Parks. Of main day at
home

May 4.

May 5.

May 6, 185

May 7.

Saturday May 8.

This morning, not having much to do, went down to the river in company with the Dr. & visited the Mineral Springs in the afternoon. Returned to the hotel the Dr. with me going up to Wood

Sunday May 9, 185

Sent a letter to N. S. also
one to H. At the house read-
ing and writing a portion of
the day Target-Shooting also
and Sky-larking the command
Shamsh left for home hear-
ing his father was sick

Monday May 10.

On 26 in the morning: justice
has taken out some 1500 or
2000 Gal - A man died from
the effects of a blow in the ab-
domen by a bar: a woman
also sick in childbed, not
likely to live. Dr. Thun and
Wood came down & dined with us
~~Monday~~ May 11.

Man died on 26 today
was hurt by bar

Wednesday May 12, 185

This morning at Park sitting
tong grades thru all day.
Mead did not work all day
the wake of man who died on
26 - Woman died in child-bed
on 26 this morning

Thursday May 13.

This day waiting for West-
brook to come - The woman
who died on 26 in child-bed
was taken by today-men etc

Friday May 14.

At home making calculations all day
Westbrook came in at noon
after dinner down on the
graze - South - Park at the
bottom

Saturday May 15, 185

At the bridge this morning went down to Trunks. In company with the Dr went to see a rock some 3 miles below Trunks it was some 18 ft high 24×19 on top smaller at bottom. Raised a tree against it and had a smoke on the top which was a plain surface.

May 16.

Sunday - Left Trunks early this morning arrived at the shanty before the boys were up - down at Parks at 10 o'clock to forward papers. Munt and myself called at Trunks then over at the mineral spring.

Monday May 17.

This morning up on Eb changing line and grades - in the afternoon shaver - dined at Mord, home at night.

Tuesday May 18, 185

On 27 this morning. Down at noon
afternoon on 23 - At night a letter
from H -

Wednesday. Mr. Morton came
here this morning on his way to
Island Pond - Afternoon down
on Dec 123

May 19.

Thursday May 20.

Sunday May 21, 185

To day attending him up on 26 & 7
Hall with us - On way home
in the afternoon Mr. (Mr. 1st)
who visited me to a company and
up to 130 returned Saturday
forenoon to Edwards with us
all dined at Foster's - Westbrook
informs me I have charge of 122

May 22.

Sunday May 23.

This morning Edward left
for Regan - Lightning from all
the middle of the day
Westbrook & Robinson up
on the line returned in the
afternoon.

Monday May 24, 185

Changing Grades again

Tuesday May 25.

On 26 Changing Line Edward,
Robinsons and Britany also Hall with
ad

Wednesday May 26.

Changing line on 27
E. R. went over to Stratford
this evening

Thursday May 27, 185

In the morning out chaying lin
on 24 - in afternoon out on 22

Friday May 28.

Making Estimates - This morning
Wintay left for Stratford

Saturday May 29.

Over on Goodwin's work making
Estimates in the afternoon then
to the woods

May 30, 185

May 31.

June 1.

Much trouble with fire wood
Shanties Burn, much alarmed
for our packed up everything

June 2, 185

June 3.

Blank Page(s)

June 4.

June 11, 185

June 12.

Hoall at work for company.

Sunday June 13.

To day out to meet Brackett
did not see him - wrote to Ho, also
to Shannon

Monday June 14, 185

While at - Comm. Budget Andinoos at
one of Johnson's Teamsters handed
me a bill against J. for Labor, also
notified me in order that he might
call on the Company for his pay.

June 15.

June 16.

June 17, 185

Tuesday June 18.

Chammon returned
in the afternoon down at Leuch
but with the Dr fishing. A good
netting in the shower

Saturday June 19.

This morning made arrangements to go up river, after lunch
we came down from the woods
over Dr at Prosser and had
a pleasant ride up to Canaan
put up at Bailey's

Sunday

June 20, 185

In the morning, over into his
majesty's power - Rode
down to Colebrook attended
meeting and after dinner re-
turned to the Regan brood

June 21.

Sunday

June 22.

On the work in straight
rain in the afternoon, found
on my return the Dr and West-
brook at the Shanty

Wednesday June 23, 185

In company with Westcott
and Gordon - went over the
work in Stratford

Thursday June 24.

On Dec 27 since at - Mr
Evans than 5

Friday June 25.

At work in the office - Morning
Rainy afternoon fair -
S. S. Thompson called

June 26, 185

June 27.

June 28.

St.
a
G
m
Th

June 29, 185

June 30.

Thursday July 1.

In the morning down at the bridge
Dined at Lovings - Afternoon Foster
and Merrill came over. rode down
to Northumberland. Foster returned leav-
ing us to take the train which ran up to
the bridge with Brown for the first time

arrived at Lays late in the evening - wet - having
had a small - rain the latter part of the way.
Remained with westworth all night

Tuesday July 2, 185

Left this morning early to meet the
4 1/2 A.M. train, got a good drenching.
Arrived in Portland without acci-
dent and took the 1 o'clock train for
Bath where found a stage ready to
leave for Saco. Found all the family
well.

Saturday July 3.

Tramping about the streets and
making calls.

Sunday July 4.

Attended meeting this morning
with H. feeling free believe I am
inclined to think I did not hear
all the sermon - afternoon over at
my Father's

Monday July 5, 185

All the young folks away - no indications of the 4th except the explosion of crackers and small arms in the evening went up to the oyster Banks in company with Roy Bethel Selena and H. - met on our return a company of Ladies and girls, serenading en route for the same place - commenced singing soon and they returned

July 6.

Wednesday July 7.

Took place this morning for Bath - dined at Isaac's took the afternoon train for Port

July 8, 185

July 9.

July 10.

Sunday July 11, 185

at Church with Brackley all day
at 5 o'clock attended a meeting at
School house

Monday July 12.

In the forenoon at the bridge
dined for the first time at Mr
Booker's, in the afternoon down at
Luncheon at the Springs with the Dr

Tuesday July 13.

Left the line, dined at Mr Car-
dy's home at 5 o'clock unpacking
my books

Wednesday July 14, 185

Rainy - In the house all day

Thursday July 15.

Down at the bridge this morning, also over to Gausby in the afternoon down at French.

July 16.

Saturday July 17, 185

This morning no company
went over the line - dined at
McRens Shanty - in the afternoon
in company with Edwards & taken up
to Island Pond where we remained
all night at River Woods Shanty

Sunday July 18.

This morning all hand up at
the Canadian office near
Cargill's was introduced to
Miss and Mrs

on returning to the Shanty met
Baldwin rode down with him to
Cady's where met Panu with Brackett
Hove which I mentioned and took down
Monday July 19.

This morning left Frenchs
after breakfast and went over
to Stratford Edwards being,
away returned home to dinner
in the afternoon over at Davis-
by to Mr & Mrs Saw well brot.

Tuesday July 20, 1852

This morning up on 12334
at home at noon in the after
noon down at the office did
not find anything from H
wrote to her this evening

July 21.

July 22.

July 23, 1852

Saturday July 24.

Up on 28 examining the land returned in the afternoon and gave them points for the lower course, on foundation of the Comm. Budget

Sunday July 25.

Came to see one to day. Talcott Shamore & Baldwin Dr. called. I am dined - afternoon Dr. who had been up to visit a leg called and remained to tea - after tea down to F.D. with him remained until 11:30

Monday July 26, 185

Commenced raining in the night

July 27.

July 28.

July 29, 185

July 30.

July 31.

August 1, 185

Monday August 2.

This morning left for Portau
arrived there found 26-

August 3.

Left P this morning for It
arrived at Coats at sea

August 4, 185

August 5.

Blank Page(s)

August 6.

August 7, 185

August 8.

August 9.

August 10, 185

August 11.

August 12.

August 13, 185

Saturday August 14.

This morning in company with B-
left for Lancaster where we arrived
in the afternoon. Introduced to
his mother Mr John and saw his
brother & wife whom I saw at Truck
John, deranged. well read and an
extraordinary memory

Sunday August 15.

In company with the family at-
tended meeting at the village
Subject the Locality of Heaven
the Ponderosity of the Soul &c
In the afternoon over the farm
and made a call on May. W.

August 16, 185

an uncle of the Dr. the Maj. has been
one of the leaders in the Democratic
sands - is a man of good natural
abilities and ~~he~~ is a great read-
er - on the whole was much pleased
with him - Monday 16 dined to
the Morgan feeling much fatigued

August 17.

August 18.

August 19, 185

August 20.

August 21.

August 22, 185

The Dr. spent the day with me
we had a fine time, as he says

August 23.

August 24.

August 25, 185

August 26.

Blank Page(s)

August 27.

August 28, 185

August 29.

August 30.

August 31, 185

September 1.

September 2.

September 3, 185

September 4.

September 5.

September 6, 185

September 7.

September 8.

September 9, 185

September 10.

September 11.

September 12, 185

September 13.

September 14.

September 15, 185

Thursday September 16.

Left Mr 6 or 10 this morning with
Ho for Iron (Bran \$4.75)

	29.69	6 1/4	4.75
up to Aug 3	600	1650	6 1/4
\$ 35.69		66	
Settled to this date	\$ 29.69		

Ho here 43 2/3 days or 6 1/4 weeks at
4.75 per week = 29.69

September 17.

September 18, 185

September 19.

September 20.

Tuesday September 21, 185

Arrived at Corks from New Castle
this evening

September 22.

September 23.

Settled with Mr. Cook up
to Sept 21st evening -
Board of self and 4.75 per week
 $6\frac{1}{4} = \$29.69$

September 24, 185

September 25.

Blank Page(s)

September 26.

September 27, 185

September 28.

September 29.

September 30, 185

October 1.

October 2.

October 3, 185

October 4.

October 5.

October 6, 185

October 7.

October 8.

October 9, 185

October 10.

October 11.

October 12, 185

October 13.

October 14.

October 15, 185

October 16.

October 17.

October 18, 185

October 19.

October 20.

October 21, 185

October 22.

October 23.

October 24, 185

October 25.

October 26.

October 27, 185

October 28.

October 29.

October 30, 185

October 31.

November 1.

November 2, 185

November 3.

November 4.

November 5, 185

November 6.

November 7.

November 8, 185

November 9.

November 10.

Wednesday. Left this morning
for the - Myanmar in Portland
all night - Crossing took care
for Bath - at Jagadine all night

November 11, 185

November 12.

Rainy at New Castle

November 13.

November 14, 185

November 15.

November 16.

Tuesday - Arrived at B
from home this evening
lick with cold
found 3 or 4 in snow fall on
Friday

November 17, 185

November 18.

Blank Page(s)

November 19.

November 20, 185

November 21.

November 22.

November 23, 185

November 24.

November 25.

November 26, 185

November 27.

November 28.

m

November 29, 185

g

November 30.

65

December 1.

4

December 2, 185

5

December 3.

6

December 4.

S

December 5, 185

M

December 6.

J

December 7.

W

December 8, 185

J

December 9.

Sunday

December 10.

Down to Northumberland this Eve
on Card

Saturday December 11, 185

Returned from N this eve 'no stages'
Colder with snow

Sunday December 12.

Snow 7" deep but no frost in the
ground; drove with the dog

Monday December 13.

This evening cars run into
VT for the first time

December 14, 185

December 15.

Blank Page(s)

December 16.

December 17, 185

December 18.

December 19.

December 20, 185

December 21.

December 22.

December 23, 185

December 24.

December 25.

December 26, 185

December 27.

December 28.

Wednesday December 29, 185

Thursday December 30.

This evening Sept 5 on the Great
Train, track had left the train
with my valise and walked
on to Northumberland where
arrived at 12 P.M.

Friday December 31.

This morning the train not
being in before the train for
P. Left started without my
valise. arrived in P. in the
afternoon, in the evening took
cars and arrived at Bath

1852

Jan 31. C.A. Foster. to 5 1/3 gal
Prockin' from June 37 1/2 2.50

Mar 4th San. Flys. To Cash 35.00

Apr 10 C.A. Foster To Cash 25.00 +

Apr 20 San. Flys To Cash 30.00

" 24 " " " Glass 6.00

May 1st C.A. Foster To Due Bill 2.04

" 12 " " " Cash 3.00

May 16 J.W. Fattett. To Cash Paid 20.00

" " C. Royall To pants 4.00

" " " " Knife 1.00

He all worked 5 days for Company
 up to June 13

Royalls watch left at Banks & Holch

July 7th San. Flys To Cash 50.00

July 11 C.A. Foster To Due Bill 35.00

July 13 He. Cash put to To watch 9.00

" " ~~C.A. Foster~~ By order on 9.00

July 13 C.A. Foster To Due 9.00

" " By Bill at
Miners 2.25

July 19th Holyroodhy Dr
To Jamm R 350 3aw

August 9th Mr Cook Jr

To Cash 10.00

Hallseth Jr

By Cash 16.00

At S-R R R

Paid expenses 38y 1/2 345

Royall To Cash expenses 2.28

Aug 19th Royall By Cash 5.00

Blank Page(s)

C A Foster Dr	Jan 31 1852	
5 ¹ / ₂ Yds Brocton	c 37 ¹ / ₂	2.00
Apr 10	bath	25.00
May 1 st	Due Bill	2.04
12	bath	3.00
July 11	Due Bill	35.00
		704

52	50 \$ to Woodbury	c 4 1/2 ct	52	52 2
100	"	Baldwin " 6 " "	106	= 6
150	to Emerson	in notes	153	= 3.
50	"	Woodbury for note		

Megan Lodge		5
Carpeting 107s	e 37 1/2 ^{ds}	3 75
Bowl & Pitcher		63
2 Linn black		16
Li M	21	62
Paper Tacks		.08
Sticks		
Soap		25
1 Gall Linia		75
Paper	not used	35
1 Gall Linia		80
1/2 "		42
		7.46
		2.49
		2.11
		\$ 2.28

E's cloak

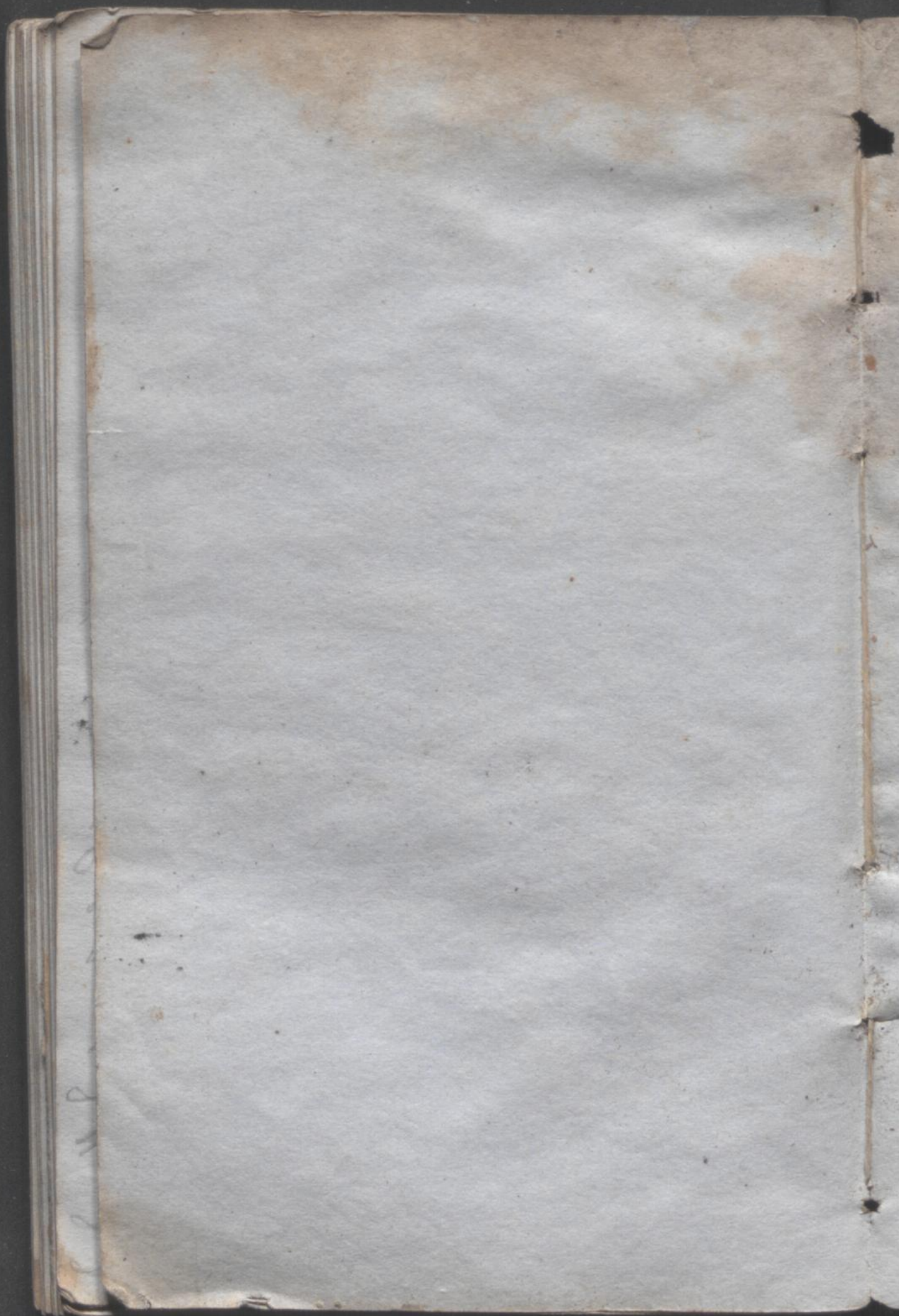
1 1/2 Yds Lyonese Blue or Drab
 Or 1 yd Liberty
 1 1/2 Yds Blue Buttons, silk cover
 ing and 3 yds Trimming 3/8 in wide
 Abby's Shred No 6 Common
 1 1/2 Yds Bk Silk 1 yd wide 7/8
 2 yds Bk Ribbon 1 1/2 in wide
 4 Skins Blue Sewing Silk
 Do Bk for E
 2 Lbs white Glazed Wadding
 2 yds Pink or Blue Cambric

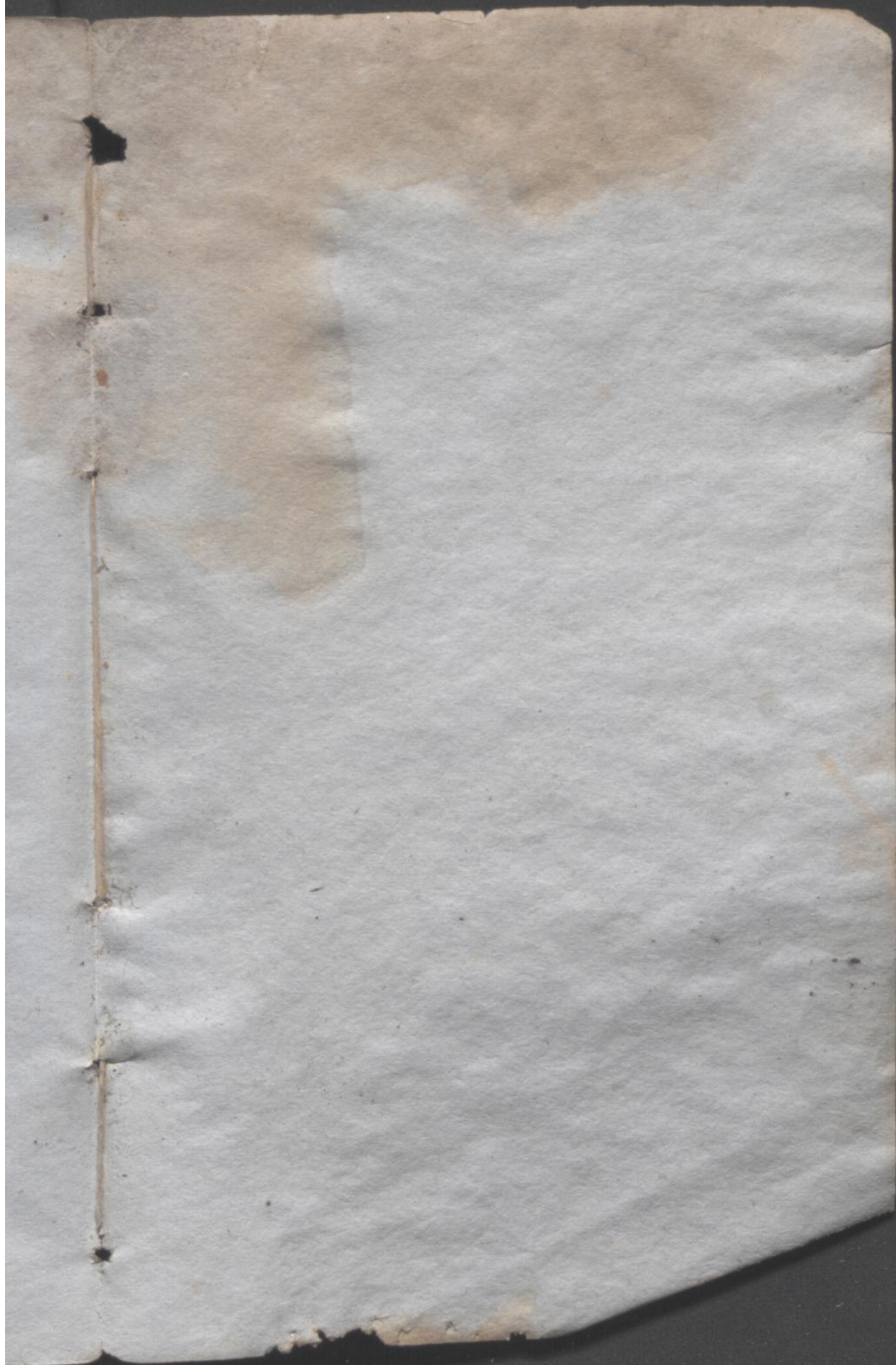
3

Long

$$\begin{array}{r} 370 \\ 228 \\ \hline 1.47 \end{array}$$

ord
n
7/8
cle





Black 3 3/4 x 2 1/2

$$\begin{array}{r} 16 \\ 2 \\ \hline 32.00 \\ 2.00 \end{array}$$

18

$$\begin{array}{r} 2 \\ \hline \end{array}$$

36

2.25

1.25

2.50

.63

.25

7.0

1.8

2.5

44.08

35.24

8.84

1.75

7.07

3 1/2 x 2 1/2

2.48

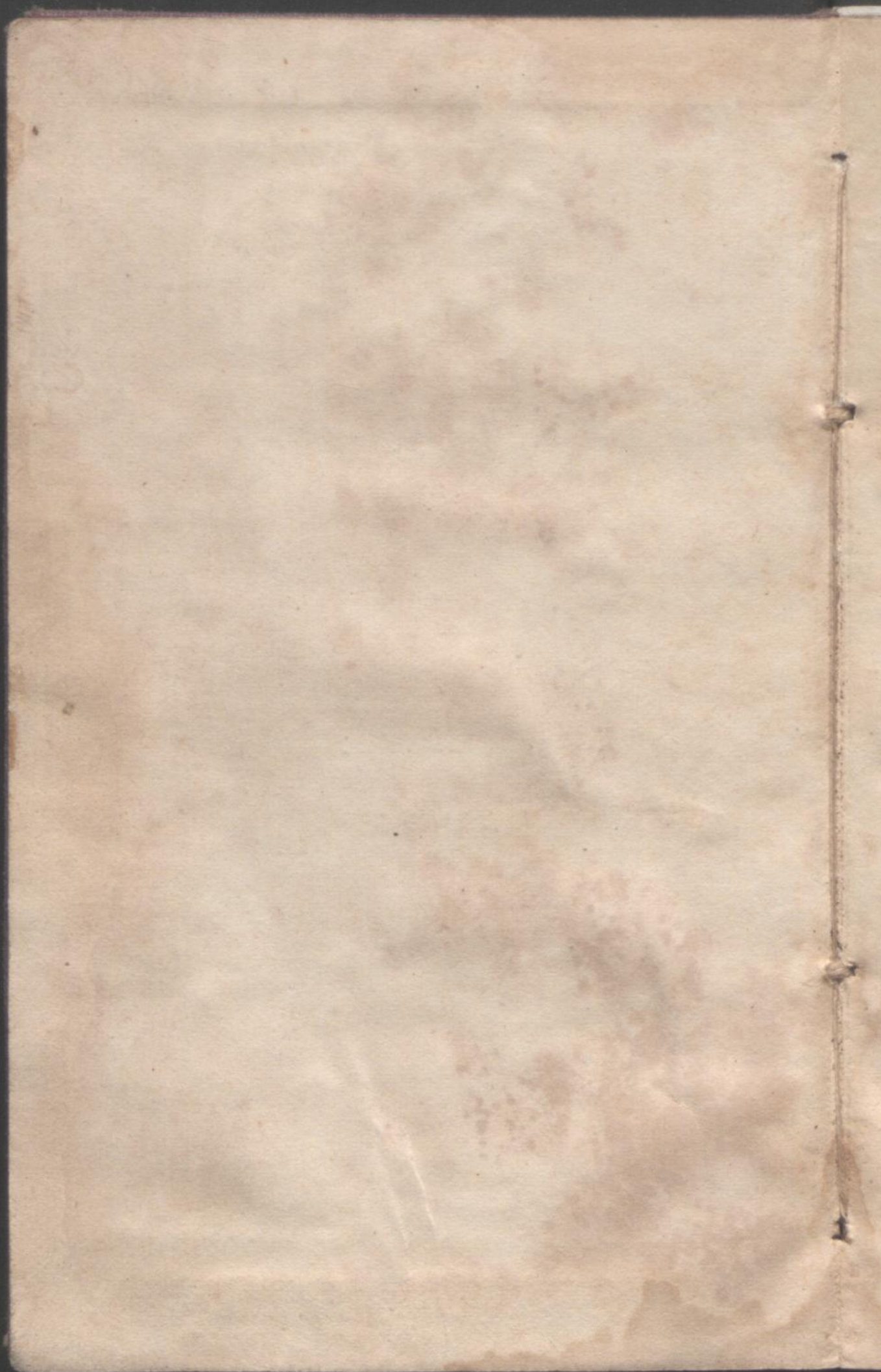
1.15

2.64

1.57

MARSH'S
POCKET DIARY

1853.



X

M. S. Holton

to Mr L. Buffels 0516
town 2135

1 Ball Lake 1/2" area
1 yd. square, fine
2 to. deep
9 New flannels
cotton deep
423
120

Robinson Henry Co. 30
Mason .. Washington

Robinson \$20
Locket & Locket \$75
Chambers 15

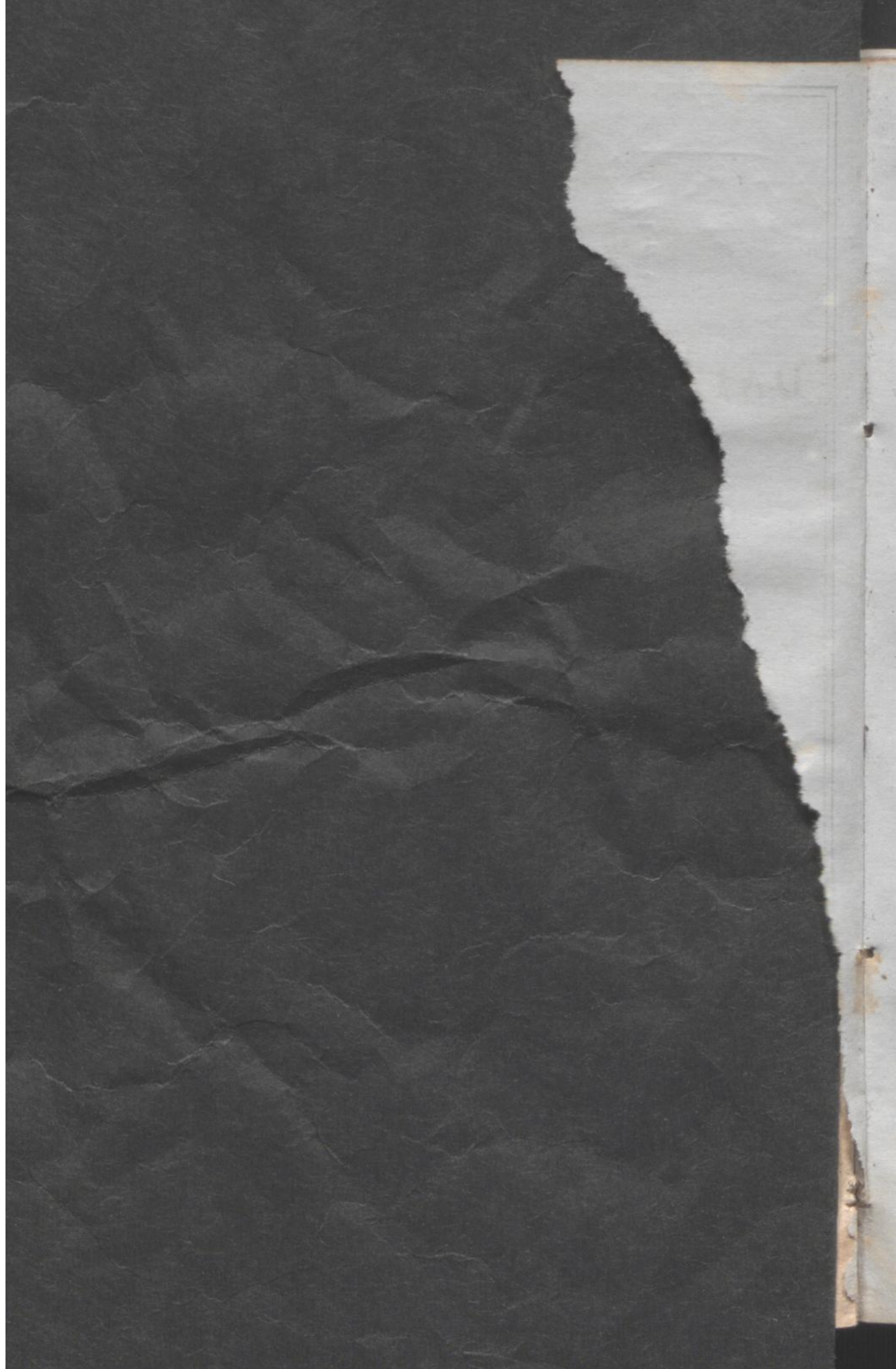
24

60

36 / 440 14

ed huyt

144



MARSH'S
POCKET DIARY
OR
DAILY REMEMBRANCER,
FOR
1853,

CONTAINING
A BLANK FOR EVERY DAY IN THE YEAR,
FOR THE RECORD OF
Interesting Events, Appointments, &c.

CALCULATIONS BY
BENJAMIN GREENLEAF, A. M.
AUTHOR OF THE NATIONAL ARITHMETIC.

BOSTON:
PUBLISHED BY JOHN MARSH,
No. 77 WASHINGTON STREET,
Joy's Building.

ECLIPSES IN 1853.

THERE will be three eclipses this year, two of the Sun, and one of the Moon.

I. An annular eclipse of the Sun, June 6, invisible in the Northern States, but may be seen in some of the Southern and Western States. It will be central in the South Pacific and South America. Beginning 6th day, 0 h. 23 m. A. and ending 6 h. 2 m. A.

II. A partial eclipse of the Moon, June 20th and 21st.

First contact with the Penumbra,	June 20th, 11 h. 8 m. A.	} Mean Time at Boston.
First contact with the Shadow,	June 21st, 0 h. 29 m. M.	
Middle of the Eclipse, "	1 h. 17 m. M.	
Last contact with the Shadow,	June 21st, 2 h. 5 m. M.	
Last contact with the Penumbra,	June 21st, 3 h. 26 m. M.	

III. A total eclipse of the Sun, Nov. 30, invisible in the United States, except in the southern part of California. This eclipse will be central in the North and South Pacific Oceans; also in the centre of South America.

Venus will be the Morning Star until May 16th; after which it will be the Evening Star until the close of the year.

Mars will be the Morning Star until February 13th; after which it will be the Evening Star until the end of the year.

JOHN MARSH,

No. 77 Washington St., Joy's Building, Boston,

IMPORTER, AND DEALER IN

Foreign and Domestic Stationery

OF EVERY DESCRIPTION,

Adapted to the Counting House and Office, and for Artists,
Teachers, Professional Gentlemen, Travellers, &c.

MANUFACTURER OF

Blank Account Books, Manifold Letter Writers, Metallic Books,
Writing and Dressing Cases, Pocket Books, &c., &c.

Publisher of The Family Expense Book, and Marsh's Blank
Diaries, of four different sizes.

P. S. Blank Books, for Banks, Railroad and Insurance Com-
panies, &c.; and Printing of Bill-heads, Circulars, and Cards,
executed to order, at short notice.

*At Wholesale and Retail—Prices as reasonable as any in the
United States.*

RATES OF POSTAGE.

DOMESTIC AND INLAND POSTAGE.

LETTERS not exceeding $\frac{1}{2}$ oz. within 3,000 miles, 3 cts., *pre-paid*, 5 cts., *postpaid*; for any greater distance, double these rates: but if conveyed wholly or partly by sea, *and* to and from a foreign country, 10 cts. within, and 20 cts. over 2,500 miles, unless otherwise fixed by treaty, &c. Every additional $\frac{1}{2}$ oz. or fraction carries an additional postage. Letters dropped for delivery at the same Post Office, 1 cent. Advertised letters, 1 cent and postage. Penny post delivery to or from Post Office, 1 or 2 cents.

NEWSPAPERS, &c. — 1st. *From Office of Publication to Subscribers.* — WEEKLY, within the county, FREE; out of the county, *per quarter*, not over 50 miles, 5 cents; between 50 and 300 miles, 10 cents; 300 to 1,000 miles, 15 cents; 1,000 to 2,000 miles, 20 cents; 2,000 to 4,000 miles, 25 cents; over 4,000 miles, 30 cents. Monthly, $\frac{1}{4}$ of these rates; $\frac{1}{2}$ monthly, $\frac{1}{2}$ do.; $\frac{1}{2}$ weekly, double; tri-weekly, treble; oftener than tri-weekly, five times these rates; but, if the newspaper does not contain over 300 square inches, the postage is $\frac{1}{4}$ of these rates. Subscribers to all periodicals pay in advance, by the quarter, and at $\frac{1}{2}$ these rates. Exchanges free. 2nd. *On all other Newspapers, unsealed circulars, hand-bills, engravings, pamphlets, periodicals, magazines, and books, bound or unbound, (not to exceed 32 oz.)* the postage must be prepaid, as follows: for the 1st oz. and each additional oz. or fraction, not over 500 miles, 1 cent; 500 to 1,500 miles, 2 cents; 1,500 to 2,500 miles, 3 cents; 2,500 to 3,500 miles, 4 cents; over 3,500 miles, 5 cents.

FOREIGN POSTAGE. (*By Treaty.*)

Letters from Oregon and California to Great Britain and Ireland, 59 cents; from any other part of the United States to Great Britain and Ireland, 24 cents, on letters not exceeding $\frac{1}{2}$ an oz.; double postage if more than $\frac{1}{2}$ oz., and two additional

RATES OF POSTAGE—CONTINUED.

postages for each additional oz. Letters ($\frac{1}{2}$ oz.) to Havana, 12 $\frac{1}{2}$ cents, *prepaid*; to Chagres, 20 cents; to Panama, 30 cents, *prepaid*. Letters to South America, the Pacific, and Sandwich Islands, must be *prepaid*, as above, to Panama. Letters to the German States, and countries east and south of them, (*via* Bremen) 24 cents, in addition to our inland postage, by the American steamers; to be *prepaid* on all letters addressed to Denmark, Norway, Sweden, Cronstadt, St. Petersburg, Switzer-
land, Austria, Baden, Bavaria, Constantinople, Greece, Alexandria, Cairo, and the eastern towns of Italy.

Newspapers to Great Britain, 4 cents, half of which is paid in each country; to Bremen, 3 cents, besides inland postage, *prepaid*; to Cuba, 4 $\frac{1}{2}$ cents, *prepaid*; to British Provinces, 1 $\frac{1}{2}$ cents, *prepaid*; to Chagres, Panama, and South American Ports on the Pacific, 4 $\frac{1}{2}$ cents, *prepaid*.

Periodicals and pamphlets to Great Britain, 2 cents in each country, if they do not exceed 2 oz.

UNITED STATES GOVERNMENT.

EXECUTIVE DEPARTMENT.

The 16th Presidential Term of four years, since the establishment of the Government of the United States under the Constitution, began on the 4th day of March, 1849, and will expire on the 4th day of March, 1853.

MILLARD FILLMORE, of New York, <i>President</i> ,	<i>Salary.</i> \$25,000
————— Vacancy, <i>Vice President</i> ,	5,000

CABINET.

DANIEL WEBSTER, of Mass., <i>Secretary of State</i> ,	6,000
THOMAS CORWIN, of Ohio, <i>Secretary of Treasury</i> ,	6,000
CHARLES M. CONRAD, of Louisiana, <i>Secretary of War</i> ,	6,000
WILLIAM A. GRAHAM, of N. Carolina, <i>Sec'y of Navy</i> ,	6,000
A. H. H. STEWART, of Penn., <i>Secretary of Interior</i> ,	6,000
NATHAN K. HALE, of New York, <i>Postmaster General</i> ,	6,000
J. J. CRITTENDEN, of Kentucky, <i>Attorney General</i> ,	4,000

May 1, 1851.

A TABLE,

Showing the number of days from any day in one month to the same day in another month.

VERY USEFUL IN BANKING BUSINESS.

From To	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Jan.	365	31	59	90	120	151	181	212	243	273	304	334
Feb.	334	365	28	59	89	120	150	181	212	242	273	303
Mar.	306	337	365	31	61	92	122	153	184	214	245	275
Apr.	275	306	334	365	30	61	91	122	153	183	214	244
May	245	276	304	335	365	31	61	92	123	153	184	214
June	214	245	273	304	334	365	30	61	92	122	153	183
July	184	215	243	274	304	335	365	31	62	92	123	153
Aug.	153	184	212	243	273	304	334	365	31	61	92	122
Sept.	122	153	181	212	242	273	303	334	365	30	61	91
Oct.	92	123	151	182	212	243	273	304	335	365	31	61
Nov.	61	92	120	151	181	212	242	273	304	334	365	30
Dec.	31	62	90	121	151	182	212	243	274	304	335	365

EXAMPLE.—How many days from the 2d of April to the 2d of Sept?
Look for April at the left hand, and Sept. at the top; in the angle is 153.

INTEREST TABLE,

Showing the Interest from 1 day to 2 years, on from \$5, to \$1,000, at 6 per cent.

Dolls.	DAYS.								MONTHS.							
	1	2	3	4	5	10	20	30	2	3	4	5	6	12	18	24
5	0	0	0	0	0	1	2	3	5	8	10	13	15	30	45	60
10	0	0	1	1	1	2	3	5	10	15	20	25	30	60	90	1.20
20	0	1	1	1	2	3	7	10	20	30	40	50	60	1.20	1.80	2.40
30	1	1	2	2	3	5	10	15	30	45	60	75	90	1.80	2.70	3.60
40	1	1	2	3	3	7	13	20	40	60	80	1.00	1.20	2.40	3.60	4.80
50	1	2	3	3	4	8	17	25	50	75	1.00	1.25	1.50	3.00	4.50	6.00
60	1	2	3	4	5	10	20	30	60	90	1.20	1.50	1.80	3.60	5.40	7.20
70	1	2	4	5	6	12	23	35	70	1.05	1.40	1.75	2.10	4.20	6.30	8.40
80	1	3	4	5	7	13	27	40	80	1.20	1.60	2.00	2.40	4.80	7.20	9.60
90	2	3	5	6	8	15	30	45	90	1.35	1.80	2.25	2.70	5.40	8.10	10.80
100	2	3	5	7	8	17	33	50	1.00	1.50	2.00	2.50	3.00	6.00	9.00	12.00
300	5	10	15	20	25	50	1.00	1.50	3.00	4.50	6.00	7.50	9.00	18.00	27.00	36.00
500	8	17	25	33	42	83	1.67	2.50	5.00	7.50	10.00	12.50	15.00	30.00	45.00	60.00
1,000	17	33	50	67	83	1.67	3.33	5.00	10.00	15.00	20.00	25.00	30.00	60.00	90.00	120.00

EXPLANATION.—To find the Interest, look for the sum in the left column under the head of Dollars, and the top of the column under the head of days or months, and the sum opposite will be the Interest required.

Thus \$10 for 30 days will be 5 cents; for 24 months, 120 cents, and so on.

JANUARY, 1853.

MOON'S PHASES.

Last Quarter, 1st d. 5h. 10m. A.
New Moon, 10th d. 4h. 28m. A.
First Quarter, 17th d. 0h. 45m. M.
Full Moon, 25th d. 0h. 59m. M.

D of M	Days of Week.	Sun r and s h.m.h.	Moon rises. h. m.	High Water. h. m.
1	Satur.	7 23 5	11 5	3 2
2	Sund.	7 23 5	morn.	4 6
3	Mon.	7 23 5	0 25	5 10
4	Tues.	7 22 5	1 21	6 25
5	Wed.	7 22 5	2 20	7 48
6	Thur.	7 21 5	3 19	9 0
7	Frid.	7 21 5	4 18	9 59
8	Satur.	7 20 5	5 17	10 49
9	Sund.	7 20 5	sets.	11 36
10	Mon.	7 19 5	5 47	morn.
11	Tues.	7 18 5	6 49	0 18
12	Wed.	7 18 5	7 50	0 58
13	Thur.	7 17 5	8 53	1 36
14	Frid.	7 16 5	9 56	2 14
15	Satur.	7 16 5	11 0	2 51
16	Sund.	7 15 5	morn.	3 31
17	Mon.	7 14 5	0 10	4 16
18	Tues.	7 13 5	1 7	5 12
19	Wed.	7 12 5	2 8	6 11
20	Thur.	7 12 5	3 13	7 26
21	Frid.	7 11 5	4 12	8 30
22	Satur.	7 10 5	5 10	9 27
23	Sund.	7 9 5	6 10	10 14
24	Mon.	7 8 5	7 4	10 58
25	Tues.	7 7 5	rises.	11 39
26	Wed.	7 6 5	7 16	A 16
27	Thur.	7 5 5	8 19	0 54
28	Frid.	7 4 5	9 21	1 41
29	Satur.	7 3 5	10 22	2 10
30	Sund.	7 2 5	11 25	2 51
31	Mon.	7 1 5	morn.	3 39

FEBRUARY, 1853.

MOON'S PHASES.

Last Quarter, 10th d. 2h. 20m. M.
New Moon, 8th d. 0h. 49m. M.
First Quarter, 15th d. 10h 27m. A.
Full Moon, 23d d. 2h. 40m. A.

D of M	Days of Week.	Sun r and s h.m.h.	Moon rises. h. m.	High Water. h. m.
1	Tues.	7 0 5	1 0	4 38
2	Wed.	6 59 6	2 2	5 55
3	Thur.	6 58 6	3 0	7 26
4	Frid.	6 57 6	3 58	8 46
5	Satur.	6 55 6	4 56	9 48
6	Sund.	6 54 6	5 56	10 46
7	Mon.	6 53 6	sets.	11 42
8	Tues.	6 52 6	6 29	morn.
9	Wed.	6 51 6	7 28	0 2
10	Thur.	6 50 6	8 27	0 36
11	Frid.	6 48 6	9 26	1 9
12	Satur.	6 47 6	10 26	1 42
13	Sund.	6 46 6	11 31	2 15
14	Mon.	6 45 6	morn.	2 50
15	Tues.	6 44 6	0 25	3 29
16	Wed.	6 43 6	1 17	4 16
17	Thur.	6 41 6	2 9	5 15
18	Frid.	6 40 6	3 1	6 33
19	Satur.	6 39 6	3 53	7 59
20	Sund.	6 37 6	4 45	8 59
21	Mon.	6 36 6	5 37	9 53
22	Tues.	6 35 6	rises.	10 39
23	Wed.	6 34 6	6 58	11 20
24	Thur.	6 32 6	7 37	11 58
25	Frid.	6 31 6	8 10	A 36
26	Satur.	6 30 6	8 59	1 12
27	Sund.	6 28 6	10 20	1 50
28	Mon.	6 27 6	11 50	2 30

Mercury freezes at thirty-eight degrees below 0, Fahrenheit, and becomes a solid mass, malleable under the hammer.

Study to make every leisure hour useful.

Remember that the beginning of sublime sciences is often so simple as to seem worthless.

MARCH, 1853.

MOON'S PHASES.

Last Quarter, 2d d. 8h. 55m. M.
New Moon, 9th d. 3h. 34m. A.
First Quarter, 17th d. 6h. 50m. A.
Full Moon, 25th d. 1h. 36m. M.
Last Quarter, 31st d. 4h. 58m. A.

D of M	Days of Week.	Sun r and s h.m.h.	Moon rises. h. m.	High Water. h. m.
1	Tues.	6 26 6	0 25	3 20
2	Wed.	6 24 6	1 16	4 18
3	Thur.	6 23 6	2 12	5 33
4	Frid.	6 22 6	3 8	7 11
5	Satur.	6 21 6	4 4	8 33
6	Sund.	6 19 6	5 0	9 36
7	Mon.	6 18 6	5 56	10 21
8	Tues.	6 17 6	6 53	11 3
9	Wed.	6 15 6	sets.	11 39
10	Thur.	6 14 6	6 56	morn.
11	Frid.	6 13 6	7 55	0 11
12	Satur.	6 11 6	8 55	0 50
13	Sund.	6 10 6	9 54	1 10
14	Mon.	6 9 6	10 54	1 42
15	Tues.	6 7 6	11 54	2 16
16	Wed.	6 6 6	morn.	2 53
17	Thur.	6 5 6	0 58	3 37
18	Frid.	6 4 6	1 34	4 32
19	Satur.	6 3 6	2 9	5 47
20	Sund.	6 2 6	2 44	7 8
21	Mon.	6 1 6	3 29	8 27
22	Tues.	5 59 7	4 4	9 27
23	Wed.	5 58 7	4 30	10 16
24	Thur.	5 57 7	5 2	10 58
25	Frid.	5 55 7	rises.	11 37
26	Satur.	5 54 7	8 18	A 14
27	Sund.	5 53 7	9 14	0 51
28	Mon.	5 51 7	10 11	1 30
29	Tues.	5 50 7	11 7	2 15
30	Wed.	5 49 7	morn.	3 5
31	Thur.	5 48 7	1 2	4 8

APRIL, 1853.

MOON'S PHASES.

New Moon, 8th d. 7h. 13m. M.
First Quarter, 16th d. 0h. 1m. A.
Full Moon, 23d d. 10h. 27m. M.
Last Quarter, 30th d. 2h. 6m. M.

D of M	Days of Week.	Sun r and s h.m.h.	Moon rises. h. m.	High Water. h. m.
1	Frid.	5 45 7	2 18	5 27
2	Satur.	5 44 7	3 2	6 53
3	Sund.	5 42 7	3 46	8 14
4	Mon.	5 41 7	4 30	9 16
5	Tues.	5 40 7	5 14	10 0
6	Wed.	5 39 7	5 58	10 39
7	Thur.	5 37 7	sets.	11 12
8	Frid.	5 36 7	6 36	11 42
9	Satur.	5 35 7	7 37	morn.
10	Sund.	5 33 7	8 40	0 12
11	Mon.	5 32 7	9 43	0 42
12	Tues.	5 31 7	10 46	1 15
13	Wed.	5 30 7	11 49	1 48
14	Thur.	5 28 7	morn.	2 25
15	Frid.	5 27 7	0 40	3 9
16	Satur.	5 26 7	1 30	4 3
17	Sund.	5 25 7	2 20	5 11
18	Mon.	5 23 7	3 10	6 39
19	Tues.	5 22 7	3 39	7 49
20	Wed.	5 21 7	4 8	8 57
21	Thur.	5 20 7	4 37	9 49
22	Frid.	5 18 7	5 6	10 33
23	Satur.	5 17 7	rises.	11 14
24	Sund.	5 16 7	8 37	11 53
25	Mon.	5 15 7	9 39	A 34
26	Tues.	5 14 7	10 44	1 17
27	Wed.	5 13 7	11 57	2 5
28	Thur.	5 11 7	morn.	2 57
29	Frid.	5 10 7	1 28	3 56
30	Satur.	5 9 7	2 13	4 59

He becometh poor that dwelleth with a slack hand.

Set a value on the smallest morsels of knowledge. These fragments are the dust of diamonds.

Never condemn a friend unheard, or without letting him know his accuser and the charge preferred against him.

MAY, 1853.

MOON'S PHASES.

New Moon, 7th d. 11h. 22m. A.
First Quarter, 16th d. 1h. 12m. M.
Full Moon, 22d d. 6h. 8m. A.
Last Quarter, 29th d. 0h. 54m. A.

D of M	Days of Week.	Sun r and s h.m.h.	Moon rises. h. m.	High Water. h. m.
1	Sund.	5 8 7	2 58	6 25
2	Mon.	5 7 7	3 21	7 43
3	Tues.	5 6 7	3 48	8 44
4	Wed.	5 5 7	4 10	9 30
5	Thur.	5 4 7	4 30	10 7
6	Frid.	5 3 7	4 52	10 42
7	Satur.	5 2 7	sets.	11 15
8	Sund.	5 0 7	7 45	11 46
9	Mon.	4 59 8	8 37	morn.
10	Tues.	4 58 8	9 30	0 18
11	Wed.	4 57 8	10 22	0 52
12	Thur.	4 56 8	11 15	1 25
13	Frid.	4 55 8	11 50	2 6
14	Satur.	4 55 8	morn.	2 48
15	Sund.	4 54 8	0 59	3 38
16	Mon.	4 53 8	1 27	4 37
17	Tues.	4 52 8	1 55	5 47
18	Wed.	4 51 8	2 23	7 5
19	Thur.	4 50 8	2 51	8 16
20	Frid.	4 49 8	3 19	9 16
21	Satur.	4 48 8	3 49	10 6
22	Sund.	4 48 8	rises.	10 51
23	Mon.	4 47 8	8 56	11 36
24	Tues.	4 46 8	10 03	A 21
25	Wed.	4 45 8	11 06	1 7
26	Thur.	4 45 8	morn.	1 54
27	Frid.	4 44 8	0 19	2 44
28	Satur.	4 43 8	0 58	3 36
29	Sund.	4 43 8	1 38	4 35
30	Mon.	4 42 8	1 57	5 41
31	Tues.	4 41 8	2 16	6 46

JUNE, 1853.

MOON'S PHASES.

New Moon, 6th d. 3h. 18m. A.
First Quarter, 14th d. 10h. 42m. M.
Full Moon, 21st d. 1h. 26m. M.
Last Quarter, 28th d. 1h. 52m. M.

D of M	Days of Week.	Sun r and s h.m.h.	Moon rises. h. m.	High Water. h. m.
1	Wed.	4 41 8	1 38	7 54
2	Thur.	4 40 8	2 10	8 51
3	Frid.	4 40 8	2 42	9 33
4	Satur.	4 39 8	3 14	10 12
5	Sund.	4 39 8	3 46	10 47
6	Mon.	4 39 8	sets.	11 12
7	Tues.	4 38 8	8 29	11 57
8	Wed.	4 37 8	9 13	morn.
9	Thur.	4 37 8	9 57	0 35
10	Frid.	4 37 8	10 41	1 11
11	Satur.	4 36 8	11 25	1 58
12	Sund.	4 36 8	morn.	2 29
13	Mon.	4 36 8	0 8	3 14
14	Tues.	4 36 8	0 34	4 5
15	Wed.	4 35 8	1 1	5 7
16	Thur.	4 35 8	1 27	6 36
17	Frid.	4 35 8	1 53	7 37
18	Satur.	4 35 8	2 20	8 47
19	Sund.	4 35 8	2 46	9 45
20	Mon.	4 35 8	3 12	10 37
21	Tues.	4 35 8	rises.	11 25
22	Wed.	4 35 8	10 0	A 6
23	Thur.	4 35 8	10 35	0 57
24	Frid.	4 35 8	11 10	1 41
25	Satur.	4 35 8	11 45	2 24
26	Sund.	4 35 8	morn.	3 10
27	Mon.	4 35 8	0 21	3 55
28	Tues.	4 35 8	0 41	4 50
29	Wed.	4 36 8	1 1	5 50
30	Thur.	4 36 8	1 22	6 52

Praise is so pleasing to the mind of man, that it is the original motive of almost all our actions.

Knowledge is its own exceeding great reward.

Electricity moves with a greater velocity than light, which traverses 200,000 miles of space in a moment of time.

JULY, 1853.

MOON'S PHASES.

New Moon, 6th d. 6h. 9m. M.
First Quarter, 13th d. 5h. 31m. A.
Full Moon, 20th d. 9h. 10m. M.
Last Quarter, 27th d. 5h. 16m. A.

D of M	Days of Week.	Sun r and s h.m.h.	Moon rises. h. m.	High Water. h. m.
1	Frid.	4 36 8	1 30	7 58
2	Satur.	4 36 8	2 2	8 45
3	Sund.	4 37 8	2 31	9 42
4	Mon.	4 37 8	3 4	10 23
5	Tues.	4 37 8	sets.	11 1
6	Wed.	4 38 8	7 47	11 41
7	Thur.	4 38 8	8 23	morn.
8	Frid.	4 39 8	8 59	0 18
9	Satur.	4 40 8	9 35	0 55
10	Sund.	4 40 8	10 11	1 31
11	Mon.	4 40 8	10 47	2 11
12	Tues.	4 41 8	11 23	2 50
13	Wed.	4 41 8	11 59	3 33
14	Thur.	4 42 8	morn.	4 26
15	Frid.	4 43 8	0 9	5 40
16	Satur.	4 43 8	0 34	6 58
17	Sund.	4 44 8	1 14	8 19
18	Mon.	4 45 8	1 57	9 29
19	Tues.	4 45 8	2 46	10 26
20	Wed.	4 46 8	rises.	11 21
21	Thur.	4 47 8	9 14	A 1
22	Frid.	4 48 8	9 40	0 49
23	Satur.	4 48 8	10 6	1 22
24	Sund.	4 49 8	10 42	1 58
25	Mon.	4 50 8	11 0	2 34
26	Tues.	4 51 8	11 20	3 13
27	Wed.	4 52 8	11 41	3 58
28	Thur.	4 53 8	11 59	4 49
29	Frid.	4 54 8	morn.	5 53
30	Satur.	4 55 8	0 21	7 4
31	Sund.	4 56 8	1 0	8 12

AUGUST, 1853.

MOON'S PHASES.

New Moon, 4th d. 7h. 21m. A.
First Quarter, 11th d. 10h. 55m. A.
Full Moon, 18th d. 6h. 11m. A.
Last Quarter, 26th d. 10 h. 5m. M.

D of M	Days of Week.	Sun r and s h.m.h.	Moon rises. h. m.	High Water. h. m.
1	Mon.	4 57 8	1 32	9 12
2	Tues.	4 59 8	2 24	10 2
3	Wed.	4 59 8	3 16	10 46
4	Thur.	5 0 7	sets.	11 26
5	Frid.	5 1 7	7 55	morn.
6	Satur.	5 2 7	8 17	0 3
7	Sund.	5 3 7	8 39	0 38
8	Mon.	5 4 7	9 1	1 13
9	Tues.	5 5 7	9 23	1 48
10	Wed.	5 6 7	9 45	2 25
11	Thur.	5 7 7	10 38	3 7
12	Frid.	5 8 7	11 28	4 0
13	Satur.	5 9 7	morn.	5 9
14	Sund.	5 10 7	0 40	6 39
15	Mon.	5 11 7	1 1	8 6
16	Tues.	5 12 7	1 40	9 20
17	Wed.	5 14 7	2 50	10 17
18	Thur.	5 15 7	rises.	11 5
19	Frid.	5 16 7	8 20	11 45
20	Sund.	5 17 7	8 40	A 22
21	Satur.	5 18 7	9 0	0 55
22	Mon.	5 20 7	9 20	1 28
23	Tues.	5 21 7	9 40	2 1
24	Wed.	5 22 7	10 0	2 36
25	Thur.	5 23 7	10 30	3 13
26	Frid.	5 24 7	11 3	4 1
27	Satur.	5 26 7	11 39	5 0
28	Sund.	5 27 7	morn.	6 12
29	Mon.	5 28 7	0 30	7 33
30	Tues.	5 29 7	1 11	8 45
31	Wed.	5 30 7	1 48	9 41

Get wisdom, get understanding, forget it not.

Knowledge is not to be gained by wishing, nor acquired by dignity and wealth. The student, whether rich or poor, must read, think, remember, compare, consult and digest, in order to be wise and useful.

SEPTEMBER, 1853.

MOON'S PHASES.

New Moon, 3d d. 6h. 57m. M.
First Quarter, 10th d. 4h. 13m. M.
Full Moon, 17th d. 5h. 27m. M.
Last Quarter, 25th d. 5h. 48m. M.

D of M	Days of Week.	Sun r and s h.m.h.	Moon rises. h. m.	High Water. h. m.
1	Thur.	5 32 7	2 18	10 24
2	Frid.	5 33 7	3 25	11 5
3	Satur.	5 34 7	sets.	11 42
4	Sund.	5 36 7	7 17	morn.
5	Mon.	5 37 7	7 40	0 17
6	Tues.	5 38 7	8 10	0 51
7	Wed.	5 39 7	8 43	1 26
8	Thur.	5 41 7	9 14	2 6
9	Frid.	5 42 7	9 48	2 50
10	Satur.	5 43 7	10 38	3 53
11	Sund.	5 44 7	11 27	4 55
12	Mon.	5 46 7	morn.	6 25
13	Tues.	5 47 7	0 35	7 54
14	Wed.	5 48 7	1 30	9 11
15	Thur.	5 50 7	2 44	10 4
16	Frid.	5 51 7	4 20	10 47
17	Satur.	5 52 7	rises.	11 22
18	Sund.	5 54 7	7 31	11 58
19	Mon.	5 55 7	7 55	A 28
20	Tues.	5 56 7	8 19	0 42
21	Wed.	5 57 7	8 43	1 30
22	Thur.	5 59 7	9 7	2 4
23	Frid.	6 0 6	9 33	2 42
24	Satur.	6 1 6	10 23	3 24
25	Sund.	6 3 6	11 13	4 18
26	Mon.	6 4 6	11 49	5 31
27	Tues.	6 5 6	morn.	6 45
28	Wed.	6 7 6	1 2	8 6
29	Thur.	6 8 6	1 38	9 9
30	Frid.	6 9 6	2 14	9 59

OCTOBER, 1853.

MOON'S PHASES.

New Moon, 2d. d. 5h. 33m. A.
First Quarter, 9th d. 10h. 41m. M.
Full Moon, 16th d. 7h 47m. A.
Last Quarter, 25th d. 0h. 35m. M.

D of M	Days of Week.	Sun r and s h.m.h.	Moon rises. h. m.	High Water. h. m.
1	Satur.	6 11 6	4 0	10 42
2	Sund.	6 12 6	sets.	11 24
3	Mon.	6 13 6	6 9	11 54
4	Tues.	6 14 6	6 44	morn.
5	Wed.	6 15 6	7 19	0 30
6	Thur.	6 17 6	7 54	1 8
7	Frid.	6 18 6	8 29	1 51
8	Satur.	6 20 6	9 24	2 37
9	Sund.	6 21 6	10 14	3 36
10	Mon.	6 22 6	11 15	4 48
11	Tues.	6 23 6	morn.	6 13
12	Wed.	6 25 6	0 30	7 43
13	Thur.	6 26 6	1 40	8 53
14	Frid.	6 27 6	2 55	9 41
15	Satur.	6 29 6	4 10	10 21
16	Sund.	6 30 6	rises.	10 55
17	Mon.	6 31 6	6 9	11 29
18	Tues.	6 32 6	6 42	11 58
19	Wed.	6 34 6	7 15	A 31
20	Thur.	6 35 6	7 48	1 3
21	Frid.	6 36 6	8 21	1 38
22	Satur.	6 38 6	8 55	2 16
23	Sund.	6 39 6	9 46	2 59
24	Mon.	6 40 6	10 37	3 49
25	Tues.	6 41 6	11 28	4 50
26	Wed.	6 42 6	morn.	6 5
27	Thur.	6 44 6	0 42	7 24
28	Frid.	6 45 6	1 48	8 30
29	Satur.	6 46 6	2 54	9 25
30	Sund.	6 47 6	4 0	10 11
31	Mon.	6 49 6	5 8	11 2

A man may learn that in a few moments which will be of great value to him during the rest of his life.

Hear instruction, and be wise, and forget it not.

Never let slip an opportunity of gaining a new idea.

One grain of musk will scent a room for twenty years.

NOVEMBER, 1853.

MOON'S PHASES.

New Moon, 1st d. 3h. 54m. M.
First Quarter, 7th d. 7h. 27m. M.
Full Moon, 15th d. 1h. 16m. A.
Last Quarter, 23d d. 5h. 51m. A.
New Moon, 30th d. 2h. 29m. A.

D of M	Days of Week.	Sun r and s h. m. h.	Moon sets. h. m.	High Water. h. m.
1	Tues.	6 50 6	sets.	11 33
2	Wed.	6 51 6	5 44	morn.
3	Thur.	6 52 6	6 43	0 13
4	Frid.	6 53 6	7 42	0 56
5	Satur.	6 54 6	8 42	1 42
6	Sund.	6 55 6	9 41	2 32
7	Mon.	6 57 6	10 41	3 28
8	Tues.	6 58 6	11 41	4 33
9	Wed.	6 59 6	morn.	5 51
10	Thur.	7 0 5	0 46	7 7
11	Frid.	7 1 5	1 51	8 13
12	Satur.	7 2 5	2 56	9 8
13	Sund.	7 3 5	4 1	9 51
14	Mon.	7 4 5	5 6	10 26
15	Tues.	7 5 5	rises.	11 1
16	Wed.	7 6 5	5 27	11 36
17	Thur.	7 7 5	6 17	A 7
18	Frid.	7 8 5	7 7	0 41
19	Satur.	7 9 5	7 57	1 17
20	Sund.	7 10 5	8 47	1 56
21	Mon.	7 11 5	9 37	2 36
22	Tues.	7 11 5	10 25	3 20
23	Wed.	7 12 5	11 15	4 13
24	Thur.	7 13 5	morn.	5 16
25	Frid.	7 14 5	0 20	6 27
26	Satur.	7 15 5	1 35	7 40
27	Sund.	7 15 5	2 50	8 47
28	Mon.	7 16 5	4 5	9 40
29	Tues.	7 17 5	5 22	10 26
30	Wed.	7 18 5	sets.	11 14

DECEMBER, 1853.

MOON'S PHASES.

First Quarter, 7th d. 7h. 26m. M.
Full Moon, 15th d. 8h. 49m. M.
Last Quarter, 23d d. 8h. 38m. M.
New Moon, 30th d. 1h. 21m. M.

D of M	Days of Week.	Sun r and s h. m. h.	Moon sets. h. m.	High Water. h. m.
1	Thur.	7 18 5	4 56	morn.
2	Frid.	7 19 5	6 4	0 1
3	Satur.	7 20 5	7 13	0 47
4	Sund.	7 20 5	8 23	1 35
5	Mon.	7 21 5	9 30	2 23
6	Tues.	7 21 5	10 40	3 13
7	Wed.	7 22 5	11 50	4 8
8	Thur.	7 22 5	morn.	5 11
9	Frid.	7 23 5	0 58	6 18
10	Satur.	7 23 5	1 56	7 24
11	Sund.	7 23 5	2 36	8 25
12	Mon.	7 24 5	3 16	9 13
13	Tues.	7 24 5	4 0	9 58
14	Wed.	7 24 5	4 40	10 34
15	Thur.	7 25 5	rises.	11 12
16	Frid.	7 25 5	5 27	11 38
17	Satur.	7 25 5	6 25	A 24
18	Sund.	7 25 5	7 23	1 1
19	Mon.	7 25 5	8 21	1 37
20	Tues.	7 25 5	9 19	2 15
21	Wed.	7 25 5	10 18	2 55
22	Thur.	7 25 5	11 16	3 38
23	Frid.	7 25 5	morn.	4 28
24	Satur.	7 25 5	0 15	5 34
25	Sund.	7 25 5	1 44	6 49
26	Mon.	7 25 5	3 3	8 7
27	Tues.	7 25 5	4 22	9 11
28	Wed.	7 24 5	5 41	10 9
29	Thur.	7 24 5	7 2	11 2
30	Frid.	7 24 5	sets.	11 51
31	Satur.	7 24 5	4 57	morn.

The aim of education should be to teach us rather how to think ; rather to improve our minds, so as to enable us to think for ourselves, than to load the memory with the thoughts of other men.

A good name is rather to be chosen than great riches.

SATURDAY, JANUARY 1, 1853.

Left the Sagadahoc in stage this
morning for N, at home at noon
found the family well

SUNDAY, JAN. 2.

MONDAY, JAN. 3.

TUESDAY, JANUARY 4, 1853.

This morning left N. in stage
arrived in Bath at 11 o'clock. Left in
noon train for P. arrived without
accident and put up at U.S. Hotel

WEDNESDAY, JAN. 5.

In 1 1/2 o'clock train left for S -
met on the cars Miss G. informed
me that Chamberlain had been
on from Ohio and returned the day
before - Arrived at Northumberland
in the Evening

THURSDAY, JAN. 6.

This morning left N. for S. - when
we arrived about 8 1/2 - in the
afternoon went up to Island Park
with Edward. I went ahead
took Wolfbrook's team tracks the
at 6 PM completely chilled

FRIDAY, JANUARY 7, 1853.

Having finished our business
left this morning for home. dined
at the Morgan house. In the
afternoon up on the Mt. Etch
Mountain bear hunting, at
before tea

SATURDAY, JAN. 8.

E remains here until to-
morrow. Brackett came up
and remained with us until
Evening

SUNDAY, JAN. 9.

In company with E went
down to Frenchs. E, left for
N. about noon - remained
with the Dr until evening

MONDAY, JANUARY 10, 1853.

Hilton	{ Claude }	Mitchell	
A. Burlak		F. M. Burlak	Butter
Shannon		Paine	

J. Burlak
S. Burlak
Butter

TUESDAY, JAN. 11.

John W. Richmond
No 8 Court
Drops at
depot Alameda

WEDNESDAY, JAN. 12.

THURSDAY, JANUARY 13, 1853.

FRIDAY, JAN. 14.

SATURDAY, JAN. 15.

SUNDAY, JANUARY 16, 1853.

MONDAY, JAN. 17.

TUESDAY, JAN. 18.

WEDNESDAY, JANUARY 19, 1853.

THURSDAY, JAN. 20.

FRIDAY, JAN. 21.

SATURDAY, JANUARY 22, 1853.

SUNDAY, JAN. 23.

MONDAY, JAN. 24.

TUESDAY, JANUARY 25, 1853.

WEDNESDAY, JAN. 26.

THURSDAY, JAN. 27.

FRIDAY, JANUARY 28, 1853.

SATURDAY, JAN. 29.

SUNDAY, JAN. 30.

MONDAY, JANUARY 31, 1853

TUESDAY, FEB. 1.

WEDNESDAY, FEB. 2.

THURSDAY, FEBRUARY 3, 1853.

Brimley FRIDAY, FEB. 4.

To day passenger train
ran through to Island Pond
Left the Pond 2.43 in P.M.
9.08 and 44' delay on the road
on 5 hrs 41 min arriving 149
miles with a portion of the road
very rough

SATURDAY, FEB. 5.

Left French's in company with the
Dr. for Northumberland - Took care
for P. when we arrived without delay.
Saw W. advised me to return to
Brimley and remain until he re-
turns from N.Y. - Raining all day

Bath

SUNDAY, FEBRUARY 6, 1853.

Arrived here last eve, no stage
for East, took a single team and left
for Ironton: found the travelling very bad
just coming out, leaving bad holes
in the road - Found all well at
Ironton - Dizzly all day

New Castle MONDAY, FEB. 7.

Thaw still continues -
Spent the day visiting my friends
and loafing about the streets

New Castle TUESDAY, FEB. 8

Not fair yet

Portland WEDNESDAY, FEBRUARY 9, 1853.

This morning left home. The travelling much better the ground having frozen ^{down} during the night -

Brunswick THURSDAY, FEB. 10.

Called on Edward this morning. We took a walk about the City - informed me of the picture mill of his former Lady-love - Afternoon at 1 1/2 took car and reached New in the evening - Found Eddy very sick. (Cold).

Brunswick FRIDAY, FEB. 11.

Eddy not any better, will hastily service this attack - up looking over 125 in the forenoon afternoon at home.

SATURDAY, FEBRUARY 12, 1853.

SUNDAY, FEB 13

MONDAY, FEB 14

Completed my estimate on the
Dio. and made preparations to
move homeward.

W. came up in the evening train and
informed me they wished me to
remain on the road

TUESDAY, FEBRUARY 15, 1853.

This morning went up to the Pond with W., put in stakes for the Station - dined at Woods tea at Hoyt's where we remained all night - Bilo 62 1/2

WEDNESDAY, FEB. 16.

This morning took the train for B., Eddy not any better Dr Brooks, found the Pond new with Brackles all night.

THURSDAY, FEB. 17.

Eddie died this morning about 7 o'clock
I went at dinner

FRIDAY, FEBRUARY 18, 1853.

SATURDAY FEB. 19.

SUNDAY, FEB. 20.

Attended Eddie's funeral this morning in company with French family. Many present. Afternoon went down to Lancaster with Dr. MacMillan, put up at Abbott the Dr going home.

MONDAY, FEBRUARY 21, 1853.

Started in stage at 3 1/2 A.M. the only passenger to Littleton when breakfasted. Arrived at Mr Goodall's about 8 A.M. Introduced myself to Mr. G. - was politely received by the family. Afternoon in company with Mr and Mrs. G. drove at Dr. French's at Bath.

TUESDAY, FEB. 22.

Went with Mr. G. over into San Jacinto. Had a fine view of the surrounding country. The morning we visited the shoe factory and Engineer's office. Introduced to the Engineer of the White Mountain Road.

Into a starch factory.

WEDNESDAY, FEB. 23.

Commenced raining last night and continued through the day. In the house playing Backgammon and studying Surveying with Mr. G. Left at 8 P.M. by stage for Lancaster.

THURSDAY, FEBRUARY 24, 1853.

Unpleasant and cold last night, having
to ride from Littleton in an open
sleep - pain changed to damp snow
arrived here about 1 P.M.

This morning up to Northam but
but could not reach the Kegan the
morning not coming -

FRIDAY, FEB. 25.

The morning train reached here
about 11 P.M. Last evening made
an attempt to run the up to the pond
the rail icy, and came back.

This morning train ran up without
any difficulty, reached home in the
forenoon Mr & Mrs. C. visiting.

SATURDAY, FEB. 26.

SUNDAY, FEBRUARY 27, 1853.

MONDAY, FEB. 28.

TUESDAY, MARCH 1.

Settled to this date
with Mr Cook

WEDNESDAY, MARCH 2, 1853.

THURSDAY, MARCH 3.

FRIDAY, MARCH 4.

SATURDAY, MARCH 5, 1853.

Left Brunswick this morning
for home; found it snow-
ing down in N.H. in the
snow had fallen some 8"

Left P. Evening train arrived
in Bath

SUNDAY, MARCH 6.

There being no mail brought
from Boston yesterday the
stage ran through the snow
Arrived home at noon
found family well

MONDAY, MARCH 7.

Over at Father's this morning
found Mother much worse

TUESDAY, MARCH 8, 1853.

Mr. G. L. making coffin
for Mrs. Bartow - at work
with him

WEDNESDAY, MARCH 9.

at work with Mr. G. L.

THURSDAY, MARCH 10.

Mrs. Bartow buried to
day - aged 98

FRIDAY, MARCH 11, 1853.

SATURDAY, MARCH 12.

SUNDAY, MARCH 13.

MONDAY, MARCH 14, 1853.

TUESDAY, MARCH 15.

Mother died this morning
at 10 A.M.

WEDNESDAY, MARCH 16.

THURSDAY, MARCH 17, 1853.

FRIDAY, MARCH 18.

Rainy afternoon - Mother's
funeral at 2 P.M. Prayers
by Mr. Kingsbury

SATURDAY, MARCH 19.

SUNDAY, MARCH 20, 1853.

MONDAY, MARCH 21.

Blank Page(s)

TUESDAY, MARCH 22.

WEDNESDAY, MARCH 23, 1853.

THURSDAY, MARCH 24.

FRIDAY, MARCH 25.

SATURDAY, MARCH 26, 1853.

SUNDAY, MARCH 27.

MONDAY, MARCH 28.

TUESDAY, MARCH 29, 1853.

WEDNESDAY, MARCH 30.

THURSDAY, MARCH 31.

Left at noon in the Deer
for Portland. Arrived at 5
P.M. had a fine time. Called
at Mr. W's informed by his
wife he was up the line not to
be at home until to-morrow

FRIDAY, APRIL 1, 1853.

Sat & Son attended a lecture on
the application of Electricity &
Magnetism as a Sanative agent

Met Mr. at the Dep. & at Mr.
Consented to go to Kentucky
we are to leave in a week or
ten days

SATURDAY, APRIL 2.

Returned to N this morning
by the ferry

SUNDAY, APRIL 3.

MONDAY, APRIL 4, 1853.

TUESDAY, APRIL 5.

Blank Page(s)

WEDNESDAY, APRIL 6.

THURSDAY, APRIL 7, 1853.

FRIDAY, APRIL 8.

SATURDAY, APRIL 9.

SUNDAY, APRIL 10, 1853.

MONDAY, APRIL 11.

TUESDAY, APRIL 12.

WEDNESDAY, APRIL 13, 1853.

THURSDAY, APRIL 14.

FRIDAY, APRIL 15.

SATURDAY, APRIL 16, 1853.

Left home this morning. Did
back Punter 6 PM the down
train being off the track this
side Brunswick

SUNDAY, APRIL 17.

MONDAY, APRIL 18.

TUESDAY, APRIL 19, 1853.

Sept

WEDNESDAY, APRIL 20.

At N.S.

THURSDAY, APRIL 21.

Sp. N.S.

FRIDAY, APRIL 22, 1853.

Reached bin. 9 o'clock

SATURDAY, APRIL 23.

Reached Mayville at
7 o'clock Evening

SUNDAY, APRIL 24.

MONDAY, APRIL 25, 1853.

Missy Stetson

TUESDAY, APRIL 26.

WEDNESDAY, APRIL 27.

THURSDAY, APRIL 28, 1853.

FRIDAY, APRIL 29.

SATURDAY, APRIL 30.

SUNDAY, MAY 1, 1853.

MONDAY, MAY 2.

Today Cyrus and Maryam
at-Mr Sterling, did not go
out-on the line as we pro-
posed

TUESDAY, MAY 3.

This morning took the
line: Met-Mr Blondman at
his house rode over a portion
of the time with him all hand
except- Comins and
Arman came in this eve

WEDNESDAY, MAY 4, 1853.

Today busy arranging our
cans found our things badly
broken up. Afternoon rainy

THURSDAY, MAY 5.

This morning commenced
mining down north branch
of Slipstone

FRIDAY, MAY 6.

In the field all day

SATURDAY, MAY 7, 1853.

Today Snowing - Did not
go out until 10 o'clock

SUNDAY, MAY 8.

Today took a ride with
Judge Glover down State.
dined with him

MONDAY, MAY 9.

TUESDAY, MAY 10, 1853.

This morning struck out tents, and
arrived at to move to Staly point -
Left work at 4 p.m. but did not find our
tents at the spot - boys at town - went off
to Mr and spent the night

WEDNESDAY, MAY 11.

Up in town learned that our tent
came there last evening - did not reach
the point - pitched tent in middle of fore-
noon - Pitched there took one dinner
and went out on the line

THURSDAY, MAY 12.

Completed the survey of the Salt
well Route this eve. Reached home at
sun set - fatigued and I am
A note from Mr well this eve

FRIDAY, MAY 13, 1853.

Is day about camp analyzing notes
8-6

SATURDAY, MAY 14.

This morning out with Mr
Rand examining the Tom-
ahawk Creek: back at noon
unmarried of the day in camp

SUNDAY, MAY 15.

MONDAY, MAY 16, 1853.

TUESDAY, MAY 17.

WEDNESDAY, MAY 18.

THURSDAY, MAY 19, 1853.

Completed our preliminary
line this evening -

A tremendous thunderstorm -
flooded our tents many were
broken and blown down
during the past night

FRIDAY, MAY 20.

SATURDAY, MAY 21.

SUNDAY, MAY 22, 1853.

MONDAY, MAY 23.

This morning rainy tent
left for Tripoli.

Afternoon in company with
Mr. Rand left Owingville for Mt.
Sterling rain heavy clear -
Westbrook came in this
evening

TUESDAY, MAY 24.

Druckers met - today
adopted the Prickly Ash route.

WEDNESDAY, MAY 25, 1853.

Meeting of Stockholders
5 of old directors chose. Mr
Barton declining Mr. Wise elec-
ted - Evening left for Ows-
ville when arrived the
night -

THURSDAY, MAY 26.

This morning in company
with Mr. Wise left O. for
Tipton arrived at noon.

FRIDAY, MAY 27.

SATURDAY, MAY 28, 1853.

SUNDAY, MAY 29.

Blank Page(s)

MONDAY, MAY 30.

TUESDAY, MAY 31, 1853.

WEDNESDAY, JUNE 1.

THURSDAY, JUNE 2.

FRIDAY, JUNE 3, 1853.

SATURDAY, JUNE 4.

SUNDAY, JUNE 5.

MONDAY, JUNE 6, 1853.

TUESDAY, JUNE 7.

WEDNESDAY, JUNE 8.

THURSDAY, JUNE 9, 1853.

FRIDAY, JUNE 10.

SATURDAY, JUNE 11.

SUNDAY, JUNE 12, 1853.

MONDAY, JUNE 13.

TUESDAY, JUNE 14.

WEDNESDAY, JUNE 15, 1853.

THURSDAY, JUNE 16.

FRIDAY, JUNE 17.

SATURDAY, JUNE 18, 1853.

SUNDAY, JUNE 19.

MONDAY, JUNE 20.

TUESDAY, JUNE 21, 1853.

WEDNESDAY, JUNE 22.

THURSDAY, JUNE 23.

FRIDAY, JUNE 24, 1853.

SATURDAY, JUNE 25.

SUNDAY, JUNE 26.

MONDAY, JUNE 27, 1853.

TUESDAY, JUNE 28.

WEDNESDAY, JUNE 29.

THURSDAY, JUNE 30, 1853.

FRIDAY, JULY 1.

SATURDAY, JULY 2.

SUNDAY, JULY 3, 1853.

MONDAY, JULY 4.

TUESDAY, JULY 5.

WEDNESDAY, JULY 6, 1853.

THURSDAY, JULY 7.

FRIDAY, JULY 8.

SATURDAY, JULY 9, 1853.

SUNDAY, JULY 10.

MONDAY, JULY 11.

TUESDAY, JULY 12, 1853.

WEDNESDAY, JULY 13.

THURSDAY, JULY 14.

FRIDAY, JULY 15, 1853.

SATURDAY, JULY 16.

SUNDAY, JULY 17.

MONDAY, JULY 18, 1853.

TUESDAY, JULY 19.

WEDNESDAY, JULY 20.

THURSDAY, JULY 21, 1853.

FRIDAY, JULY 22.

SATURDAY, JULY 23.

SUNDAY, JULY 24, 1853.

MONDAY, JULY 25.

TUESDAY, JULY 26.

WEDNESDAY, JULY 27, 1853.

THURSDAY, JULY 28.

FRIDAY, JULY 29.

SATURDAY, JULY 30, 1853.

SUNDAY, JULY 31.

MONDAY, AUGUST 1.

TUESDAY, AUGUST 2, 1853.

WEDNESDAY, AUGUST 3.

THURSDAY, AUGUST 4.

FRIDAY, AUGUST 5, 1853.

SATURDAY, AUGUST 6.

SUNDAY, AUGUST 7.

MONDAY, AUGUST 8, 1853.

TUESDAY, AUGUST 9.

WEDNESDAY, AUGUST 10.

THURSDAY, AUGUST 11, 1853.

FRIDAY, AUGUST 12.

SATURDAY, AUGUST 13.

SUNDAY, AUGUST 14, 1853.

MONDAY, AUGUST 15.

Came up to Mr Barnes this eve

TUESDAY, AUGUST 16.

WEDNESDAY, AUGUST 17, 1853.

THURSDAY, AUGUST 18.

FRIDAY, AUGUST 19.

SATURDAY, AUGUST 20, 1853.

1st Drawn - 1st per Paul - 1st per L. M.
3rd Christ - 2nd Hark

Left this evening for Spring

SUNDAY, AUGUST 21.

MONDAY, AUGUST 22.

Returned this morning from Spring
Letter from home -
~~Bought a horse~~
Bought a horse and placed in the
Barns Chay -
Took possession of Room

TUESDAY, AUGUST 23, 1853.

WEDNESDAY, AUGUST 24.

THURSDAY, AUGUST 25.

FRIDAY, AUGUST 26, 1853.

SATURDAY, AUGUST 27.

2 Shirts - 2 vests - 1 pair pants - 1 pair socks
2 neck & collar - 1 drawers

SUNDAY, AUGUST 28.

MONDAY, AUGUST 29, 1853.

TUESDAY, AUGUST 30.

WEDNESDAY, AUGUST 31.

THURSDAY, SEPTEMBER 1, 1853.

FRIDAY, SEPTEMBER 2.

SATURDAY, SEPTEMBER 3.

ending at 12:00

SUNDAY, SEPTEMBER 4, 1853.

MONDAY, SEPTEMBER 5.

TUESDAY, SEPTEMBER 6.

Wash 9 Pieces

WEDNESDAY, SEPTEMBER 7, 1853.

THURSDAY, SEPTEMBER 8.

FRIDAY, SEPTEMBER 9.

SATURDAY, SEPTEMBER 10, 1853.

SUNDAY, SEPTEMBER 11.

MONDAY, SEPTEMBER 12.

TUESDAY, SEPTEMBER 13, 1853.

WEDNESDAY, SEPTEMBER 14.

Mr. alk 5 Pucc

Sift for Mr. Sterling this evening

THURSDAY, SEPTEMBER 15.

FRIDAY, SEPTEMBER 16, 1853.

SATURDAY, SEPTEMBER 17.

SUNDAY, SEPTEMBER 18.

Returned to Oswego this morning

MONDAY, SEPTEMBER 19, 1853.

Left for Mt. Sterling

TUESDAY, SEPTEMBER 20.

Left for Maysville

WEDNESDAY, SEPTEMBER 21.

THURSDAY, SEPTEMBER 22, 1853.

FRIDAY, SEPTEMBER 23.

Blank Page(s)

SATURDAY, SEPTEMBER 24.

SUNDAY, SEPTEMBER 25, 1853.

MONDAY, SEPTEMBER 26.

TUESDAY, SEPTEMBER 27.

WEDNESDAY, SEPTEMBER 28, 1853.

THURSDAY, SEPTEMBER 29.

FRIDAY, SEPTEMBER 30.

SATURDAY, OCTOBER 1, 1853.

SUNDAY, OCTOBER 2.

MONDAY, OCTOBER 3.

TUESDAY, OCTOBER 4, 1853.

WEDNESDAY, OCTOBER 5.

THURSDAY, OCTOBER 6.

FRIDAY, OCTOBER 7, 1853.

Left Portland 8 1/2 A.M. Jan to
Boston 2 \$

SATURDAY, OCTOBER 8.

SUNDAY, OCTOBER 9.

MONDAY, OCTOBER 10, 1853.

TUESDAY, OCTOBER 11.

WEDNESDAY, OCTOBER 12.

THURSDAY, OCTOBER 13, 1853.

S
P
at camp in at noon Two 10
dinner & left for By sandy

FRIDAY, OCTOBER 14.

SATURDAY, OCTOBER 15.

8

SUNDAY, OCTOBER 16, 1853.

MONDAY, OCTOBER 17.

TUESDAY, OCTOBER 18.

Arrived at Champs Elysees at noon
from England

WEDNESDAY, OCTOBER 19, 1853.

2 white shirts - 2 white flannel -
1 Gray - 1 pair pants & 1 pair socks

THURSDAY, OCTOBER 20.

FRIDAY, OCTOBER 21.

This evening went to Mt Sterling

SATURDAY, OCTOBER 22, 1853.

Left M^r Stirling this morn for
Lisbryton arrived at noon

SUNDAY, OCTOBER 23.

MONDAY, OCTOBER 24.

TUESDAY, OCTOBER 25, 1853.

WEDNESDAY, OCTOBER 26.

THURSDAY, OCTOBER 27.

FRIDAY, OCTOBER 28, 1853.

SATURDAY, OCTOBER 29.

SUNDAY, OCTOBER 30.

MONDAY, OCTOBER 31, 1853.

TUESDAY, NOVEMBER 1.

This Mr

WEDNESDAY, NOVEMBER 2.

This Evening Return from Septon

THURSDAY, NOVEMBER 3, 1853.

FRIDAY, NOVEMBER 4.

This morning left for Siding
Spruce at 10 AM. Evening
out - shooting. Night at Billy Barnes

SATURDAY, NOVEMBER 5.

This morning shooting. Evening riding
with Mr. Barnes

SUNDAY, NOVEMBER 6, 1853.

This morn returned to Cambridge
Found cattle sick

MONDAY, NOVEMBER 7.

TUESDAY, NOVEMBER 8.

* white shirts * Blue's & Flannel
The flannel draws & Cotton
* silk Hosiery & Linen 1 neck
1 Brown

WEDNESDAY, NOVEMBER 9, 1853.

ew
Moved from Mr. Richards build-
ing into Mr. Barnes

THURSDAY, NOVEMBER 10.

FRIDAY, NOVEMBER 11.

SATURDAY, NOVEMBER 12, 1853.

SUNDAY, NOVEMBER 13.

MONDAY, NOVEMBER 14.

TUESDAY, NOVEMBER 15, 1853.

WEDNESDAY, NOVEMBER 16.

THURSDAY, NOVEMBER 17.

FRIDAY, NOVEMBER 18, 1853.

SATURDAY, NOVEMBER 19.

Breasting Ground on
the S & B. S. R. R. at the
mouth of the Dry Sand

SUNDAY, NOVEMBER 20.

MONDAY, NOVEMBER 21, 1853.

TUESDAY, NOVEMBER 22.

WEDNESDAY, NOVEMBER 23.

This morning went to Mr. Stetson
found Claude there on his
way to Tennessee, and to
take the upper portion of
the line. at Bondurant
all night

THURSDAY, NOVEMBER 24, 1853.

*Returned to Owingsville this
morning*

FRIDAY, NOVEMBER 25.

SATURDAY, NOVEMBER 26.

SUNDAY, NOVEMBER 27, 1853.

MONDAY, NOVEMBER 28.

Left in Evening for Bylandy
arrived at Powers in the
Evening.

TUESDAY, NOVEMBER 29.

Dined at Olive Hill, at night
racked Maylor

WEDNESDAY, NOVEMBER 30, 1853.

Dined at Stuart's ~~residence~~
found 3 men at work in pit
and found 3 or 4 cleaning
arrived at Big Sandy in
Evening put up at Mrs Spauld
Saw Mr Cooper.

THURSDAY, DECEMBER 1.

Left the morning for home
dined at Sackets and
spent the night at Gray's
called on Mr Wris in the eve

FRIDAY, DECEMBER 2.

Dined at Olver's hill and
reached Blacks at night
snowing nearly all the
afternoon - ground nearly
white.

SATURDAY, DECEMBER 3. 1853.

Left for C this morning; ground
frozen - at home last night

A letter from Selma also
one from H.

SUNDAY, DECEMBER 4.

MONDAY, DECEMBER 5,

TUESDAY, DECEMBER 6, 1853.

Left the money for orange

WEDNESDAY, DECEMBER 7.

THURSDAY, DECEMBER 8.

FRIDAY, DECEMBER 9, 1853.

Letter with Co and
appeal Commsary

Return to Owing, come this ev

SATURDAY, DECEMBER 10.

SUNDAY, DECEMBER 11.

MONDAY, DECEMBER 12, 1853.

Settled with Mr. Platts
Brows of Kelly & Horse 52.50

Left Orange in the Evening at
Mrs. Elmer's all night - Bill 50

TUESDAY, DECEMBER 13.

At Oyster Town at Night, Bill 75.

WEDNESDAY, DECEMBER 14.

Dinner at Galt's. Bill 50
Arrived at Mrs. Spauldick's in
the Evening

THURSDAY, DECEMBER 15, 1853.

FRIDAY, DECEMBER 16.

Blank Page(s)

SATURDAY, DECEMBER 17.

SUNDAY, DECEMBER 18, 1853.

MONDAY, DECEMBER 19.

TUESDAY, DECEMBER 20.

WEDNESDAY, DECEMBER 21, 1853. |

THURSDAY, DECEMBER 22.

FRIDAY, DECEMBER 23.

SATURDAY, DECEMBER 24, 1853.

SUNDAY, DECEMBER 25.

MONDAY, DECEMBER 26.

TUESDAY, DECEMBER 27, 1853.

WEDNESDAY, DECEMBER 28.

THURSDAY, DECEMBER 29.

FRIDAY, DECEMBER 30, 1853.

SATURDAY, DECEMBER 31.

CASH ACCOUNT.

1853

Mar 10	Mr Fly Dr for Pump	3 25
	" " Log	2 00
	" " Sink	4 50
	Dr. for bath	<u>5 00</u>

Bill at Lunch	
4 kids Dinner	5 50

Baron	75
-------	----

Loosey State	1 62 1/2
--------------	----------

Mar 31	San Fly By bath	5 00
--------	-----------------	------

Apr 15	Recd of E.B. French	151 00
--------	---------------------	--------

Apr 16	Fare to Bath	1 25
--------	--------------	------

No. " Porters	1 25
---------------	------

Harper	20
--------	----

Gloves	1 25
--------	------

Cap	63
-----	----

Glass	17
-------	----

Flust	1 10
-------	------

Paper	30
-------	----

Ink & Pens	25
------------	----

Envelopes	20
-----------	----

Paid for Transcrip	
April 22 1853	1 50

1853

CASH ACCOUNT.

Apr 17	Bath	50.
	Trass	1.00
	Cape	13
	Boots	2.75
	Books of Holmes & Key	7.25
	Fill up dles	18
	Tickets to Boston	2.00
	Snack in Boston	88
	Bought Boston to NY	2.50
	Both dinner & back water	1.12 1/2
	Ticket to NY	4.00
	paid for breakfast	4.75
	Lunch on Y & Erie	11.50
	Lunch in NY	1.00
	paid baggage made Y & E	1.50
	Traveller's ticket	50
	Ticket to Ohio	16.10
	paid at D.C. B & P	1.50
	Bureau of Piquet	25
	Bird & Irving House	3.00
	Carpet Bag	2.25
	Bank of Deposit	38
	P () & Adams	58
	Bank	32

CASH ACCOUNT.

J B MacBride

By Cash

35.00

Baggage fare to St. Louis

50

Baggage collected to bus

1.00

Ticket at Cleveland Breakfast

.38

~~For Faint~~

.38

Butter to cash

5.00

Trucking at bus

2.00

Bill at Hotel

1.25

Bank of

25

Medicine

1.10

Butter to cash

10.00

Paid Pallas to Mary

1.50

Truck on Bay

.50

Lat cement

.25

Baggage to Buttery

2.50

Paid Porter for tips

.50

Paid for Nat

1.25

" " Knife

1.50

CASH ACCOUNT.

Apr 30	Recd of S & B. S. R R	\$80.00
May 2	Abram butter To Cash	Dr 10.00
May 2	Cash for whiskey & C Ticket to Menominee	75 50
May 5	Paid butter for 1/2 doz chickens & 9 4 " Eggs " 7 1/2 Dinner for men Burbank pd for Ham " " Potatoes	75 30 1.00 1.50 25
May 7	Paid for 3 doz eggs	15
" 9	" " 7 " "	35
" 12	Burbank of Burbank	20
" 10	Paid by at River	20
" 10	For Mrs To Cash	5.00
" 11	Appison To Cash	12.00
" 13	For Mrs Dr Cash for Baggage	40
" 13	Butter " " " "	50
" 13	Burbank	80

CASH ACCOUNT.

1853

May 17 Apperson L Cash 20 00

Paid for saddle 17 50

May 25 Recd of J. B. McBrook
for A. Cutler 6 25

Pa. to prostitute woman 1 00

" for Bible 1 00

May 30 Ed. Apperson Dr
for Cash 40 00

✓

CASH ACCOUNT.

Handwritten scribbles and marks, possibly including the number '27' and other illegible characters.

CASH ACCOUNT.

Chicken	10 to 12 1/2	
Corn		25
Oats	15 to 20 ct	Birds
Butter	10 ct	
Eggs	5 to 8 ct	
Meat	5 ct lb	
Lamb	1.00 to 1.50	

CASH ACCOUNT.

This image shows a blank, aged, cream-colored page, likely an endpaper or flyleaf from an old book. The paper has a slightly textured appearance and shows signs of wear, including a large, irregular tear along the left edge and several small, dark brown stains or smudges near the top center. The page is framed by a thin black border.

CASH ACCOUNT.

Chickens	10 to 12 $\frac{1}{2}$	
Corn		25
Oats	15 to 20 $\frac{1}{2}$	Birds
Butter	10 $\frac{1}{2}$	
Eggs	5 to 8 $\frac{1}{2}$	
Meats	5 $\frac{1}{2}$ to 6 $\frac{1}{2}$	
Lamb	1.00 to 1.50	

1853

CASH ACCOUNT.

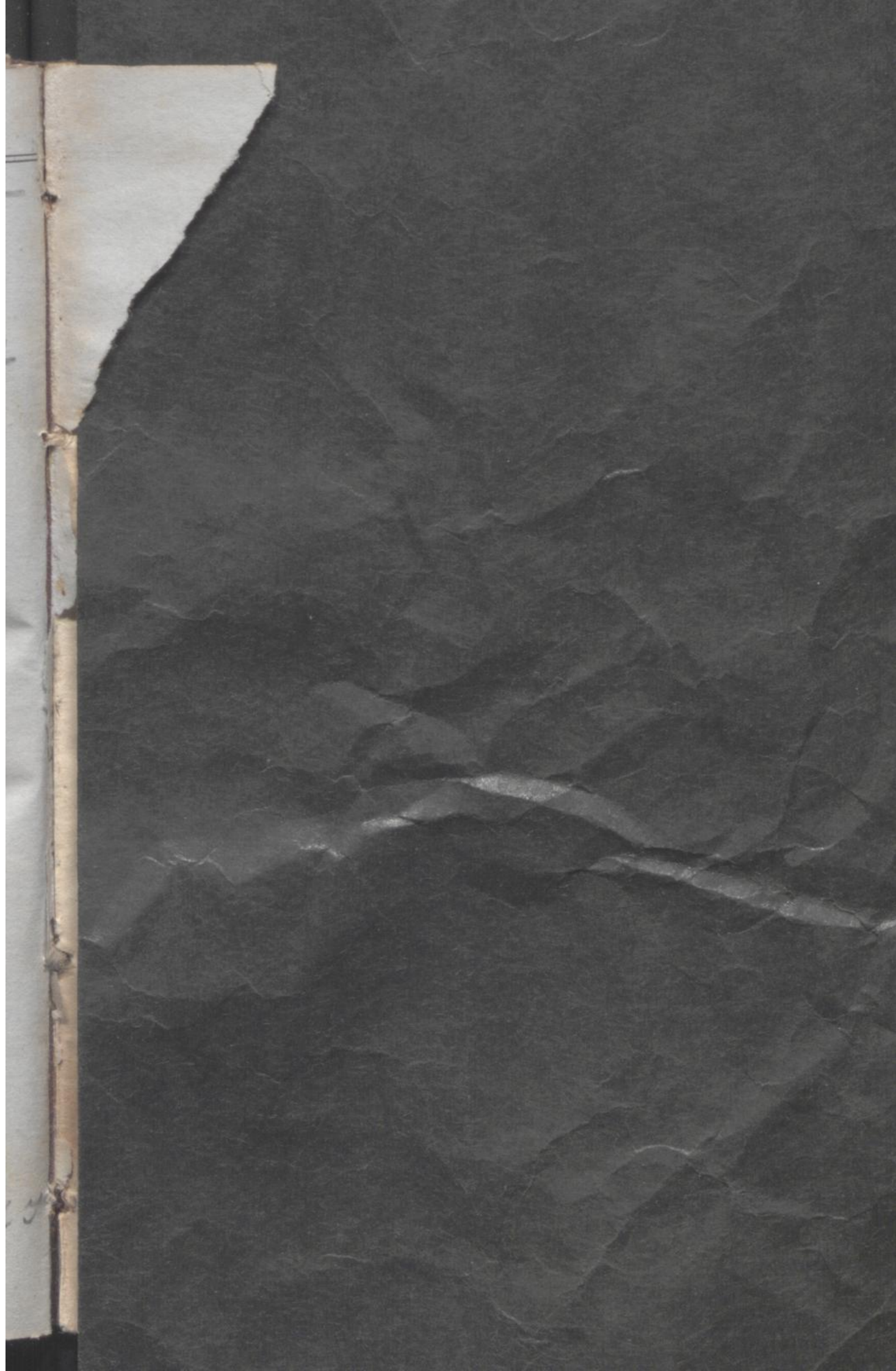
ap^y

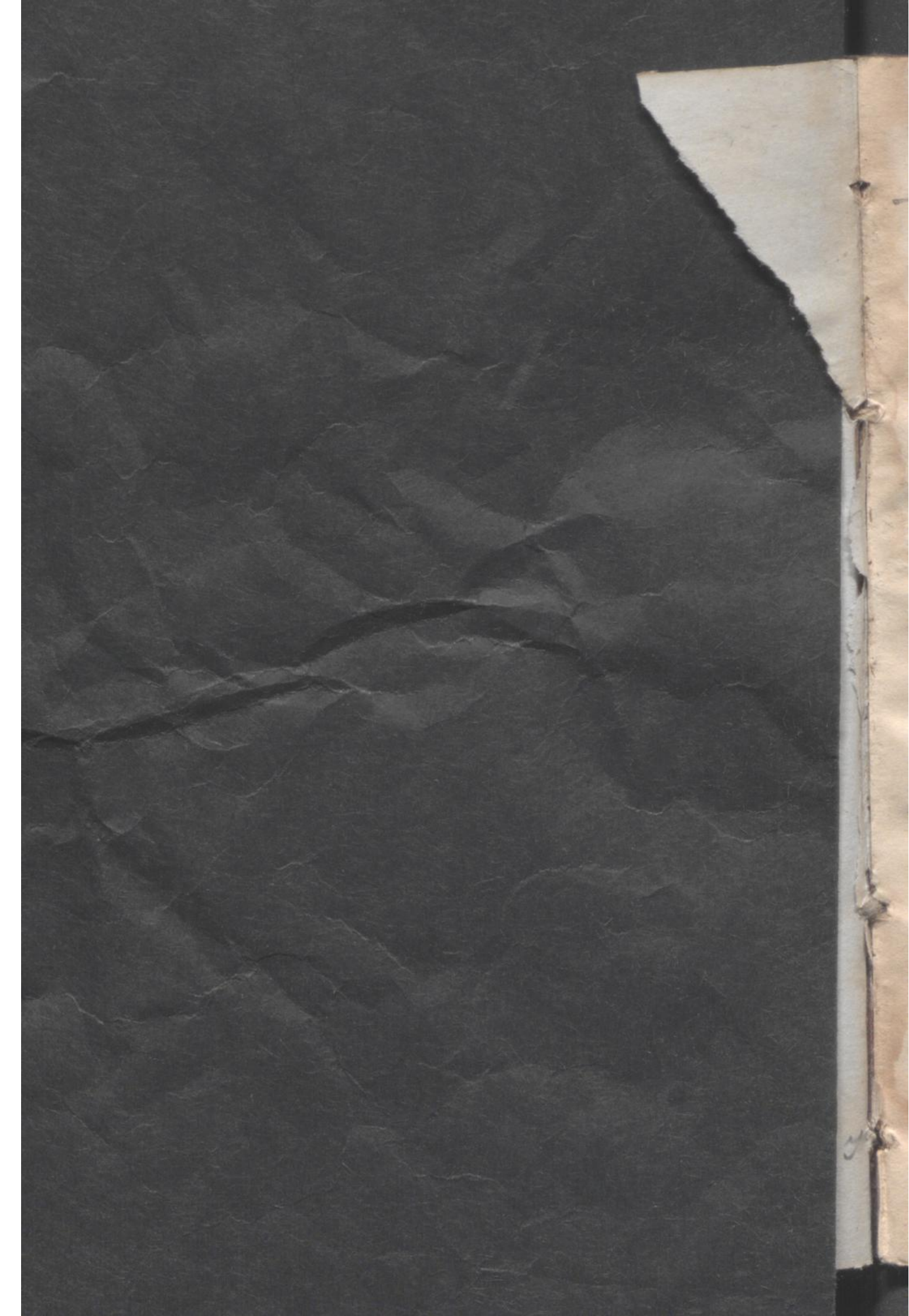
19 Truckman's Bill at Porters 75
 from forks of Tuplet
 East Levels 11 ft High
 all Levels 500 ft. High
 to Lake Mills

Estimate S & B. S. R. R.

Grading 1/2 m	12,000.00
Ballast	2,000.00
Track	10,000.00
Sand	300.00
Ironing	640.00
Engineering	10,000.00
Iron	8,250.00
Slupus	600.00
Chairs	320.00
Spikes	264.00
Sabons	320.00
Distributing	200.00

Rails 70th pr. Ga 110 T. pr m 75th pr





Stood for Mid Day - Red Plush
- Walnut or Rose
Hairpin - No 3 & wanting

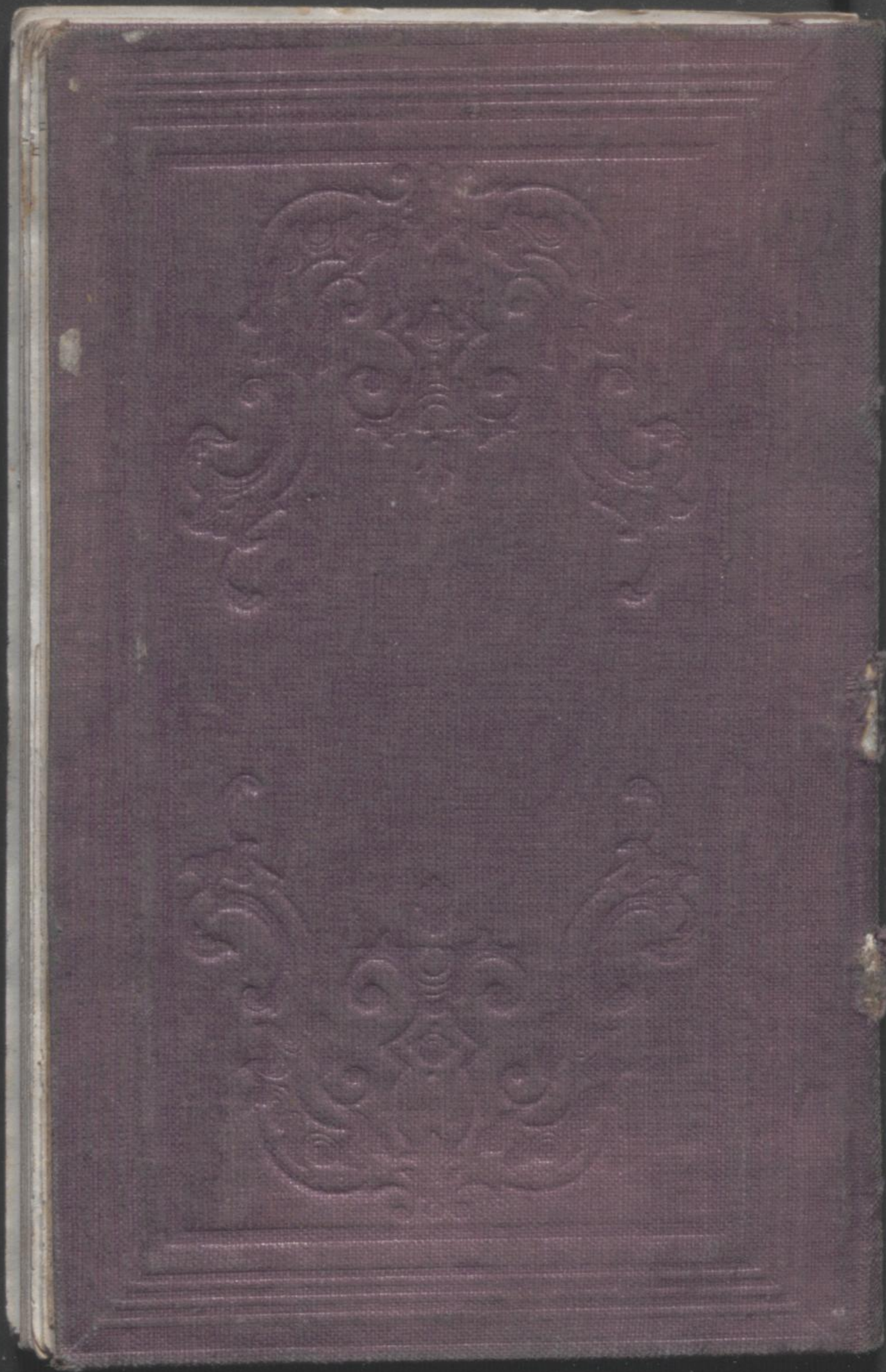
Intersection of Salt Well
and Rose Run since

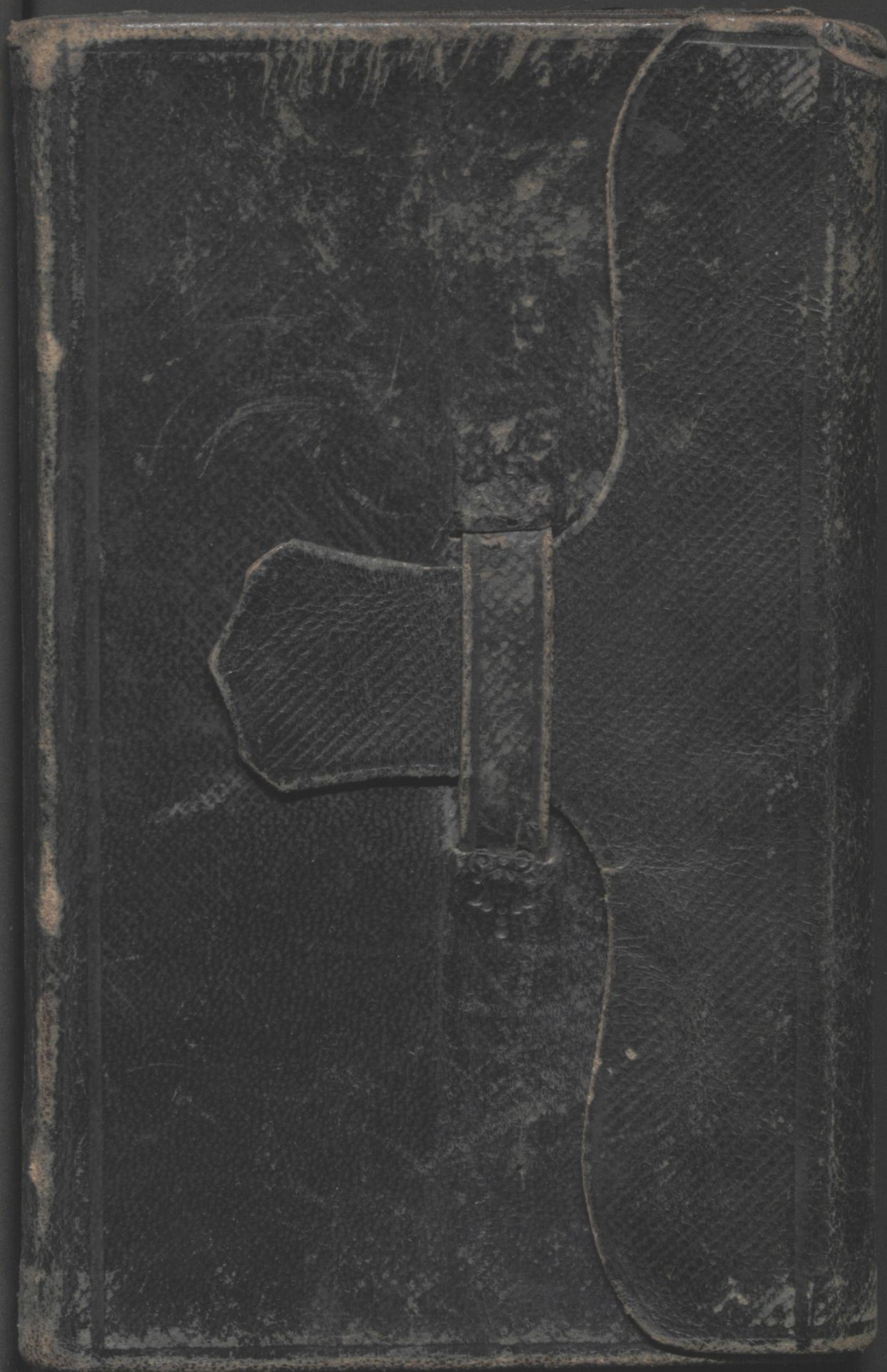
Salt Well 2619+54 Rose Run 2633+50

L 87° 10'

June 19, Ten pants, 2 towels, 1 thick shirt
19 my hair

Dec 17







COUNTING-HOUSE ALMANAC FOR 1855.

	Sunday.	Monday.	Tuesday.	Wedn'y.	Thursd'y.	Friday.	Saturday.
JAN.		1	2	3	4	5	6
	7	8	9	10	11	12	13
	14	15	16	17	18	19	20
	21	22	23	24	25	26	27
	28	29	30	31			
FEB.					1	2	3
	4	5	6	7	8	9	10
	11	12	13	14	15	16	17
	18	19	20	21	22	23	24
	25	26	27	28			
MAR.					1	2	3
	4	5	6	7	8	9	10
	11	12	13	14	15	16	17
	18	19	20	21	22	23	24
	25	26	27	28	29	30	31
APR.	1	2	3	4	5	6	7
	8	9	10	11	12	13	14
	15	16	17	18	19	20	21
	22	23	24	25	26	27	28
	29	30					

	Sunday.	Monday.	Tuesday.	Wedn'y.	Thursd'y.	Friday.	Saturday.
MAY.							
	6	7	8	9	10	11	12
	13	14	15	16	17	18	19
	20	21	22	23	24	25	26
	27	28	29	30	31		
JUNE.							
	3	4	5	6	7	8	9
	10	11	12	13	14	15	16
	17	18	19	20	21	22	23
	24	25	26	27	28	29	30
JULY.	1	2	3	4	5	6	7
	8	9	10	11	12	13	14
	15	16	17	18	19	20	21
	22	23	24	25	26	27	28
	29	30	31				
AUG.							
	5	6	7	8	9	10	11
	12	13	14	15	16	17	18
	19	20	21	22	23	24	25
	26	27	28	29	30	31	

	Sunday.	Monday.	Tuesday.	Wedn'y.	Thursd'y.	Friday.	Saturday.
SEPT.							
	3	4	5	6	7	8	9
	10	11	12	13	14	15	16
	17	18	19	20	21	22	23
	24	25	26	27	28	29	30
OCT.	31						
	1	2	3	4	5	6	7
	8	9	10	11	12	13	14
	15	16	17	18	19	20	21
	22	23	24	25	26	27	28
	29	30	31				
NOV.							
	4	5	6	7	8	9	10
	11	12	13	14	15	16	17
	18	19	20	21	22	23	24
	25	26	27	28	29	30	31
DEC.							
	2	3	4	5	6	7	8
	9	10	11	12	13	14	15
	16	17	18	19	20	21	22
	23	24	25	26	27	28	29
	30	31					

277 250 31 31

\$150

Cattletown May 28/54

Received of M. McKittrick one Hundred
& fifty Dollars in full on Pay roll of S & B S N N.
for Jan & Feb. 1854

E. H. Paine

\$70

Cattletown May 28/54

Rec'd of M. McKittrick Seventy Dollars
in full on Pay roll of S & B S N N for Jan & Feb

Jno W Powell

\$70

Cattletown May 28/54

Rec'd of M. McKittrick Seventy Dollars in
full on Pay roll of S & B S N N for Jan. & Feb.

W. S. Elliott

\$75

Cattletown May 30/54

Rec'd of M. McKittrick Seventy five
Dollars on Pay roll of S & B S N N for Mar.

E. H. Paine

\$35

Cattletown May 30/54

Rec'd. of M. McKittrick thirty five
Dollars on Pay roll for Mar 1854

J W Powell

\$35

Cattletown Mar 30/54

Rec'd of M. S. Hutton thirty five
dollars on Pay Roll of S. S. M. N. for Mar.
W. S. Elliott

\$40

Cattletown Apr 3 1854

Rec'd of M. S. Hutton forty dollars
on Pay Roll of S. S. M. N. for Feb. 1854
J. B. Morton

\$25

Cattletown Apr 3. 1854

Rec'd of M. S. Hutton twenty five
dollars on Pay Roll of S. S. M. N. for Feb
G. W. Everman

~~\$50~~

\$50

Cattletown Apr 3/54

Rec'd of M. S. Hutton ^{fifty} ~~twenty five~~
dollars on Pay Roll of S. S. M. N. for Jan
and Feb. 1854 H. J. Combs.

\$150

Cattletown Apr 6th 1854

Rec'd of M. S. Hutton one Hundred
and fifty dollars for services on S. S. M. N.
for Jan. & Feb 1854 A. B. Burbon R

\$150

Cattletown Apr 7th 1854

Rec'd of M. S. Hutton one Hundred
and fifty dollars for services on S. S. M. N. for Jan &
Feb. 1854 E. B. Sayles.

154

\$80

Cattlebury Apr 7/54

Rec'd of M^{rs} Hilton Eighty Dollars
on Pay roll of Sth Bth Nth for Jan & Feb 54
Wm C Mitchell

\$150

Cattlebury Apr 8/54

Rec'd of M^{rs} Hilton one Hundred
and fifty Dollars on Pay Roll of Sth Bth Nth
for Jan. & Feb 1854 F. M. Burbank

1854

\$40

Cattlebury Apr 25/54

Rec'd of M^{rs} Hilton forty Dollars
in full on Pay Roll of Sth Bth Nth
for March J. B. Norton

354

\$150

Cattlebury June 17th 54

Rec'd of M^{rs} Hilton one
Hundred & Fifty Dollars in full for services
on Sth Bth Nth for April & May 1854
F. M. Burbank

\$80.00

Cattlebury June 17 54

Rec'd of M^{rs} Hilton eighty
Dollars for services on Sth Bth Nth
for Apr & May 1854

J. E. Pruitt

\$150.00 Callus buy June 19th

Recd of M^r Hilton one
Hundred & fifty Dollars for services
on S^{an} S^{an} S^{an} for Apr & May 1854

A. H. Burbank

\$80.00 Callus buy June 19th 54

Recd of M^r Hilton eighty
Dollars for services on S^{an} S^{an} S^{an}
for Apr & May 1854

J. B. Morton.

\$50.00 Callus buy June 19th 54

Recd of M^r Hilton fifty
Dollars for services on S^{an} S^{an} S^{an}
for Apr & May 1854

W. S. Combs

\$80.00 Grayson June 19/54

Recd of M^r Hilton
eighty Dollars for services on
S^{an} S^{an} S^{an} for Apr & May 54

W. C. Mitchell.

\$150.00

Grayson June 20th 54 Recd

of M^r Hilton one Hundred & fifty Dollars for ser-
vice on S^{an} S^{an} S^{an} for Apr & May 1854

E. S. Lyon

Received from M. T. Hilton \$50.00
pay for 2 months (April & May)
also \$8³³/₁₀₀ pay for November 1853
June 20th 1854.

G W Everman

Recd June 21-1854 of M. T. Hilton one
Hundred & Fifty dollars for services on S & B
S & B for Apr & May 1854.

\$150

C. H. Paine

June 21. 1854 Recd of M. T. Hilton eighty
dollars for services on S & B S & B for Apr
and May 1854

\$80

W. S. Elliott

June 21. 1854 Recd of M. T. Hilton
forty dollars for services in
engineering Corps of S & B S & B

\$40

L. B. Wolfe

\$40 Recd of M. T. Hilton forty dollars
for services on S & B S & B for June '54

J. H. Frewitt

\$40 Recd of M. T. Hilton forty dollars for
services on S & B S & B for June 1854

W. S. Elliott

\$75

Cattletown Aug 17/54

Recd of W. H. Hutton Twenty five
Dollars for services on S. & B. M. N. for
June 1854

J. H. Paine

\$150.00 1st July. 1854.

Received from W. H. Hutton the
sum of one hundred & fifty dollars
for services up to date. & also
fifty dollars & 95 cents. for
account furnished.

C. W. Lanyon.

\$300
Cattletown Nov 1854 Recd of
W. H. Hutton three Hundred Dollars
for services on S. & B. M. N. for June
July and Aug also March 1854

\$200
Cattletown Nov 1854 Recd of W. H.
Hutton three Hundred Dollars for ser-
vices on S. & B. M. N. for March June
July & August 1854. A. H. Burbank

\$16.0

Cattletown Nov 1854, Rec'd of
Mr. Whitton one Hundred and fifty
Doll for services on S. N. M. for
March, June July & Aug 1854

W. C. Mitchell

\$43.26 Rec'd of Mr. Whitton Cattletown
Nov 1854 forty three Dollars 26/100
for services on S. N. M. from July
10 to Aug 31 1854 Wm D. White

\$100 Cattletown Nov 1854 Rec'd
of Mr. J. Whitton One Hundred Dollars
for services on S. N. M. for
Mar June July & Aug 1854 E. S. Thomas

40 Cattletown Nov 28 1854
Rec'd of Mr. Whitton forty one
for services on S. N. M. for
Sept 1854

J. S. Thomas

\$150

Cattletown Feb 2/1855 Rec'd. of
Mr. Mitton one Hundred and fifty Dollars
in full for services on the S & B. M. N. for
Sept & Oct. 1854

From M. C. Burkhardt

\$150

Cattletown Feb 21/55 Rec'd. of
Mr. Mitton one Hundred & fifty Dollars
in full for services on the S & B. M. N.
for Sept & Oct. 1854 A. H. Burbank

\$80

Cattletown Feb 23/55 Rec'd. of
Mr. Mitton eighty Dollars in full for
services on the S & B. M. N. for Sept and
Oct. 1854 W. C. Mitchell

\$80 Cattletown Feb 19/55 Rec'd. of Mr. Mitton
eighty Dollars in full for services on the
S & B. M. N. for Oct and Nov '54
J. S. Pittman

\$50

Wattletbury Feb 19th 55 Rec'd of
M. J. Hutton fifty dollars in full for
services on S & B. & N. R. for Sept & Oct

1854

George M. Warran

\$50 Sept & Oct.

\$50 April & June. by F. M. Surbain

\$100 Wattletbury Feb 21/55 Rec'd of
M. J. Hutton fifty dollars in full for ser-
vices on S & B. & N. R. ^{for Sept & Oct.} also fifty for Jan
and April 1854

D. B. Wolbr

\$80.00 Ashland May 28th 55 Rec'd of
M. J. Hutton eighty dollars in full for
services on S & B. & N. R. for Nov. and Dec
1854, or up to Jan. 1st 1855

M. B. Mitchell

\$50 Ashland May 28th 55 Rec'd of
M. J. Hutton fifty dollars in full for ser-
vices on S & B. & N. R. up to the first of
January 1855

D. B. Wolbr

1853 SUMMER

Dr

Dec 1 To saddle bags

6 00

1856 5 30
Sep 1855 9 30

62.50

40.00

25.00

127.50

104.17

2027.90

300.00

1727.90

864

964.764

2027.90

2028

400

1628

542

1086

X

255
4
1020

12750 53
2 20
255.00 10.60
5
127500

1856 5 30
8
30
7) 240
34 2/3
8 1/2
78
117
95

1853 S & B S M N

Dr

Dec 12	L Bann's Bill for Horse	3.00
" 13	" x Elliot's " "	50
" 14	" x Elliot's " "	45
" 14	" x Gables " "	25
" 14	x Black's Bill for Truckage	16.50
22	" Horse Keeping	40
22	" Paid Auctioneer	50
Jan 24	J M Spurlock	24.00

1854 L to Cash ~~Letter~~

Jan 2 L to Spring House 25

S & B S M N

Dr

11	x L to Freight on tents &c	5.00
	" x Load of Coal	1.00

J M Spurlock

Dr

L to Cash ~~Letter~~ 30.00

17 S & B S. R. R. Dr

Dr

J. Casbotts Bill Horse Keeping 7.50

Cooper

Dr

Jan 18 L to Mrs Spurlock No Bill 6.00

J M. Spurlock

Dr

Jan 18 L to Cash ~~Letter~~ 5.00By Cooper's Bill ~~Letter~~ 6.00

1854

Jan 23 S & B. S. R. R.

Dr

1 Ball Toms

.10

2 Hand Axe

2.25

4 doz Pencils

1.90

Cash

to

Washing Bill

1.30

Blank Books

1.87

Sent to R Post agent

3.00

for Semi weekly Tribune
and Railway Times

Jan 24 S & B S R R

Dr

To 1 doz Pencils
all over 2/3 of them were cheap
back

1.75

to

By Sub

1.00

S & B. S. R. R.

Dr

Jan 25 J. M. P. M. Board Bill

53 45

" " Augustine P. M. Board

21 68

" " J. R. M. Board

4 00

" " E. H. P. Board

16 88

" " Paid at Newmains

1 75

" " Supplies

3 00

Cash Credit

Jan 25 By Heat 1.75

1854

Feb 2nd

bath

L

10	X	By Jan B.S. to Mayfield	2.50
25	" 3	" Bill at Sea House, Stage &c	3.75
70	" "	" " " Penhook	30
	8	" Boots	4.00
30	X	" Handman	1.40
7	"	" Blacking	16
	9	" Willmersons Bill Brans	4.25
	" X	Stage Jan	2.75
	X	" Mattemans Bill Stu.	1.56
10	X	Boat Jan	2.50
5	X	" No. 12	25
	11	L & B S M	Dr
0		To Bill at Wilchs	1.50
		" Sturatt Horse Repairing	1.13 ^{1/2}
5	11	A Bristan 12	L
8	11	By Bath	2.63
			Dr
	X	To Willmersons Bill	2.00
	14	L & B S M	Dr
	X	To back to Bill	5.00
	X	2 Sh Candies	32
	X	1 Sock	20

1854	S V M S R N	dr	
Feb 15	To Shoring House		25
"	To Bush Coal		225
"	To Dry Pencils		75
	Mrs Spunk	dr	
Feb 16	To Cash		15.00
	Paia Sayre Mitchell. Evman		
Feb 16	and Bond for Jan 1854		
	S & B. S. R. N	dr	
Feb 17	To K L P		1,75
	Coal	h	
"	Ande Phil		1,00
"	S & B. S. R. N	dr	
"	To K L P		50
"	To K L P		13
"	Coal	h	
"	By dinner at hotel		12
"	S & B. S. R. N	dr	
Feb 20	To K L P		80
"	To Shoring House		25
" 23	S V M S R N	dr	
"	To repairs on Room		2,00
"	"		

1854 J. M. & M. Spurlin

Feb 24 By amt due then on settled 3.03

DR

To balance 50

25 J. M. Spurlin

By Pay Roll for Jan 40.00

To Cash 40.00

DR

To board bills of Party
while Locating (at Spurlin) 72.03

John P. Spurlin

To Cash for Jan 35.00

By Pay Roll for Jan 35.00

DR

To Xhring Horse 50

Mar 1 . Mattress & Candles 50

8 To Cooper

To Cash 40.00

Cash

By Washing Room 125

DR

18 To Mrs. Kuperling 75

1854	Cash	lc
Mar 18	Bills from C to C & Back	0 75
	Three Cooper	lc
18	By Cash	20.00
	Cash	lc
20	Bills to Portmouth & Back	4 00
22	" " Stinson & Back	75
	S & B S R R	dr
	* Horse keeping Stinson	75
	* Mining fund	20
	* Pitcher	75
	* Kirt	30
Mar 30	Sold to Paine & Co. horse	
	Saddle &c for	50 50
	S & B S R R	dr
	Spice aciman	50
	Diet	dr
	To Cash	3.00
	S & B S R R	dr
	* To Cash	3.00
Apr 5	* Paid Hayman 5 day	2.50
	" " Aciman	1.00

	J M Wolf		6
	Spent by back		50
	Little Sonnen		SR
	Boas Bill at Newmans 16 weeks	2.00	
	Little M. Buntank		SR
Apr 5	To 6 3/7 weeks Boas c 2.50	16.08	
	J Buntank		SR
Little	To 6 3/7 weeks Boas c \$2.50	16.08	
	E 16 Pain		SR
	To 6 3/7 weeks Boas c \$2 1/2	16.08	
	J M Wolfson		SR
	To 6 3/7 weeks Boas c \$2 1/2	16.08	
	W S Eltgate		SR
	To 6 3/7 weeks Boas c \$2 1/2	16.08	
	W L Combs		SR
	To 6 3/7 weeks Boas c \$2 1/2	16.08	
	J Pruitt		SR
	To 3 4/7 weeks Boas 2 1/2	8.95	
	W 6 Mytchell		SR
Little	To 3 6/7 weeks Boas c 2 1/2	9.64	
	W D Exman		SR
	To 4 6/7 weeks Boas c 2 1/2	9.29	

2072.12.12

Dr

Apr 5- To locus of Wolf 5 1/2 weeks

To

2 50

.

1.50

W.C. Mitchell

Dr

4 15

Apr 7- By Cash

36

LANSN

Dr

.

75

Paid to at Widow Poyde

4 50

W.C. Poyde

Dr

Apr 8 To Cash

20.00

No Poyde

Dr

" 8 To Cash

10.00

~~LANSN~~

By Cash by W.C. Poyde

2.25

LANSN

Dr

11 To House Bill

15 69

To Mr. Clark

1.00

Bill at Meads

45

~~LANSN~~

Dr

April 3 To Cash

75

Dr

1853

SMBANK.

Dr

Apr 15 To Horse Keeping

4 25

W Bank

u

~~Settle~~

By cash on settlement

2 53

May 16 ~~Left with Mr. Settle for~~~~Cooper \$100.00~~

May 16 SMBANK

Dr

For 1 Lape

2 25

" Paper

45

28 May

Dr

To Cash

20.00

23 SMBANK

Dr

X Horse Keeping

50

W Bank

u

To Settlements

18.50

EM. Paine

Dr

28 To Cash

7.00

Jul 1 SMBANK

Dr

Spencer's Bill

X For Horse Keeping 5 days 15 60

Jul 1 ~~Settle~~ Morton to Cash

5 00

Finnis Cooper to Cash

1 00

Thos B. Cooper
Lum of L. back 50.00

9 ~~Little~~ M. L. Combs
L postage on Book 30+80 1.10

9 L & B S N N
L Horse Roping on Road 65

14 ~~Little~~ M. L. Combs
L Cash 8.00
Lamin

L to Horse Roping 7.00

18 M. L. Combs
L to back in Settlement 10.91

20 L & B S N N
L Horse Roping on Road 65

2 W. D. Brown for Cooper 10.00

~~Little~~ M. L. Combs
L to Ballana in Settlement 91

1854 E H Paine

Dr

June 21 ^{little} To Balance as Settlement

37 16

J M Mink

Dr

26 Cash

30 00

Pat John Paine

Dr

26 To Cash

10 00

Price for Ship Budget

5 00

~~Sept 16 To Cash~~

30

To Cash

25 00

Price of 6 Cash for Cooper

40 00

J M Mink

Dr

July 1 For Forged Bill for Shoring

19 0

For Poage Bill for Horse

3 00

House " " " Jan 4"

1 75

Recd of E H Paine on Horse

28 75

Sold by Mr Westbrook

3 J M Cooper

Dr

By Cash

6 00

J M Mink

Dr

X Price for Horse keeping

2 00

To Repairs on Saddle

.65

1853	Wminton	Dr	
July 24	To James Ham	12 00	
	To Cooper	11	
	By Cash from blacked deer	30	
	in June 29/54	45.00	
	Wminton	Dr	
	To Elliotts deer	15.50	
	To M. M. Bank	Dr	
	To Paice Bros & Bros	20 71	
Aug 24	Brown	Dr	
	To Cash	1 00	
	To H. H. Craft	Dr	
27	To Cash (Pais)	15.00	
	Mrs Spurlock	Dr	
30	To Cash	10.00	
	Wminton	Dr	
Sept 1	To Note from Miles	24 55	
"	" B. M. Banka deer	7.50	
"	To B. M. Bank	Dr	
"	To Horse Roping for May 31	36.80	
"	To 13 1/2 Meckle c	2.80	
"	To Chain bought by Cooper	1.50	

1853 *Howe's House*

Sept 15 To Sundries 10.25

M. M. M. M. M. dr

To Cooper's Bill 2 40

~~Feb 6. 10 to 14 - Mar 30~~

S. S. S. S. S. dr

#18 3 lbs candles 1.00

Mrs Brown dr

25 To Cash 2.00

Pitman dr

28 ~~to~~ Mail Boy 1.75

Henry Ruck dr

To ~~the~~ returned 1.00

Oct *M. M. M. M. M.* dr

2 To ~~the~~ on West 50.00

" Martins Bill 2.00

" Cash 5.00

Centra dr

By Price at ~~the~~ 70

Newcastle Oct 21 1854

Recd. of E. B. French 100.00

Bare up note of 25th that
amt. having been paid to H-
in July last

Recd by letter from J. B. Wood
brook 200 for services on
Josselyn.

Cash Cor

Hermitas New Bridge 115.00

Palmer 3.00

Watch 48.00

Cake Basket 11.50

Pauls & Bros 7.00

Glove & Locke 1.45

Fare to Ipswich 3.00

Coach .75

Fare to Boston 2.50

Wine 50

Lime &c 31.00

Tickets B to C in. 19.00

Boat at C in 1.75

Tickets to Chelmsford 2.90

	Bill at Hillsboro	75
00	" " Chillicothe	2.00
	Fare to Portsmouth	2.50
	Bill	1.00
	Fare to Sandy	2.00
Oct	T. B. Cooper	Dr
31	To Rent of Buildings	
	3 1/2 mos @ \$6.00	21.00
"	T. B. Cooper	Dr
Nov	To Aunt Jane Paine	77
4	J. B. Morton	Dr
	To Miller's Bill	5.65
	Mrs Brown	Dr
	To Cash for	1.00
5	From Mellon & Co	
	1 Bag No 5 Shot	
	M. Mellicum	Dr
	To 12 1/2 lbs. Shot	
23	Little Beans with Martins	
	up to Nov 26	25.00
	Bill at Grumpy Bay	2.75
	Sand's Bill	1.00
	Martins Bill at Martins	2.00

Cattletown Nov 23/54		
	Minnie's Bill	70
	J M Westbrook	6
	By Cash	1415.00
	Mrs Brown	Dr
	To Cash in Advance	7.00
	Paid Wash Bill to	
	Deight	3.00
	Mrs Spurlock	Dr
24	To Cash	10.00
	J M M	Dr
#	To 50 Bush Coal	5.00
	" 10 lbs Candies & 26 th	2.60
	Paid for Comforter	1.83
	Paid Glendon	50.00
25	Paid A.M.B.	300.00
	Sut Clark	30.00
26	Sut - Horse	70.00
	Paid Burbank A.M.B.	
	Combs Ore	55.00
	Cash Borrowed	41.00
	Paid Hester	1.00

Settling Nov 26

Paid M. M. Banks Cr. 50.00

Paid for 2 dinners , 50

Dr. M. M. Banks

L. H. H. 3.90

Dr. M. M. Banks

By amt due on Settlement 326

Paid M. M. Banks 10.00

" Pitman 40.00

" at Wilgus 75

Dec 1 " " Gobles 10.50

" 1 " Mrs. M. M. Banks 25.05

2 Paid M. M. Banks 160.00

" Eva for 640 43.94

" Dinner at Irving House 1.00

Dr. M. M. Banks 50

M. M. Banks

To Cash from M. M. Banks 200.00

" from Lloyd 50.00

M. M. Banks

L. Cash

3.00

1854	Ballusling	Dr	4
	Little Bys	Dr	
	To Cash		20.00
Dec 4	Int to 16		20.00
"	Morton	Dr	
	To Montague's Bill		1.30
	Clark & Doherty	Dr	
	To Cash paid Eba		43.94
6	C. Bys	Dr	
	To Cash Little		20.00
	W. E. Egan	Dr	
12	By Int due on Little		3.40
	Thos. Haggart	Dr	
16	To Cash Paid		40.00
1855	John Haggart	Dr	
Jan 15	To Cash Paid		5.00
	Mr. Martin	Dr	
	To Cash Little		10.00
	Mary Ann Skunk	Dr	
30	To Cash on Mary Ann		25.00
	W. B. Smith	Dr	
Feb 2 nd	By Cash		\$ 40.00

Battleburg Feb 9th 1855

Lt Horse with Mr Martin Evening

S & B M R Dr

To Horse Keeping from

Oct 1/54 to Feb 1/55

17.57 for 12 c \$280 49 290

S & B M R Dr

Feb 12 12 Buck load 1 20

19 Recd of S & B M R
By Hands of A. C. McIntire

960 \$ 960 00

Paid Filman 38 25

up acct to acct

Lt to Portsmouth by

Stony for check 100 00

Feb 21. Litter with Mr Martin

to Feb 24 inclusive 13 22 50

for board

Paid Morris Fare to Montague 1 30

26 O. H. Martin Dr

To Cash 10 00

By Do 9 00

March 3^d 1855

	OK Martin	Dr
	To Cash Puttin	10.00
Feb 5	By Cash	15.00
6	To Cash	20.00
	By Cash Puttin	2.50
6	Recd of Mr Clark	40.00
	of 190 left with him	
	OK Martin	Dr
9	By Cash Puttin	2.50
	LOBBIN	Dr
	To 10 bush coal	1.00
	Puttin to the Mitchell	Dr
	By Cash Borrowed	20.00
	Ed Roberts	Dr
	By Cash	20.00
	Mr O. B. Martin	Dr
	By Cash Puttin	1.00
Mar 13	OK Martin	Dr
	To Cash	20.00
23	Paid to Rossman	
	A. Mitchell	5.00

Callitrony Mar 22 '55
S. W. N. B.

To Recording Bond in bailu 2 60

Do Do Insurance 2 50

~~28~~ Bills on Brad 2 75

" 2 Appraisals 30

28 Left with A. W. M. bank for
collection two bills against
Clark & Schuly

me 43 94

me 17 00

~~28~~ A. W. M. bank 20

28 Cash 20 00

Fare Callitrony to Cin. 2 50

Board at Boston 1 25

Porter & Bus 35

Tickets Cin to Boston 20 50

Appals etc 25 45

Supper 5 50

Board 35 35

Refreshments 5

Newcastle Apr 11th 1855
Settled with Mr Sly up
to Apr 13 inclusive for Board
and Firewood \$ 138.50
Note 50.00
Cash 88.50 138 50

Catting Apr 27 55

SPS Dr

Sowell & Lintus Bills

for 2 tapes ch 2 1/4 4 50

Mc Davis Bill 12 71

1 lb Candles 30

Apr.

30th C. H. Maister Dr.

To March Bill 20 00

John Henscroft Dr

* To March & Chanin 80 00

Mc Lloyd Dr

* To March 19 00

S. P. P. Man

May 3 To Cash Paid Mar 28 40 00

At W. M. Bank Dr

May 3 To Order on C. & Doherty 43 94

Will be on a bill 17 00

The above are bills paid
by me for Chas. & Doherty
at W. M.

Cattletown May 3rd 1855-

#	Nicholas Sawyer	Dr	
	To Cash		10.00
F. M. Murbank		Dr	
	To Cash		30.00
J. E. Roberts		Dr	
	To Cash		7.00

This Morning took
old Black down to
Haivy Pagar

LEBBEN

May 10	To Pitman's Price Ex-		
	penses to Mt Stutney		6.00
	" Freight on office furniture		2.00
	" Trucking & Wharfage		1.00
	" Broom		35
	" Water pot		50

To Pitman		Dr	
10 By Jan	To Mt. Stutney		6.00

Commenced Boarding at - Iron House

Ashland May 11th '55

El Valdiman

Dr

By Bank

38

~~503500~~

Dr

To Bank

38

DR Wolf

Dr

May 14 To March & Chain

68.00

Recd of J. P. Wolf

17 by the Dr of J. P. Wolf

800.00

To Bank

Dr.

To Cash

100.00

A. M. M. G. K.

Dr

To Cash

100.00

" Paid to Cash

~~50.00~~

50

DR Wolf

Dr

To Cash

5.00

Ashland Co

Dr

To J. P. Wolf

~~503500~~

Dr

To 100 Candles

25

Ashland May 23/54

LSMSRN

Dr

To Sam & Co. back 5.00

Bill

2.00

R. J. Co & M. Co

Dr

To Cash

300.00

LSMSRN

Dr

26 To Ayl & Sim & Co.

2.00

Candles

30

Due Letter with O W Martin

4 up to date

O W Martin

Dr

~~Will~~ Cash on settlement 250

St Apperson

Dr

due 6th To Cash

20.00

By Cash

6

Due

14.00

Thos Housecroft No

To Pay Roll from
Foster

230

54	As Mund Inn	6 ¹⁵
	Mr Bailey	22
	To Cash	10 00
	DRW's	22
	To Cash for Paper	5 00
	Atto Murbank	6
June 13	By Cash	50 00
	Dr Pittman	22
14	To Cash	50 00
	Hall	22
	To Cash for out	10 00
	Dr Westmore	6
June 20	By Cash Pittman	100 00
	Dr BSM	22
	To Stationary	1 20
	Fare to Mt Shetry & Back	11 50
June 30	Thos Hascamp & Co	22
	To Cash	47 00
	Hall	6
	To Cash for Shelton	5 00
	Saturday June 30	
	Sailed with Mr Bailey	
	are	

Ashland Tue July 1st
Commenced boarding at Meins

Sent to Dr McArthur
Hale & Hamlin m^y 29th June 29/55
Farm & Lloyd do 100th " 29/55
" " " 20.-50 Dec 16/54
Thos Huscup & Co. 51.45 June 28/55

Dr Wolf Dr.
July 3 To Cash 5.00
Thomas Huscup
By Cash 30.00

Capt Ham Little Dr
July 9 To Cash 15.00

Dr S. M. Dr
" To 1/2 Bn candles 540

Hugh Means Dr
To Sunk 425-0
Trunk & C 38

Ashland July 13/55
Patrick Burns Cr

By Diggins Allen 18.00

To Cash Dr 10.00

25 Hugh Means Dr

To Rette 3.87

W. Iron 19

28 Draying 10

Thomas Sannans Dr

To Cash 50.00

E. Appren Cr

Aug 2 By Cash 45.00

H. C. Falegione Cr

To Rette 5.00

Patrick Burns Dr

To Cash 5.00

J. J. Kinkead Dr

To Watch 43.00

J. M. Wolf Dr

To Green in Co 125.00

Ashland Aug 15

E. L. Apperson	Cr	
By Cash		10 00

Patrick Burns	Dr	
To Cash to balance		5 00

Mr. Vay Kenn	Dr	
To cash paid for		50

E. L. Apperson	Cr	
20 By Cash		5 00

Mr. Diggin	Dr	
20 To Cash		5 00

E. L. Apperson	Cr	
25 By Cash		20 00

Larrison	Dr	
To Cash		20 00

Sept 1	By Cash	10 00
--------	---------	-------

Ashland Sept-15-5-

A H Burbank Dr

00 To Cash 1 00

Van Kern Dr

00 To Cash 5 00

William Bygones Dr

50 13 To Cash 2 00

17 Thos Maccrop & Co Cr

00 By Cash on Note 40 00

Van Kern Dr

00 To Cash 5 00

Burbank Dr

00 To Cash on Company 60 00

Settled N Westbrooke Cr

00 By Cash on pay Hrs
from Dec 54 to Sept-54 3219.03
3219.03

Ashland Sept 21 '50

J. Pittman ~~Dr~~
To Bk in favor of J. A. H. B. 50.00
Settled with J. Pittman all acc
up to date

Mr Miller ~~Dr~~
To Cash 5.00

22
C. E. Garrison ~~Dr~~
To Cash 98.00

25
Mr Miller ~~Dr~~
To Cash 3.00

26
Weather & Motetius ~~Dr~~
To J. A. H. B. 7.50

Van Rine ~~Dr~~
To Cash 26.00

28
F. W. Burbank ~~Dr~~
To Cash 252.50

50 Ashland Sept 28/55

W H Tamm Dr

100 By Cash 1.00

acc 29 " " from Nickols 200.00

Paid Bailey for Horse Roping 32.50

Dog 5.00

2

100 Fred. Munnau Dr

To Nails 9.00

100 John Hargrave Dr

To Cash 167 67

100 E J Apperson Dr

To Cash 60.00

500 I J Berry Dr

By Cash 2.00

50 Sold Mont gomery County
Bond for \$1000 to Burbank
No. 135. date 15 apr 1853

Ashtons Oct 6

Col Hugh Poage	Dr
To Cash Pitt	10.00

C E Jamison	Dr
# To Handleys note on Means	100.00

John H Handley	Dr
By note on Means in favor of Jamison	100
note on Poage in favor of Saunders	67 67
	167 67

Hugh Means	Dr
Paid bobble for handly Mantles &c	80

Thos Saunders	Dr
# To note on Poage	67 67
" Cash	10.00

J J Bragg Pitt	Dr
By Cash	1.00

Ashland Oct 8th '55

Sandwich Dr

00 To Cash 50 40

Fare to Erie 2 50

Cigars 10

00 Book-Black 10

Cigars 10

Exchange on 200 \$ 2 00

Omnibus 28

Theater 35

Bill at Hotel 1 60

67 Dinner at Cleveland 5 00

67 Ice at Erie 50

Breakfast at Albany 50

80

67

00

00

Newcastle Oct-27 1855-
Settles with Mr. Flye
By giving note 133.00

Fares from N to Boston $3\frac{1}{2}$	11	25
Blackman 30	1	20

Hugh Pope dr

80

25

20

Sawed Lino in track from
West End of Scales to
100 + 113 to E end of Tunnel
to Billfont Road 220

West End Scales	to E end Tunnel	213
E end Tunnel	to Billfont Road	220
Billfont Road	" Hoods Bridge	57
Hoods Bridge	to cut beyond ways	206
Cut beyond ways	fast end 1 st way	197
heavy cut beyond shanty		
Open cut fill	200 + 200 + 220 + 240 +	
	+ 260 + 199 to open Culvert near	
Inlet to	To Corners Station	224
To far side Clinton Road		1233
E. F. Bridge		430
To open Culvert		36
do do		119

Bridge on Little Hood to be re-
placed

Culvert near Shanty beyond
Mays to be repaired Many ties
wanting in next heavy cut-

213 Commence at open culvert
220 Near Inletto and count the old
57 Road ties towards River and
200 deduct them

197 When Rock are laid 23

24

From E. end Easthams Tunnel	
To open culot	704
" East-Link	157
" Clinton Road ⁴³⁰	430
" Komo Station	1233
" Open Culot near Triplets	225
" Wood Creek	645
" E end Tunnel	277
" W end Scales	<u>218</u>
	3884

at Easthams	out	43
"	in	<u>23</u>
		3950

Shendams 340

4 Churn 4
4 Engine 24
7 Hole in Lumber 39
Engine & Lumber 41

Blank Page(s)

Monday Jan 23rd 1854 Tue. 0+2

This morning left town for the purpose of making a reconnaissance of a line approaching the Ute some 5 miles below town - Met Mr. Savage on the road had an introduction by Dr. Winkaid, invited to his house, would accompany me on the morning

The river being up Dr R. pett- ed me over hills & down dale around the heads of the streams - Arrived at Mr S. about 4 P.M. much pleased with the sight - Selected for a town if the location of the road is made on this route. At Mr S. all night

Tuesday Jan 24

This morning in company with Mr. S. and Mr. Pogue to whom I was introduced last evening. Made an examination of the proposed route, did not see any serious obstacles rather an easy route for this region - Reached Newman at noon

42° when we were invited to dine, after
which commenced our homeward
walk again. Mr. P. relieving the tedium
of the walk by the relation
of many rather amusing jokes practiced
upon certain individuals -

Leaving my horse in charge of Mr.
Savage returned to town on foot
preferring this rather than to ride so
far through the timber

Wednesday Jan 25 Ther +32°

This morning boys all left
town to commence the survey of road
route; after dinner left with the in-
tention of meeting them but as the rain
commenced soon after returned to town

Thursday Jan 26

Raining all day remained in
the office

Friday Jan 27 - River rose again
last evening a few inches (perhaps feet)

Up to Mr. Savage in morning but on the river
with him returned to his house at night

Sat Jan. 28th - Out on the line until after noon when left for C. when arrived near Sunset - after a tedious ride over the hills to avoid the back water - Had a call in the evening
Sunday Jan 29 - At home all day Col Poage and nephew took dinner with me had a call in the evening -

Monday Jan 30 Out all day in company with Col. Poage Examining route returned at batteburg in the evening
Made a call on one of my neighbors

Tuesday Jan. 31 - Out on the line all day returned to C. in the evening having completed the preliminary survey of the new city

~~Wednesday Jan 1~~ ~~About the office all~~

~~day~~

Wednesday

Thursday 1 - Messrs. Westbrook & Foster came up at noon - Mr. W. wishes me to accompany him to Mt. Sterling by the boat tomorrow - In the evening after my company left had a neighborly call

Thursday

~~Friday~~ Feb 2 A 2 P.M. took passage on
The Crystal Palace for Mayville, paying
2 1/2 \$ the same as to C.W. had a sudden
change in the evening thermometer at noon
about 55°, at sundown near freezing
and by 8 o'clock a storm of snow & sleet.

Arrived at M. about 8 P.M. stopped at
The Sea House - Mrs. Foster went in to C.W.

Friday 3rd Took stage this morning for
Mr. Stetson; R. large full and cold rainy
arrived at M. about 6 P.M. and put
up at Robinsons -

Saturday 4 - at the office in the morning
looking over notes in the evening up
at Capt. Jennings when remained to tea.

Mrs. W. and the children well.

Sunday 5 - About The House in the
morning in the evening at Robinsons
up until 12 o'clock, chatting with
Mr. Boyd and writing home -

Monday 6 - About the office
all day

Tuesday Feb 7 - About the office
Wednesday 8 - This day the di-
rectors were to have had a meet-
ing to decide in reference to a
change of time. Mr. Apperson re-
turned from S at noon but Dr
Cushing not being present - Noth-
ing could be done - Mitchell
returned from Tenn. Peabody
appointed chief & Adams con-
sulting Eng. of the road

~~Thursday~~ 9 Thursday 9th

This morning in company
with Mr. McCallough took stage
for Mayville where we arrived in the
evening. Mr. M. took the 9 o'clock
at 8 o'clock for Portsmouth, about
10 stepped on board the York State,
spent a restless night, did not
arrive at Colchester until 5 P.M.

Took tea at Mr. Cooper for the
first time -

Saturday 11 In company with
Mr. Lugg made an examina-
tion of a route down Hood-
drive at Mr. Lons and returned
to G. in the evening - Spent the eve-
ning at Mr. M. Calloughs he hav-
ing returned late last night from
Portsmouth

Sunday 12 At meeting all
day the office full could not find
any chance to read or write, in the
evening after all was over wrote to
H. also a line to Westbrook

Monday 13 Mr. Lister arrived here
this morning about the office all
day -

Tuesday 14 About the office all
day. Rainy & muddy

Wednesday 15 Copying drafts
of buildings in the office

Thursday 16 Rode over the work
Spent the night at Mr. Hord, Paid
off Saynes, Mitchell, Eveman & Now for Jan

Tuesday Feb 17th 1854 Left Mr. Hordas this morning and went over the work with Sayre. Dined at Col. H's and returned to battling in the evening—

Saturday 18 About the office all day

Sunday 19 Wrote a letter last ev. to H., about the office all day in the evening wrote a letter to H.

Monday 20 Rain commenced last night and continued through the day: at the office

Tuesday 21 - Still continues lowing: about the office

Wednesday 22 - More pleasant in the middle of the day but raining in the evening — at the office

Thursday 23 - This morning quite cool, the ground frozen

Friday 24

Saturday 25 To day lowing in the evening over in Virginia Excavating Mounds

Sunday 26 - This morning moon
pleasant - at meeting Evening
Raining

Monday 27 - Snowy all day,
a letter from Westbrook inviting
my attention to an iron spec-
ulation.

Tuesday 28 Out on ice - dined
with McCormack, returned to
battlement in the evening - warm

Wednesday Mar 1st Morning
foggy and chilling - River rising
rapidly - about the office -

Thursday 2 Raining in the night -
flood falling

Sunday 5th A meeting in the morn-
ing, about the office in the afternoon
in the evening. Made a call for the
first time since being in the State, on
the Briggs family

Monday Mar 6 In the morning a-
bout the office: afternoon opened a
mound on one of the hills in the vi-
cinity - Evening wrote to H -

Tuesday day 8th This morning drove
at Paines buying a tract of land for
Mr Comby went home with
Col Poage -

Thursday 9th - commenced raining
last night - Remained at Poage

Friday 10th Rain - Left Mr Poage at
noon arrived at C - at noon - Rained
all day

Saturday 11 Fair in the morning
went up

Mar 17, Friday - Out to Mayson, near
East Fork - left work at 1600, at 1000
all night

18th Returned to C - Mr Foster then
a letter from H -

20 In company with Foster went
to Portsmouth

a- Mar 21 Returned from Portsmouth
22 out on the line at Kelgous
or- all night - Back at noon on 23
25 Westbrook came up this morn-
ing in evening down at Poags
Change of line looks favorable

ing Mar 30 Mr Apperson left this morn-
ing having arranged the change of line
Leaving Mr Westbrook at 6:00 went
with Foster to look at the tunnel
Foster two Housecrafts Glendon Paine
and self dinner at Harvey Poags
Prewitt, Elliott & Wolf at Cyrus Poag
Afternoon commenced locating near tunnel
~~Returned to 6:00 in the evening~~

Mar 31 At work near tunnel returned
to 6 in company with Burkhardt in the
rain

Apr 1 Rain in the night - Morning cold
at work at the tunnel

Sunday Apr 2^d Sick with a cold wrote
to H. Monday at work at the Lumber
returned to C at night

Tuesday 4 In the morning cloudy but
somewhat warm

Wednesday 5 Locating on Hood. Lark
in the ^{morning} returned to Battellbury

Thursday 6 On the abandoned work
with Burbank. at Grayson at night
in company with Boyd

Friday 7 Returned to C two letters
from Homer

Saturday 8 at C all day found two
letters from H.

Sunday 9th Allen did nothing in the
morning evening wrote to H.

Monday 10 Out on Hood Locating at
House all night. Fense Cooper commenced
this morning

Tuesday 10 On S. Hood returned to C at
night. Lag in evening

Wednesday 11 Foster came this morning

Sunday Apr 23 Took passage on
line for Pittsburg a fine day Sat 24

24 On the river boat running
slow with little prospect of reach-
ing Pitt in time for base, Passed
Blanchard's Island this
morning Arrived at Wheel-
ing in morning up in town
and purchased Lat - passed
under Wheeling Bridge but
so dark could not examine

25 A fine day Reached Pitt this
morning after the departure of
the train - Examined the sub-
sidence Bridge & Bridge St. Ob-
tained the angle of Wharf -
Monongahela fine hotel -

In the evening took car for Phil.
when arrived I found there 15
Miles when I spent the night

27 this morning took car to Phil-
ton thence to Portland when arrived
in the evening and remained all night

Apr 28 arrived at N this evening
found all well.

Sunday May 9th Left - Home this
morning, arrived in P in evening
when remained all night. Met
C.E. - R.R.S. - R.K. - W.E. - C.E.B. - and
other old acquaintances of the A Road
May 10 took the noon train for
Boston when arrived at night and
took lodgings at the W.S. ~~Hotel~~

May 11 Took Passage via Worcester
Springfield Albany Buffalo, C.E.B.
Road to Cin when we arrived at
12 o'clock ^{PM} May 12 and put up at
The Broadway

May 13 Met - Mr C. who came
down this morning - took passage
on Cin. for home when we arrived
Sunday morning 6 o'clock

Monday May 14 At work in
the afternoon on the City House at Night

Monday 22 Went out to
L.C. 5, 4 Sir. Return Tuesday
Evening

Nov 26 - Snow last night and
much. Chilly morning with
indications of rain

Monday Ev Oct 3

Left for home at Ironton
at night. Met Morton there he
having escaped after shooting an
Irishman. Rain at night 1.70 P.M.

Tuesday morning in company with
Mr Muttet left in the Major Graham
for P where we arrived about 3 P.M.
No boat there decided to take stage
at 3 o'clock in the morning for Co-
lumbus. the party deciding to
wait the arrival of a boat.

Wednesday Oct 4 Left Pat 4.
am. in stage for columbus from
the road we reached 6 without
accident about 11 P.M. dist 89 M.
Tue 5 - at 11 Left in car for
Cleveland having purchased
a through ticket for Boston fare 16.95
arrived in Cleveland about 6 am.

Thursday Oct 5

Left Cleveland, arrived in

Albany at 6 A.M. baggage Boston
Had left were compelled to wait
until the 9 o'clock train did not
Reach Boston until 6 P.M.: cars
and boats for east had left ~~for~~
remained at A.B. Hotel all night.
Saturday 7 Took cars this morn-
ing and reached home in the
evening

4.
Saturday Oct-21
Left Newcastle in company
with H. (at noon) for Ipswich
when we arrived at 8:45 P.M.
found Mrs. family well -
Sunday 22 Attended church in
company with the family, in the
afternoon called on the Mayor's
family

Monday Oct 23

Left in company with Mr. - left him in Boston to go on to N.Y. in the evening train: arrived at Springfield at 8.45 and took lodgings at the American House

Tuesday 23 In Morning took car for Buffalo where remained all night

Wednesday 24 left B for Cin in when arrived about 12 at night put up at Broadway House

Thursday 25 There not being any boats up river took passage at 3 P.M. in company with Mr. Stiles of Frankfurt for Chittanooga. at Manchester took train to Hillsboro and remained all night

Friday 26 Took car again at 7.30 A.M. for C. where we

arrived about 3 P.M. and
learned the train for Portsmouth
had been gone about 5 minutes.
Saturday 27 Took stage this
evening at 2 1/2 for Portsmouth
when we arrived about 11.
Much pleased with this
fine city, Clinton House &
No. 1, Made the acquaint-
ance of Rev. Mr. Mills
a singular genius for a
parson.

Sunday 28 Found the
Bryce House much im-
proved since its change of
name and landlord, took
passage on W.S. Rice at
12 o'clock for Sandy where
we arrived about 3 A.M.

Monday 29 Found all well
in the morning down
at Ashland, much im-
proved

Sunday Nov 26/54 Snow fell
last night - one inch. cool through
the day snow melting gradually
Monday - cold all day freezing
in the evening

Sunday 28 Thermometer
at 0+18 at Luncheon

Monday Dec 4th Snow last night
cold through the day: in the
Office Examining Parties

Tuesday 5 Luncheon Therm 0+15, Out
in the Sun Dined at John's home
at night - 9 o'clock PM 0+18

Wednesday 6 - Luncheon 0+18
at 7 o'clock PM 0+34 - In the
office in the morning. Evening
at Ashland to meet Mr Weir
not then home at night

Thursday 7 In the office all
day Drafting Bridge Plans

Friday 8 Luncheon Therm 0+6 Clear
Out on Shop & Passes Home at night

Saturday Dec 9th At Linn 0+18

at work on Snag Model in office all day - Warm with indications of rain

Sunday 10 In the office, wrote to H. Commenced raining in the afternoon - quite warm

Monday 11 at Ashland in the morning some snow fell in the night - but the day fine - at work in model in the evening -

Tuesday 12 At Linn 0+20 Locating Cur into Ashland - Warm

Wednesday 13 0+22 - Located up to near the Savage House -

Thursday 14 0+32 Warm with indications of rain - Out at Melts to mill - fine day, at night at Mr M'Comacks

batts. 1 Ky

Monday Feb 25/55 - at Linn - use thermometer 0+5 coldest morning this season

2nd Linn

0+4 27 ~~0+8~~ 0+8

Cattletown By
Saturday Mar 24 1855
2 o'clock Thermometer at 0+26
and snowing - Evening -

25th Last night - cold water
freezing in my wash bowl -
Mr M. came down from Brady
Bridg, from the iron works -

Mar 28 Thur 0+29 ground
sprinkled with snow and frozen

Mar 29 - This morning the thermometer
at 0+20 - Left 6 on Brown for Cin.
arrived at, Ironton several hours
to take on iron also at the Rock
did not reach Germantown un-
til dark

Friday 30 Reached Cin this
morning at 8^{1/2} took the 9 o'clock
train reached Cleveland at
dark when we supped

Sat 31 At Buffalo this morn-
ing, arrived at Albany at 5 o'clock PM
no express, so took night train for
Springfield arrived at 3 o'clock A.M.

26 Sunday Apr. 1 Remained in
Springfield all day, walked over the
city. Mallacott fine house. Rain in
morning, evening blowing hard. At 11 1/2
o'clock P.M. in company with Mr
Fox took mail train for Boston. ar-
rived at 3 A.M.

Monday I took car at 7 1/2 A.M.
for home, arrived at 8 o'clock. All found
all well - No snow on the ground
but cold and windy.

Wednesday April 18th Left home
this morning for Portland where
arrived in the evening.

Thursday 19 In P all day.
Friday 20 Left Portland for
Boston in the 10 o'clock train.
My baggage not being in read-
iness could not leave in the 5 1/2
train - Put up at the U.S. Hotel.
Raining all day and part of the
night.

Saturday Apr 21 This morn-
ing over town to hunt up friend
Calice in H. Adams - Took the
2 1/2 train for Dubuque when arrived
in the evening found all well

Sunday 21 This morning in
company with Uncle went down
to the village ~~street~~ took dinner
with Mr. Nathan Soule passed the
time pleasantly, in the afternoon
returned to Uncle and in company
with Aunt visited Martha when
we passed an hour pleasantly

Monday 23 Left D for Boston
this morning, about the city
until 5 1/2, in the mean time
visiting the Athenaeum, when
took cars for N Y via Stonington
arrived in N Y 10 o'clock to take
the morning train for Dublin
arrived in Cin. on Wednesday
Evening and on ~~the~~ Thursday
morning took passage

Apr 27

on the Key-Stone State for Cat-
lettobury, where arrived on Friday
Morning Apr. 27 found all
well—

Ashland May 10th 1855

This Morning left Cattitobury
on the Boon with all my plan-
der for Ashland. Commenced
boarding at the "Iron" House
at noon. Took possession
of the new office—

Burbank in and
informed of Gundon's tools being
attached, went out and gave
my name as security

Saturday May 12 1855—

Last night up at 6—
Spent the night with Mr Martin
This morning returned again
Evening commenced making draw-
ing of Mr Mead's House

Sunday May 20th 1854
 The evening in company
 with Mr Westcott and Mr.
 Mitchell left Ashland for Cin
 on Steam Ferry. to examine
 case. On way down Mr Apperson
 who was on board with his wife
 an idiot. Lany lost the girl
 I am she probably having left
 the boat at Portsmouth -

Arrived at Cin. Monday
 morning made the examina-
 tions and then visited the me-
 chanics Inst. much pleased
 but so fatigued as not to en-
 joy the rest. evening attended
 the theatre -

Tuesday 21 This
 morning Mr A & W. left for Low-
 ville and Mitchell for Mt Sterling -
 At noon took the Ferry again
 for home. A fight on board the
 Landians badly cut & bruised

53?
1-4
Wednesday May 23/55

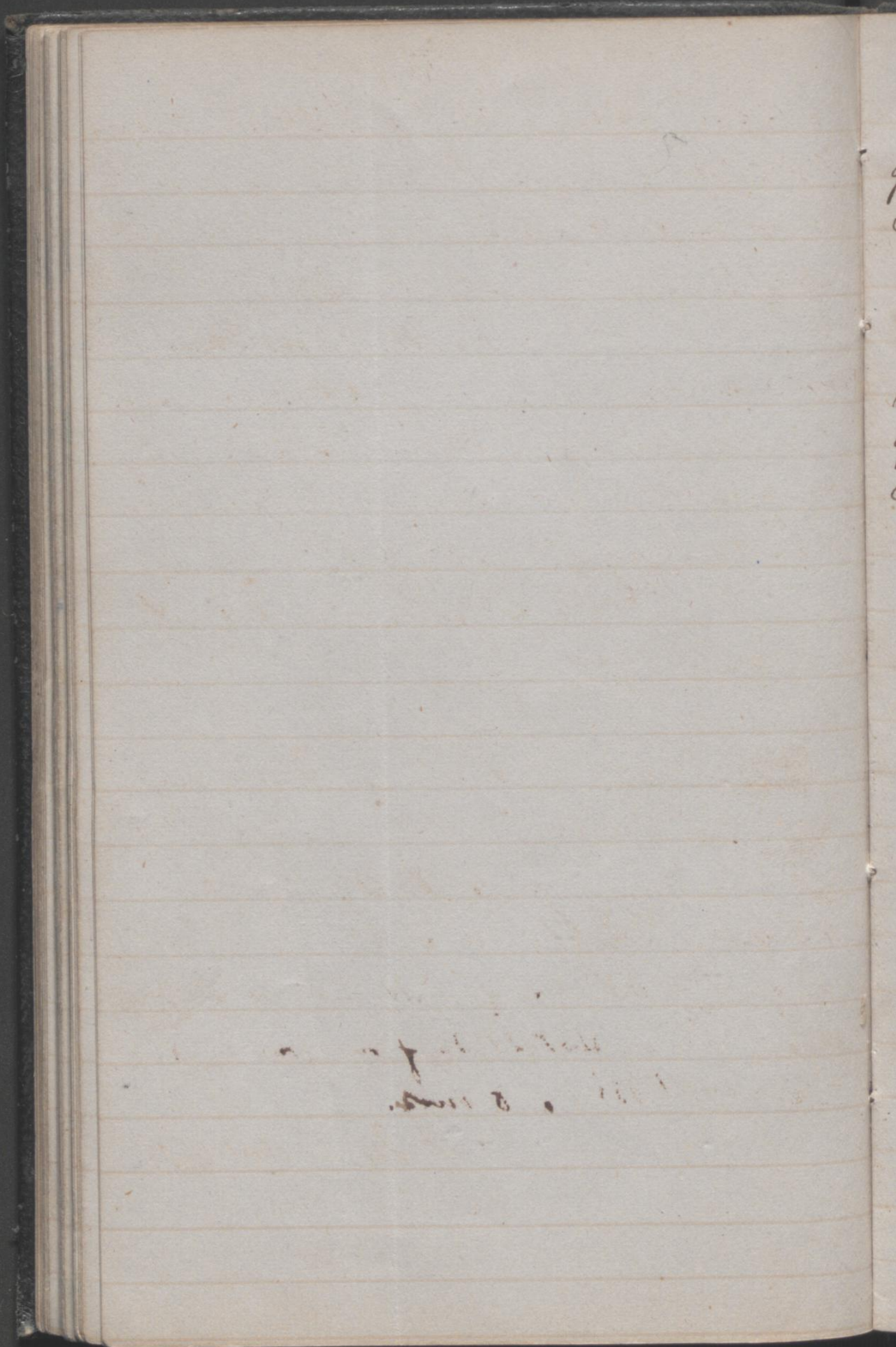
This morning arrived
safely at Ashland on the
Perm. Last night a storm
with heavy thunder & wind

Monday Oct-8-55

Left Ashland this morning
on steamer Kinton en route
for home: having a large lot
of more to take on board at
Montm & Hanging Rock did
not get under way until
late in the evening: The night
very foggy land by until morn-
ing - I found Rock

Tuesday 9th This morn-
ing so soon as the fog

Blank Page(s)



\$150.00 Ashland May 30th '55, Recd.
of W. J. Norton one Hundred and fifty
Dolls in full for services on S & N M N
upto the first of Jan. 1855—

F. M. Burbank

\$150.00 Ashland May 31st '55. Recd.
of W. J. Norton one Hundred and fifty
Dolls. in full for services on S & N M N
upto January 1st 1855—

A. H. Burbank

\$62.50 Ashland May 30. '55
Recd of W. J. Norton Lxty two
Dolls and 50/100 in full for
services on S & N M N upto Feby
1855—

A. H. Burbank

\$500.00 Ashland Sept '55

Recd of W. J. Norton five Hundred in full
for services on S & N M N. from Jan 1st 1855—
to Sept 1st 1855, 8 mos.

F. M. Burbank

\$437.50 Ashland Sept 21 1855

Rec'd of M. J. Hutton four Hundred & thirty seven Dollars & 50/100 in full for services on S & M R R up to Sept 1st 1855
7 months
A. H. Burbank

\$320.00 Ashland Sept 21 1855

Rec'd of M. J. Hutton three Hundred & twenty Dollars in full for services on S & M R R. up to Sept 1st 55, 8 mths.

W. B. Mitchell

\$360.00 Ashland Sept 21 1855

~~Rec'd of M. J. Hutton three Hundred and sixty Dollars in full for services on S & M R R from Dec 1st 54 to Sept 1st 55, 9 mths.~~

~~J. B. Hutton~~

\$200.00 Ashland Sept 21 1855

Rec'd of M. J. Hutton two Hundred Dollars in full for services on S & M R R from Jan 1st 55 to Sept 1st 55, 8 mths.

W. B. Mitchell

\$130.52

Ashland Sept 21 1855

Recd of Mr. W. H. Norton one Hundred and
thirty Dollars and 52/100 in full for services
on S. M. R. R. up to July 20, '55 G. W. Eveman
By A. H. Burbank

58.10

Ashland Sept 21 1855

Recd of Mr. W. H. Norton fifty eight Dollars
and 10/100 in full for services on S. M. R.
R. up to Sept 1st '55 J. D. Wilcox
By A. H. Burbank

\$280.00 Ashland Sept 21 '55

Recd of Mr. W. H. Norton two Hundred
and eighty Dollars in full for ser-
vices on S. M. R. R. from Dec 1/54
to July 1/55 J. S. Pittman
By A. H. Burbank

\$130.50/100 Ashland Sept 21st

Recd of Mr. W. H. Norton one
Hundred and thirty Dollars in full
for services on S. M. R. R. up to date
G. W. Eveman
By A. H. Burbank

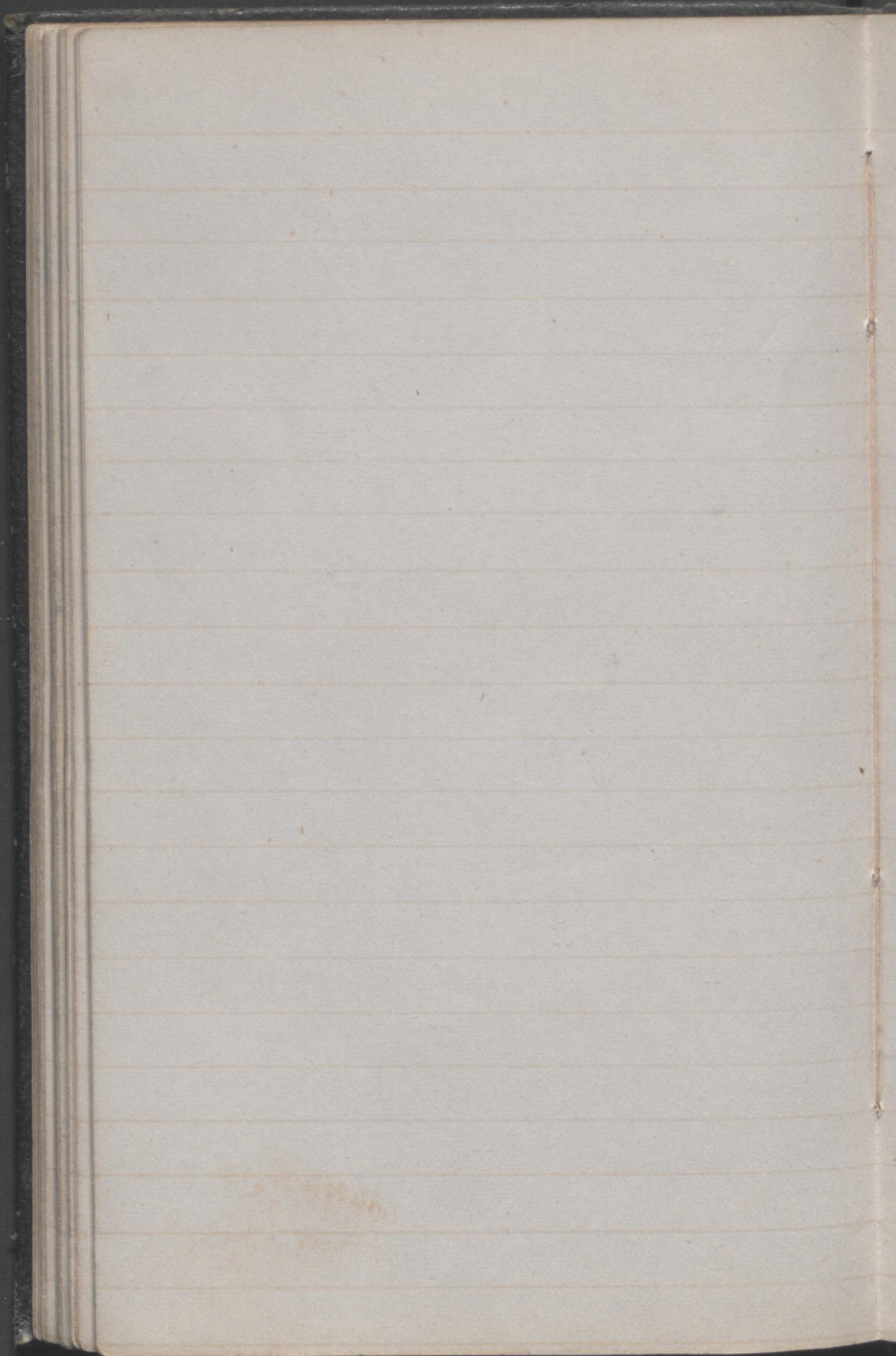
Ashland June 20/56
\$250.00

Receipt of W. J. Hilton two
Hundred and fifty Dollars in full
for services on S. & M. N. up to Jan-
1st 1856 (four months) Franklin M. Burbank.

6

two
feet
can-
hull

10



Board at Runn's from July 1st
to Oct 8th 99 exp = 14 1/2 weeks \$42.43

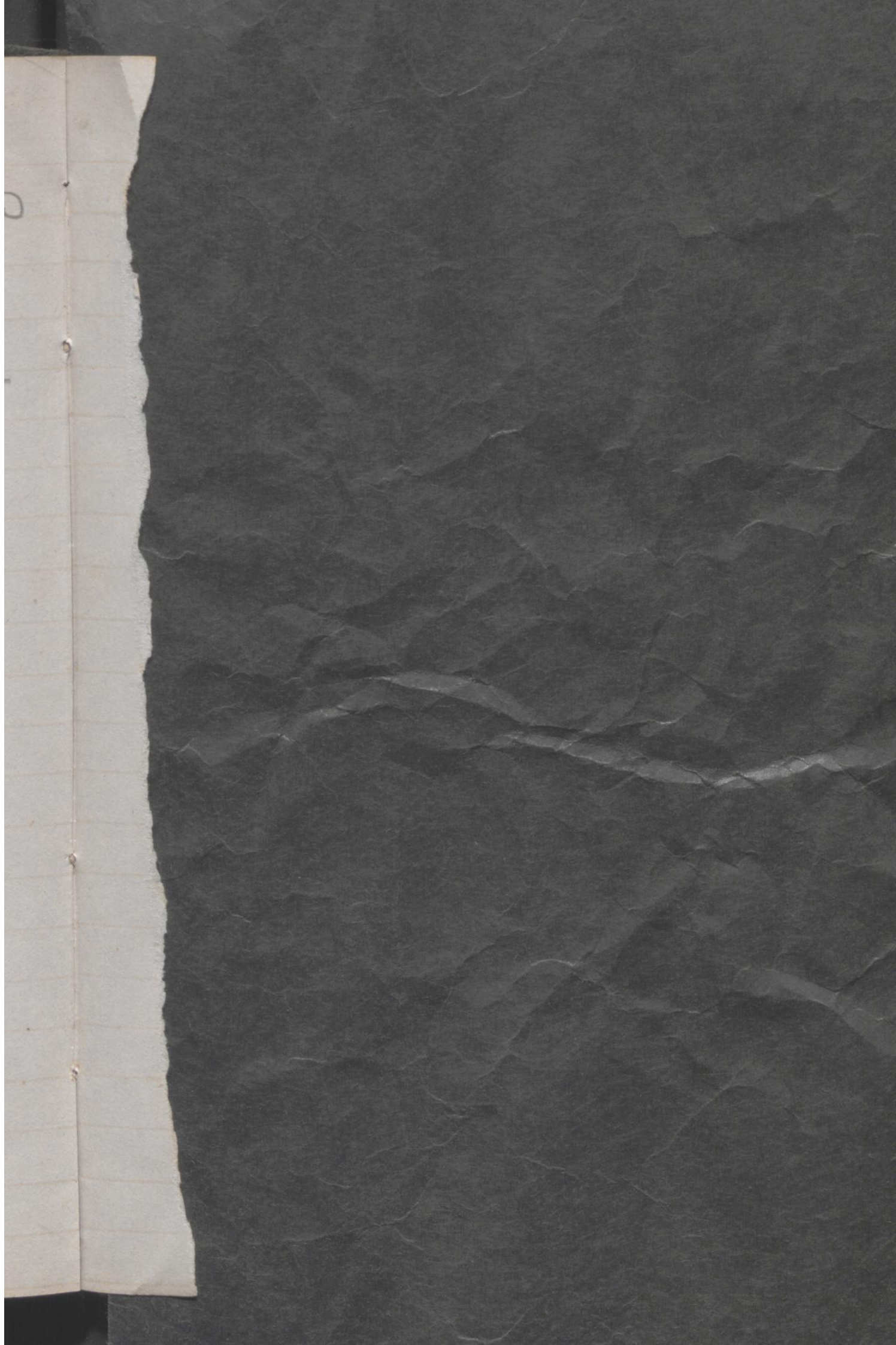
To Pain Loro	\$	50
cash		5.00
do		5.00
do		26.00
		\$36.50

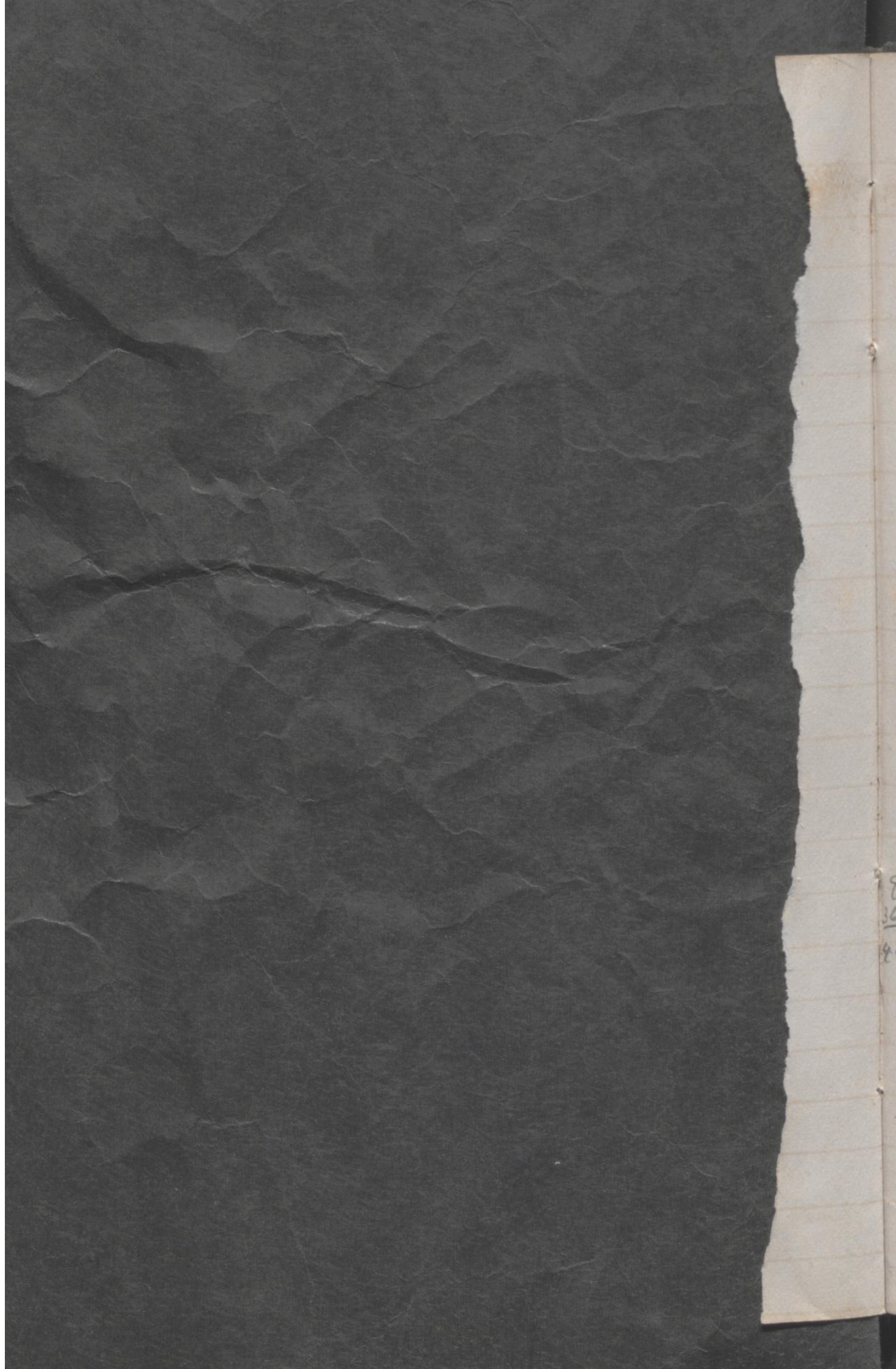
Supper Furnished by
Moon for Boyd at Ashland
Oct-27-55

Merchandise 248

Refuse

54
299





3 1/3
 10 50
 82

Measurements of Kuyby's Cellar
 Aug 28th 1855

20.8 x 51 x $\frac{4.0+1}{2}$ Excavation

Masonry

98.22 Yds

$\left\{ \begin{array}{l} 70 \times 1 \times 4.75 \\ 140 \times 1.5 \times 1.5 \end{array} \right\} - 4.5 \times 3 \times \dots = 38.4 \text{ Priches}$

9.75 x 1.25 + 3.75

1.25
 48 75
 19 50
97 5

12.1875

3.75

609375

853125

365625

45.703.125 1.5) 45.7 (3.0
45
 0

1728) 2688 (1.5
1728
 9600
8640
 00

Amto paid for construction	
of House at Ashland also Sand &c	
Digging Men	18.00
Drill	4.25
Wells	3.87
Iron	2.00
Clearing ground by digging	9.00
Grates	5.00
Brackets	2.00
Paid Bums for Grading	2.00
Paid for Stone	
" " Horrocks	
" " Pump	
" " Hooke	.75
Funnel	.15
Grates	12.00

Pat. Burns work July 31 1
" " " " Aug 1 1/2
" " " " Aug 2 1/2

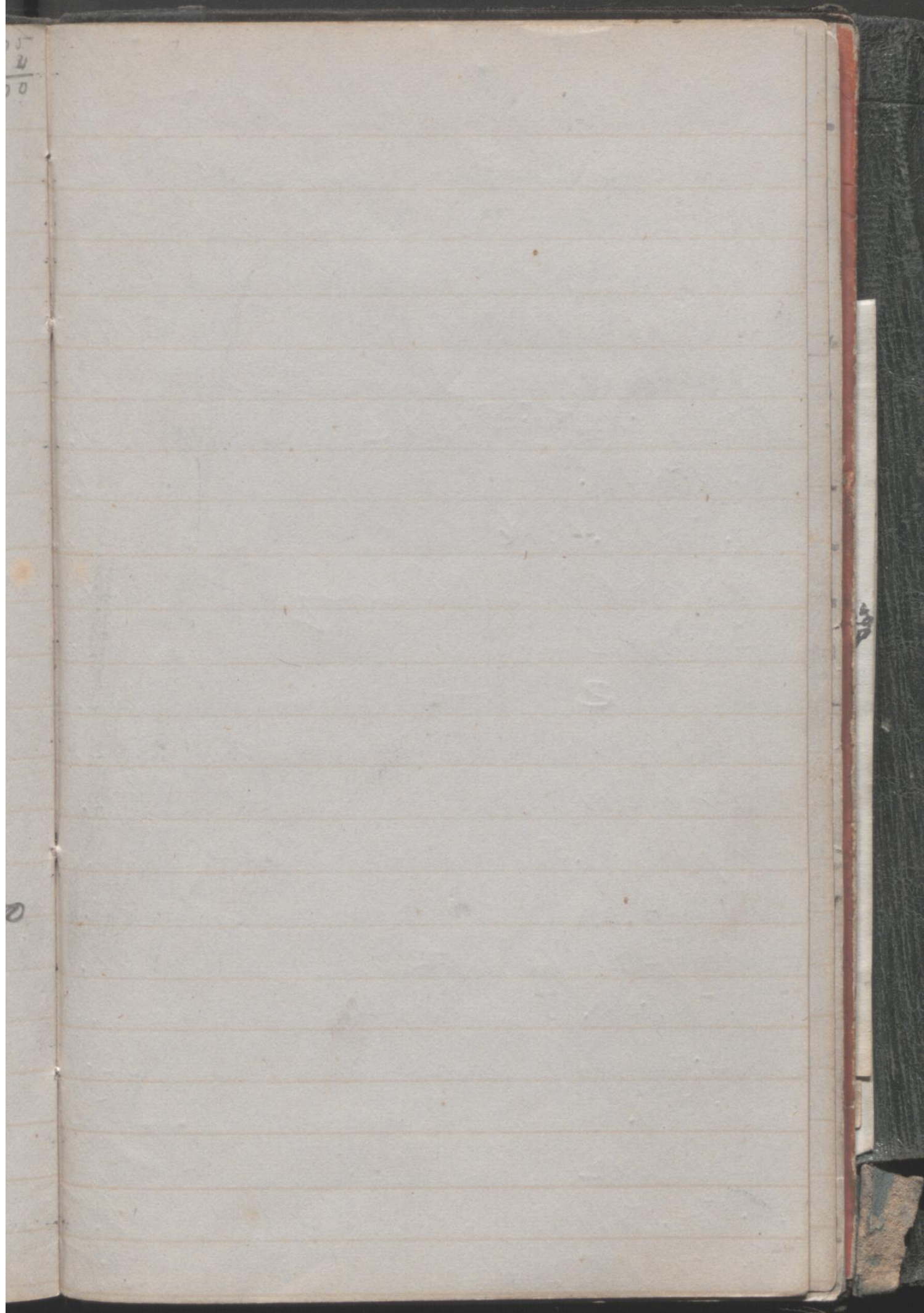
375
1500

Amt. paid for Cistern

Digging	8.00
Hoop	1.00
Bricks	15.00
Maen's Labor	
Cement	9.00
Gravel	
Plastering	

Amt paid for Stable
 furniture for Summer

Living	" "
Summer in Stable	10.00
Nails	
Hinges	
Shingles	



Measurements of Kuyuk Mearns Cellar, July 25/1885

Cellar

69	x 7 x 1	Side & End walls	483
21	x 5 x 1	End Wall	105
90	x 2 x 1	Foundation	180
Stairs	5.4 x $\frac{.45 * 5.25}{2}$ x 1 x 2		30.8
	5.75 x 1 x .75		4.3
	4.5 x 1 x .83 x 6		22.4
	4 x 6 x 1	Chimney	24.0
	26 x 1 x 2		52.0
	26 x 1 x B	Stair Room	52.0
	146 x 2 x 1	outside walls	292.0
	146 x 2 x 1		292.0
	69 x 1 x 1.5	Middle walls	103.5
	31 x 2 x 1		62.0
	31 x 2 x 1	Portico	62.0
	7.5 x 1.2 x .83	Door sill	7.5
	32.7 x 1 x 1	Cap	32.7
	6.5 x 1 x 8	Door sill	5.2
	2 x 1 x 2 x 2	Block	8.0
	1.5 x 1.5 x 1 x 3	do	6.75
	1.75 x 1 x 2 x 2	do	7.00

Survey of Shupens furnished on
Horn Bank by Grinnell
July 14/54

272 Good 62 Bad

Measurement of the Grinnell
Stone work in cedar

$116 \times 6.3 \times 1 + 18 \times 1 \times 1 = 18$

45.8 Perches } = 73 0.8

Front & Front Incl. Cul = $35 + 19.4 \times 1 \times 1 = 54.4$

11 21 40 x 1 x 1 40.0

Back Ina 17x1x2 34.0

Cross Hales " 30 x 141 30.0

Collar 485 x 1 x 74 358.90

Stans Riens $4.5 \times \frac{4.00 + 8}{2} \times 1 \times 2 = \cancel{45}$

Sluffs Cont- $3.8 \times .75 \times 1 \times 6 = 15.1$

Block 141x142 2.0

~~C.A. 5~~ 54.4

54.4

15.1

4.6

Burch

74.1

4.49 cont-

660

81

-5-

4

0

2

Q

0

C

2

2

7

0

~~65~~

6

D

Dr Morris Cellar Lin 30/58-

Front & Front End Cut - $35 + 19.4 \times 1 \times 1 = 54.4$

" " Rough $5 \times 1 \times 1 = 5.0$

" End " $13.7 \times 1 \times 1 = 13.7$

" " $40 \times 1 \times 1 = 40.0$

Back End " $17 \times 1 \times 2 = 34.0$

Cross Walls " $30 \times 1 \times 1 = 30.0$

Back End " $40 \times 1 \times 1 = 40.0$

Front of L " $25 \times 1 \times 1 = 25.0$

Back L " $27 \times 1 \times 1 = 27.0$

" End L " $16.7 \times 1 \times 1 = 16.7$

Cellar $48.5 \times 1 \times 74 = 358.90$

Stairs Riser $4.5 \times \frac{4.00 + 8}{2} \times 1 \times 2 = 54.5$

Steps Cut $3.8 \times .75 \times 1 \times 6 = 15.1$

Cap Cut $4.6 \times 1 \times 1 = 4.6$

Block P Rough $141 \times 1 \times 2 = 282$

~~Cut~~ 54.4

~~54.4~~

~~4.6~~

~~5.6~~

~~6.4~~

~~6.5~~

15.1

4.6

74.1

660

810

660

1000

1000

1000

1000

Burch

4.49

Cut

Sailing days of Steamers,

Sunday ^{Up} Cincinnati

Monday " Philadelphia

Tuesday " Pittsburg

Wednesday " Pennsylvania

Thursday " Buckeye State

Friday " Key-Stone State *

Saturday " Allegheny

Sunday Down Pennsylvania

Monday " Buckeye State

Tuesday " Key-Stone State &

Wednesday " Allegheny

Thursday " Cincinnati

Friday " Philadelphia

Saturday " Pittsburg

&
City of Wheeling

200
50

220
19
239

Martin believe what
I tell you the spirit of
your mother is often with
you she is interested in
your future happiness as
much now as when she
was living with you on
earth & believe also what
she is now saying to you
she does ^{not} want you to put
any trust in Universal Sal-
vation as it is now preached
for it is not true it is true
Martin that the time will
come when all will be hap-
py but not at death just
as the spirit leaves the body
so it enters the spirit world
if it has made its peace
with God it will enter a
happy state of existence
on the contrary if it has
neglected to seek a prepara-

tion for death it cannot-
Enjoy the presence of God
while he in his mercy sus-
fist to redeem it he says
his mercy endureth forever
as it is he is not willing for
any to perish but for all
to come to repentance cer-
tainly a day of redemption
will come the time will come
when every knee shall bow
and every tongue shall con-
fess before his Maker ^{and acknowledge} his
mercy and his justice toward
them and all shall know him
from the least to the greatest
But it is far better to obey
the commands of God to love
and serve him while in
life than there will be no
cause to fear for all will
at death - I have much
to say to you but will leave

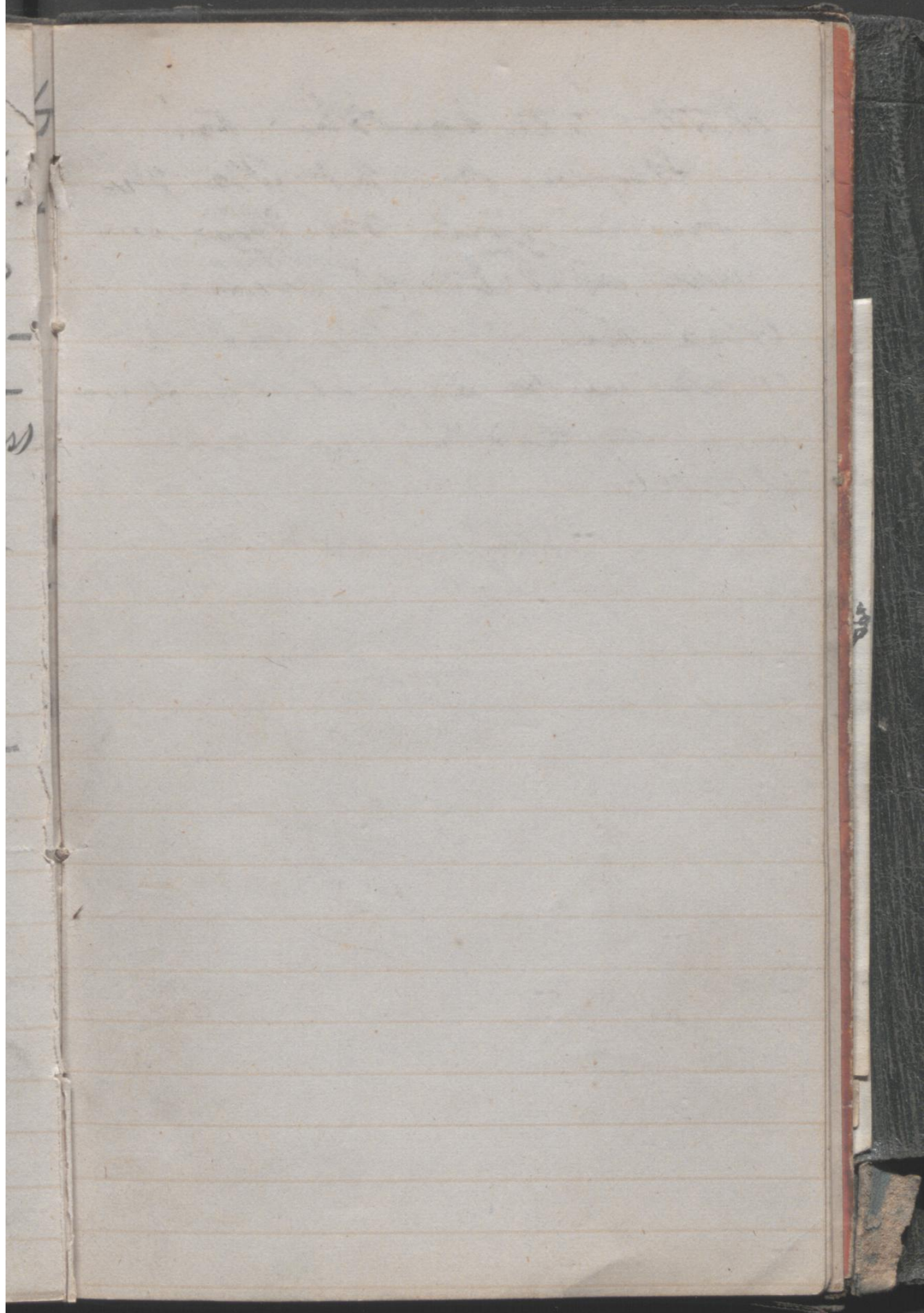
that - the another time.

Good night Mr. Thos
is from your Mother -

An S I Davis, ^{doctress} correct -?
Martin S. I. S. is not cor-
rect in many things. Swi-
denborg doctrine are nearer
right -

The above is a com-
munication from my
Mother.

A Miss Crocker
of Danvers cotton New-
bury



Work at Ashtun	
JM Burbank	50 days
Paine	6 "
Morton	11
Pruell	58
Woff	66 days 31 of which was paid by W.M. Co.
Elliot	7 days
Savage Boys	15 1/2

Length Width Thickness

Farrison Price on Means Statute

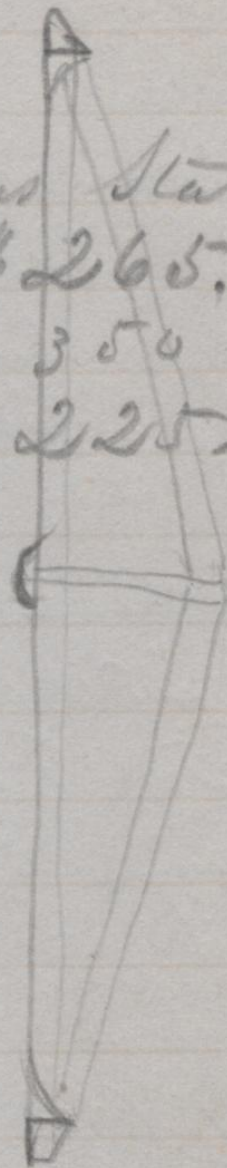
\$265.00

350.00

225.00

Brays

Means





Railroad Map
1 doz. Rubber
1 " No 3 Pencils
1 " doz. 4 50
2 50 ft Saps

For House Brick work
24258 for 9" wall
30578 " 12" "
8 inches lime

Mians Cellar 21.4 x 27.2 x
127 Cube Yds Excavation
30 Inches for Foundation

D. S. Owen

New Harmony Ia.
Care of Dunsenhet & Bros.

New Harmony Ia.

Mr Burwell, will ^{please} select
specimens, of the various
Iron Ores in his vicinity
of from $\frac{1}{2}$ to 1 lb mark
locality & designate by
common name, & sample
of the Iron which goes
Furnace is making &
forward as above, give
if possible the height of the
ore in hill with reference
to your Main coal in
the valley by the Stable

Pay Roll Mem
 Pay Roll - Mem. April 1854

Day	Amount	Month	Sum
May 3 rd	10.25	April	
May 7 th	10.25	May	\$25
J. H. Page on pay roll	2.50		
F. Cooper on pay roll	2.00		
Arman on pay roll	3.00		
Arman on June pay roll	2.00		

Eorman's name on Pay Roll
 up to the first of March -
 Eorman came on again 13 June = \$14.17

Nileof came on 17 May 1855
 for May \$12.50. Left 15th June
 for June 12.50 making \$24.50 total

July

^{Jan}
\$19 \$18.26

Haskell's Bill

19.75

u.

14.17

total

Buckeye State	Seaside	Pitt.	Sund.	Cin.	Wed.
Repton	"	"	"	Mon.	" Thurs.
Sturgheny	"	"	"	Tues.	" Frid.
Cin.	"	"	"	Wednes.	Sat.
Bulliant	"	"	"	Thurs.	Sund
Pitt.	Wed	"	"	Friday	Mon
Messenger	"	"	"	Sat	Tues

Evman came on June 13/55
 Wilcox Substitute for Pittman from
 June 15th to July 18

Evman Left July 21, 1855
 Wilcox Commenced July 23

\$50
 77 67
 127.67

Lanahan

\$20
 98
 100
 298
 345.67

Jamison

The Directors of the S & B. S. R. R.
met on Friday after the 2nd Monday, each Mo.

John W. Henry has sub g & 10
of the third div. -

Standard measure for Coal in Penn^a
2688 C. inches = Winchester Bushel 1.555^{ft}
Since 15-1854 Frank vacated
Room below office

Oct 1 Cooper not returned and
Room vacated below

Lary at Fans	Decr	15 th
" " Water		14 th
" " Bandacks		20

Fancy Castings No 275 5th St
South Side near Motion Room -
See & Seaville No 15 Walnut St

Mitchell & Rannelsberg
Second St Cin

St 417 change 30 to 200 2600

80

2750

May 7

848

2750

87

3250

850

Middle

360

60

Upper

250

53

Length = 11

60.83

157

157

127

155

160

100

405

1100.0

From 100

Back 190

West 24

Prof 40

28

392

900

282

568

40

8

26

31

30

7

94

14

257 3/7

12.7
6.35
19.05

150.72

49.64

24.57

Martin Jobey Hillin
Born May 2, 1817.
nr Newcastle Maine
son of Joshua and
Abigail Bradford Hillin
Educated in Maine
was cabinet maker and
civil engineer.
married Henrietta Kye
nr 1842.

Leeds May 6 - 1898

Mary Henrietta Born	1843
Chas E	1845
Abbe Keene	1850

Loose Item(s)

W L W

Printer

Edward Carder

Loose Item(s)

3 In speaking of old Ashland it is necessary to go back to the earlier settlements and villages on the same site. The first settlement here was known as Poage's Landing. In 1799, anticipating the grant which they were to receive from the Commonwealth of Kentucky, the Poage's, Gen. John and his son George, and their families, moved from Virginia and settled at what was later known as Ashland. July 28, 1800 a patent for 2300 acres of land designated as the third bottom above the Scioto was issued to the Poage's by Gov. Garrard, in the 9th year of the Commonwealth. This was not the first time this land had been granted but the previous grantees had failed to settle on the land therefore their claims were void. All of these previous grants, many made by the state of Virginia prior to the formation of Kentucky in 1791(?), overlapped each other and were for enormous acreages - W. Grayson, 80,000 acres; J.D. Orr, 20,500 acres; John May, 22,944 acres; and a dozen or more grants ranging from 5,000 to 1,000 acres. The Poages immediately cleared parts of their land and planted crops, built homes and because of their industry were declared the rightful owners of the land at a later date when it was brought to court. 1

Loose Item(s)

② In 1818 the first industry came to this region. The Argolite charcoal iron furnace was built in this year (1818) at Argolite, Greenup county. The successful operation of this furnace for twenty years ~~and~~, the ~~plentiful~~/deposits of iron ore in the hills, and the large tracts of timber available for fuel led to the building of fifty or more of these furnaces in Greenup county and southern Ohio. This district became known as the Hanging Rock District and was famous in its time for quality and quantity of production. Many of the managers of the se furnaces were from Pennsylvania and helped to swell the population of the small community, ~~now known as~~ which ~~has~~ had become known as Beechgrove. These furnaces proved to be the backbone industry ~~as they to build and operate through the civil war~~ of the region and although rendered obsolete by better methods of production and the rapidly dwindeling timber supply ~~are the~~ forerunners of the modern iron and steel industry in Ashland. *were* ②

Loose Item(s)

③ The Elizabethtown, Lexington, and Big Sandy Railroad was incorporated in 1851. This railroad was intended to pass up the big Sandy valley into Tennessee and serve as a link with the south. The original line surveyed did not enter Ashland but passed back of the hills and into Catlettsburg. Realizing the advantages of having the RR enter Ashland several prominent citizens introduced a bill to the Legislature and were granted the right to incorporate as the Kentucky, Iron, Coal, and Manufacturing Company. This company bought 1500 acres of land at 50.¢ per acre and had their engineer, M.T. Hilton lay out a town. The railroad was presented with the right of way into Ashland and accepted it. In Mr. Hilton's journal is the following mention of this change of route; "Monday, January 23, 1854, - This morning left town (Catlettsburg) for the purpose of making a reconnaissance of a line approaching the Ohio some five miles below town (Catlettsburg). Much pleased with the site selected for a town if the location of the (rail)road is made on this route." ③

Loose Item(s)

(4) Having laid out the town, advertisements were placed in all of the newspapers along the Ohio river of an auction to be held June 14 1854. Many lots were sold and a big hotel was built, on 15 and Winchester. Ashland was jokingly known up and down the river as the big hotel town - if everyone in town had moved into the hotel it would not have been crowded. Although I have been referring to the town as Ashland it was still Poage Settlement or Beech Grove. /v Realizing that a more appropriate name must be selected Levi J. Hampton, an admirer of Henry Clays, proposed Ashland in honor of Henry Clays home in Lexington. This proposal was accepted and for the first time we can rightly call this village Ashland. In 1858 by an act of the Legislature Ashland was incorporated as a town and a board of trustees elected to collect taxes, etc..

Loose Item(s)

(5)

In February 1860, Boyd County was incorporated from parts of Greenup, Carter and Lawrence counties and ~~the~~ Catlettsburg, the largest city in the new county, made the county seat. The first term of the Boyd county court was held at Ben Burks residence and plans discussed for the courthouse and jail. The jail was a crude but strong affair. The specifications called for a rectangular building with double log walls twelve inches thick. The space between these walls to be filled with rocks, cement, etc.. It was to be two stories in highth with a twelve inch ceiling. The windows were to be small with one inch iron bars set into the logs.

An early session of the court regulated the charges to be made at taverns in the county.

Breakfast, dinner and supper - 25 cents each.

Lodging - 15 cents per night/

Horse feed - 15 cents

Pasturage - 12 hours - 10 cents.

Whisky, gin, brandy, wine, and rum - 5 cents per glass. (5)

Loose Item(s)

⑥

The civil war threw most of the industrial concerns into bankruptcy. An encampment of union troops made central park their headquarters and although there was no actual fighting in this region the Aldine Hotel was used as a hospital by the government.

The sending and receiving of mail was still a haphazard proceeding in spite of the railroad. The greater part of the transportation was by water and therefore irregular. The mail was brought by horseback from Maysville twice each week and if one put a letter on a boat early in the week he might receive an answer from Maysville by horse six days later.

Ashland boasted a public school - a two room ~~affair~~ frame building where Watson's Hardware store now stands. There was also a subscription school at Beech Grove - the site of the Bayless school ~~now~~.

Ashland has always been noted for its rapid growth - the population in 1856, two years after it was incorporated as a town, was 500. ~~It~~ Ten years later, 1866, the population had grown to 800. In 1870 it was 1459. ⑥

Loose Item(s)

⑦

The first professional theatrical performance was held in August 1870. The performers were required to pay the city \$10 the first night and \$5 for each succeeding night. Another city ordinance of interest was a fine of \$2 for hitching horses or mules to shade trees within the city limits.

Between 1870 and 1880 the town began to take on a more civilized air. Board side walks were built along all of the principal streets and the streets were graded. Along Carter avenue there were a series of small lakes which had been used in the winter time for skating but these were ordered to be filled as they were a menace to health as well as inconvenient in the center of the street. A wharf was built, the riverbank graded, and a wharfmaster appointed. A scale of charges were drawn up for the packets and barges stopping for freight or passengers. Captain E. Talbott was the first ferryboat and paid the town \$10 per year for the privilege.

⑦

Loose Item(s)

⑧ 1876 proved to be a red letter day in Ashland, for it ceased to be a town and became a city with a mayor, council and all of the other priviledges due a city. H°B°Broaddress was the first mayor.

The turnpike to Catlettsburg was built with two toll gates. The gate on the Ashland end was located at 26th and Winchester avenue. ^{23rd} the A man on horsegack was charged 5 cents, a horse and buggy - 10 cents, and 15 cents for a team and wagon.

With the building of the Norton Iron Works, The Ashland Furnace, The Ashland Firebrick Plant, The A.C.&I. Shops, The Poage Milling Company, The furniture factory on 29th street, and other smaller industries Ashland has taken on the looks of a city. There are many two and even three story buildings on Greenup Avenue and even Winchester avenue has begun its change from a residence district to a business street. With the development of the coal, oil, and gas fields up sandy the various products were brought to Ashland for distribution. The Bank of Ashland which began its long career in 1856 and became the Ashland National Bank in 1876 being the largest and most progressive bank in this part of the state profited by the increasing industries. ⑧

Loose Item(s)

Holliday, R.C.

Walking-Steel Papers
Broome Street Straws

Published by Doran

1873 - Cleveland Panic

Steel works cont'd to oper. during
depression. Retaring prop. in 1898-

1898-90 Mc Kin. elected - things picking

1893-95 - 5 yr. period of depression
Street paving -

1907 - Panic -

1912 - steel business down -

1914 - stock m. closed, steel camp -

Loose Item(s)

⑨ between 6 and 29th streets furnished local
Mule drawn street cars/~~were a feature of~~ transportation and there
were local trains run between Ashland and Catlettsburg every few hour
Ashland was spared from the disasterous fires and floods which
visited Catlettaburg - perhaps the most disasterous fire being one
which wiped out almost a city block between 13 and 14 on winchester
The 1913 flood failed to reach the height of the flood in 1884 by
two in ches and although causing considerable damage not to be com-
pared with with the loss of property suffered by towns with lower
banks than Ashland.

Thus in 1900 we find Ashland a flourishing city of population
with paved streets and many improvenents, and a record of develpment
to be envied. In a period of less than fifty years Ashland had become
the largest and most modern city in the eastern sectionof the state.

1910 pop 8688

⑨

Loose Item(s)

"Old Ashland"

Erster - Kämpfer -



