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REGISTER OF RURAL AFFAIRS  
AND  
CULTIVATOR ALMANAC

FOR THE YEAR 1871,

CONTAINING

PRACTICAL SUGGESTIONS FOR THE FARMER  
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**With about 130 Engravings.**

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BY J. J. THOMAS,

AUTHOR OF THE 'AMERICAN FRUIT CULTURIST,' AND 'FARM IMPLEMENTS,'  
ASSOCIATE EDITOR OF THE 'CULTIVATOR & COUNTRY GENTLEMAN.'

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ALBANY, N. Y.:

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BY JOHN J. THOMAS.

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THE  
**CULTIVATOR ALMANAC**  
 FOR 1871.

ASTRONOMICAL CALCULATIONS IN EQUAL OR CLOCK TIME.

**ECLIPSES FOR THE YEAR 1871.**

**T**HERE WILL BE FOUR ECLIPSES THIS YEAR, as follow :

I. A Partial Eclipse of the Moon January 6th, in the evening ; visible in the eastern part of the United States, and east of Alabama and Minnesota, the Moon rising more or less eclipsed. The middle of the eclipse will be visible in the northeastern part of the United States. Size there, 8.316 digits on the southern limb.

II. An Annular Eclipse of the Sun June 17th ; invisible in America.

III. A Partial Eclipse of the Moon July 2, in the morning ; visible in California and Oregon. The eclipse begins at San Francisco, California, and in Portland, Oregon, at 4h. 16m. in the morning ; and the moon sets eclipsed in part in the Pacific States.

IV. A Total Eclipse of the Sun December 11 ; invisible in America.

**THE FOUR SEASONS.**

	D.	H.	M.		D.	H.	M.
Winter begins, 1870, December 21,	7		5 eve.,	and lasts	89	1	17
Spring do. 1871, March 20,	8		12 eve.,	do.	92	20	22
Summer do. 1871, June 21,	4		34 eve.,	do.	93	14	14
Autumn do. 1871, September 23,	6		48 mo.,	do.	89	18	3
Winter do. 1871, December 22,	0		51 mo.	Trop. year, 365	5	46	

**CYCLES OF TIME AND CHURCH DAYS.**

Dominical Letter,.....	A	Septuagesima Sund., Feb. 5	Easter Sunday, ... April 9
Epact, .....	9	Sexagesima do. Feb. 12	Low Sunday,..... April 16
Solar Cycle, .....	4	Quinquagesima do. Feb. 19	Rogation Sunday, May 14
Golden Number,.....	10	Ash Wednesday,.... Feb. 22	Ascension Day, ... May 18
Roman Indiction,.....	14	Quadragesima Sund., Feb. 26	Pentecost Day,.... May 28
Jewish Lunar Cycle, ..	7	Mid-Lent Sunday, .. Mar. 19	Trinity Sunday, ... June 4
Dionysian Period, ....	200	Palm Sunday,..... April 2	Corpus Christi,.... June 8
Julian Period,.... ....	6585	Good Friday,..... April 7	Advent Sunday,.... Dec. 3

## MORNING AND EVENING STARS.

**MORNING STARS.**—Venus from September 26 to end of the year. Mars no tthis year. Jupiter from June 30 to October 22. Saturn until March 30.

**EVENING STARS.**—Venus until September 26. Mars all the year. Jupiter until June 30, and after October 22. Saturn from March 30 to end of the year.

---

## PLANETARY NOTES.

**MERCURY** will be brightest February 13, June 13 and October 6, rising before the Sun ; also April 20, August 17 and December 12, setting soon after the Sun. **VENUS** August 20 and November 1, being at the latter time an early Morning Star. **MARS** March 19, rising about sunset. **JUPITER** not this year, not reaching the opposition. **SATURN** June 28, rising about sunset.

---

## APPARENT AND MEAN TIME.

Time is both *apparent* and *mean*. The sun is on the meridian at 12 o'clock on four days only in the year. It is sometimes as much as 16¼ minutes before or after twelve when its shadow strikes the noon mark on the sun-dial. This is occasioned by the irregular motion of the earth on its axis and the inclination of its poles. This is called *apparent time*. *Mean time* is determined by the *equation* of these irregularities for every day in the year, and is noted in all good almanacs. The latter is the true or correct time. When you buy an almanac, buy one that expresses on each calendar page the *mean time* when the sun reaches the meridian, or the shadow the noon-mark on the dial, and set your time-piece fast or slow, as indicated in the almanac.

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**TO ASCERTAIN THE LENGTH OF DAY AND NIGHT.**—At any time in the year, add 12 hours to the time of the sun's setting and from the sum subtract the time of rising for the *length of the day*. Subtract the time of setting from 12 hours, and to the remainder add the time of rising the next morning, for the *length of the night*. This rule is true of either apparent or mean time.

**LOCATING THE STARS.**—The German Astronomical Society has divided the work of cataloguing the stars between eleven observatories in different parts of Europe, and the Chicago Observatory in this country. This work, which has not been done since 1820, will occupy from five to eight years, every star requiring at least two observations. The portion of the heavens assigned to Prof. Safford of Chicago contains 8,000 stars, and he expects to make 20,000 observations with his magnificent telescope.

MOON'S PHASES.		BOSTON.	NEW-YORK.	WASHINGTON	SUN ON MERID.	
	D.	H. M.	H. M.	H. M.	D.	H. M. S.
FULL MOON, . . .	6	4 39 ev.	4 27 ev.	4 15 ev.	1	12 3 51
THIRD QUARTER	14	2 13 mo.	2 1 mo.	1 49 mo.	9	12 7 24
NEW MOON, . . .	20	7 48 ev.	7 36 ev.	7 24 ev.	17	12 10 22
FIRST QUARTER,	28	8 30 mo.	8 18 mo.	8 6 mo.	25	12 12 37

DAY OF MONTH.	DAY OF WEEK.	CALENDAR				CALENDAR				CALENDAR			
		For Boston, New-England, New-York State, Michigan, Wisconsin, Iowa, and Oregon.				For New-York City, Philadelphia, Connecticut, N. Jersey, Penn., Ohio, Indiana and Illinois.				For Washington, Maryl'd, Virginia, Kent'ky, Miss'ri, and California.			
		SUN RISES	SUN SETS.	MOON SETS.	H. W. BOST'N	SUN RISES	SUN SETS.	MOON SETS.	H. W. N. Y.	SUN RISES	SUN SETS.	MOON SETS.	
1	<b>A</b>	7 30	4 38	2 31	7 15	7 25	4 43	2 28	4 0	7 19	4 49	2 26	
2	<b>M</b>	7 30	4 39	3 28	8 5	7 25	4 44	3 25	4 49	7 19	4 50	3 22	
3	<b>T</b>	7 30	4 40	4 28	8 54	7 25	4 45	4 24	5 39	7 19	4 51	4 20	
4	<b>W</b>	7 30	4 41	5 26	9 42	7 25	4 46	5 21	6 28	7 19	4 52	5 16	
5	<b>T</b>	7 30	4 42	rises.	10 28	7 25	4 47	rises.	7 13	7 19	4 52	rises.	
6	<b>F</b>	7 29	4 43	4 40	11 15	7 25	4 48	4 45	7 57	7 19	4 53	4 51	
7	<b>S</b>	7 29	4 44	5 36	11 57	7 25	4 49	5 41	8 42	7 19	4 54	5 46	
8	<b>A</b>	7 29	4 45	6 38	ev. 41	7 24	4 50	6 42	9 27	7 19	4 55	6 47	
9	<b>M</b>	7 29	4 46	7 43	1 26	7 24	4 51	7 46	10 11	7 19	4 56	7 50	
10	<b>T</b>	7 29	4 47	8 49	2 10	7 24	4 52	8 51	10 52	7 19	4 57	8 54	
11	<b>W</b>	7 29	4 48	9 55	2 54	7 24	4 53	9 57	11 38	7 19	4 58	9 58	
12	<b>T</b>	7 28	4 50	11 4	3 40	7 23	4 54	11 4	ev. 26	7 18	4 59	11 4	
13	<b>F</b>	7 28	4 51	morn.	4 31	7 23	4 55	morn	1 18	7 18	5 0	morn.	
14	<b>S</b>	7 28	4 52	0 13	5 27	7 23	4 56	0 12	2 12	7 18	5 1	0 11	
15	<b>A</b>	7 27	4 53	1 24	6 27	7 22	4 57	1 22	3 13	7 18	5 2	1 20	
16	<b>M</b>	7 27	4 54	2 36	7 33	7 22	4 59	2 33	4 18	7 17	5 3	2 30	
17	<b>T</b>	7 26	4 55	3 51	8 39	7 21	5 0	3 47	5 24	7 17	5 5	3 43	
18	<b>W</b>	7 26	4 56	5 3	9 41	7 21	5 1	4 58	6 27	7 16	5 6	4 53	
19	<b>T</b>	7 25	4 58	6 12	10 41	7 21	5 2	6 7	7 25	7 16	5 7	6 1	
20	<b>F</b>	7 24	4 59	sets.	11 33	7 20	5 3	sets.	8 15	7 15	5 8	sets.	
21	<b>S</b>	7 24	5 0	5 52	morn.	7 19	5 4	5 57	9 9	7 15	5 9	6 1	
22	<b>A</b>	7 23	5 1	7 3	0 22	7 18	5 5	7 6	9 57	7 14	5 10	7 10	
23	<b>M</b>	7 22	5 3	8 11	1 11	7 17	5 7	8 13	10 38	7 14	5 11	8 16	
24	<b>T</b>	7 22	5 4	9 16	1 54	7 17	5 8	9 17	11 18	7 13	5 12	9 19	
25	<b>W</b>	7 21	5 5	10 19	2 36	7 16	5 9	10 19	morn.	7 12	5 13	10 20	
26	<b>T</b>	7 20	5 6	11 19	3 18	7 16	5 10	11 19	0 3	7 12	5 15	11 18	
27	<b>F</b>	7 19	5 8	morn.	3 59	7 15	5 11	morn.	0 46	7 11	5 16	morn.	
28	<b>S</b>	7 18	5 9	0 19	4 45	7 14	5 13	0 17	1 32	7 10	5 17	0 15	
29	<b>A</b>	7 17	5 10	1 19	5 34	7 13	5 14	1 16	2 20	7 9	5 18	1 13	
30	<b>M</b>	7 16	5 12	2 17	6 26	7 12	5 15	2 13	3 12	7 8	5 19	2 9	
31	<b>T</b>	7 15	5 13	3 15	7 21	7 12	5 16	3 10	4 6	7 8	5 20	3 6	

AGRICULTURAL MEMORANDA—Oct. 1, 1869, to Oct. 1, 1870, with references to date of the COUNTRY GENTLEMAN containing particulars:

- Agricultural Department Report for 1869—Dec. 23, 1869.
- Agricultural Exhibitions, State, County, &c., for 1870. Sept. 8.
- Alexander, A. J., Spring Station, Ky. Sale of Horses. July 7, 1870.
- Allen, R. L., New-York. Obituary. Oct. 28 and Nov. 4, 1869.
- American Dairymen's Association Annual Meeting. Jan. 20, 1870.

MOON'S PHASES.		BOSTON.		NEW-YORK.	WASHINGTON	SUN ON MERID.	
	D.	H. M.	H. M.	H. M.	H. M.	D.	H. M. S.
FULL MOON, . . .	5	9 18 mo.	9 6 mo.	8 54 mo.	8 54 mo.	1	12 13 51
THIRD QUARTER	12	10 16 mo.	10 4 mo.	9 52 mo.	9 52 mo.	9	12 14 27
NEW MOON, . . .	19	9 5 mo.	8 53 mo.	8 41 mo.	8 41 mo.	17	12 14 14
FIRST QUARTER,	27	5 54 mo.	5 42 mo.	5 30 mo.	5 30 mo.	25	12 13 17

DAY OF MONTH.	DAY OF WEEK.	CALENDAR				CALENDAR				CALENDAR			
		For Boston, New-England, New-York State, Michigan, Wisconsin, Iowa, and Oregon.				For New-York City, Philadelphia, Connecticut, N. Jersey, Penn., Ohio, Indiana and Illinois.				For Washington, Maryl'd, Virginia, Kent'ky, Miss'ri, and California.			
		SUN RISES	SUN SETS.	MOON SETS.	H. W. BOST'N	SUN RISES	SUN SETS.	MOON SETS.	H. W. N. Y.	SUN RISES	SUN SETS.	MOON SETS.	
1	W	7 14	5 14	4 12	8 17	7 11	5 18	4 7	5 1	7 7	5 21	4 2	
2	T	7 13	5 15	5 8	9 11	7 10	5 19	5 2	5 57	7 6	5 23	4 56	
3	F	7 12	5 16	6 0	10 3	7 9	5 20	5 54	6 49	7 5	5 24	5 48	
4	S	7 11	5 18	rises.	10 53	7 7	5 21	rises.	7 37	7 4	5 25	rises.	
5	A	7 10	5 19	5 31	11 38	7 6	5 22	5 34	8 20	7 3	5 26	5 39	
6	M	7 9	5 21	6 38	ev. 20	7 5	5 23	6 41	9 6	7 2	5 27	6 44	
7	T	7 8	5 22	7 47	1 4	7 4	5 25	7 49	9 50	7 1	5 28	7 51	
8	W	7 6	5 23	8 55	1 47	7 3	5 26	8 56	10 31	7 0	5 29	8 57	
9	T	7 5	5 24	10 4	2 31	7 2	5 27	10 4	11 13	6 59	5 30	10 3	
10	F	7 4	5 25	11 16	3 16	7 1	5 28	11 14	ev. 1	6 58	5 32	11 12	
11	S	7 2	5 26	morn.	4 5	7 0	5 30	morn.	1 2	6 57	5 33	morn.	
12	A	7 1	5 28	0 27	5 3	6 58	5 31	0 25	1 49	6 55	5 34	0 22	
13	M	7 0	5 29	1 38	6 7	6 57	5 32	1 35	2 53	6 54	5 35	1 30	
14	T	6 59	5 30	2 51	7 18	6 56	5 34	2 46	4 3	6 53	5 36	2 41	
15	W	6 57	5 32	3 59	8 27	6 55	5 35	3 54	5 12	6 52	5 38	3 48	
16	T	6 56	5 33	5 0	9 31	6 53	5 36	4 55	6 17	6 51	5 39	4 49	
17	F	6 54	5 35	5 53	10 28	6 52	5 37	5 48	7 12	6 49	5 40	5 43	
18	S	6 53	5 36	6 37	11 19	6 51	5 39	6 33	8 0	6 48	5 41	6 28	
19	A	6 52	5 38	sets.	morn	6 49	5 40	sets.	8 46	6 47	5 42	sets.	
20	M	6 50	5 39	6 58	0 1	6 48	5 41	6 59	9 28	6 46	5 44	7 1	
21	T	6 48	5 40	8 2	0 42	6 46	5 43	8 3	10 8	6 44	5 45	8 3	
22	W	6 47	5 42	9 4	1 22	6 45	5 44	9 4	10 43	6 43	5 46	9 4	
23	T	6 45	5 43	10 6	2 1	6 44	5 45	10 5	11 21	6 42	5 47	10 4	
24	F	6 44	5 45	11 5	2 39	6 42	5 46	11 3	morn	6 40	5 48	11 0	
25	S	6 42	5 46	morn.	3 18	6 41	5 48	morn.	0 3	6 38	5 49	11 59	
26	A	6 41	5 47	0 5	4 1	6 39	5 49	0 2	0 48	6 37	5 51	morn.	
27	M	6 39	5 49	1 3	4 49	6 38	5 50	0 59	1 37	6 36	5 52	0 55	
28	T	6 38	5 50	2 2	5 45	6 37	5 51	1 57	2 31	6 34	5 53	1 52	

Ayrshire Cattle Imported by J. L. Gibb, Nov. 25, 1869; Messrs. Sturtevant, Feb. 17, 1870; Mr. Gibb, May 5; N. S. Whitney, May 19; Walcott & Campbell, June 2; by James H. Morgan, June 9 and 16; J. J. C. Abbott, July 14; Messrs. Dawes, Aug 25; Mr. Whitney, Sept. 22, 1870.

Backman, Charles, Stony Ford, N. Y. Sale of Horses. June 23, 1870.  
 Brown's Sons, Jas. N., Illinois. Sale of Short-Horn Cattle. Nov. 4, 1869.  
 Bulls of Duchess Tribe of Short-Horns. Jan. 27 and May 26, 1870.  
 Caldwell's Chemical Analysis. O. Judd & Co., New-York. Dec. 23, 1869  
 Carpenter, J. A., Cobden, Ill. Obituary. Feb. 3, 1870.

MOON'S PHASES.		BOSTON.	NEW-YORK.	WASHINGTON	SUN ON MERID	
	D.	H. M.	H. M.	H. M.	D.	H. M. S.
FULL MOON, . . .	6	10 55 ev.	10 43 ev.	10 31 ev.	1	12 12 33
THIRD QUARTER	13	5 36 ev.	5 24 ev.	5 12 ev.	9	12 10 42
NEW MOON, . . .	20	11 16 ev.	11 4 ev.	10 52 ev.	17	12 8 30
FIRST QUARTER,	29	2 0 mo.	1 48 mo.	1 36 mo.	25	12 6 5

DAY OF MONTH.	DAY OF WEEK.	CALENDAR For Boston, New-England, New-York State, Michi- gan, Wisconsin, Iowa, and Oregon.				CALENDAR For New-York City, Phila- delphia, Connecticut, N. Jersey, Penn., Ohio, In- diana and Illinois.				CALENDAR For Washington, Maryl'd, Virginia, Kent'ky, Miss'ri, and California.													
		SUN RISES		SUN SETS.		MOON SETS.		H. W. BOST'N		SUN RISES		SUN SETS.		MOON SETS.		H. W. N. Y.							
		H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M				
1	W	6	36	5	51	2	57	6	42	6	35	5	53	2	53	3	28	6	33	5	54	2	46
2	T	6	35	5	52	3	49	7	42	6	34	5	53	3	43	4	27	6	32	5	55	3	38
3	F	6	33	5	53	4	37	8	42	6	32	5	54	4	32	5	28	6	30	5	56	4	27
4	S	6	31	5	54	5	23	9	37	6	30	5	55	5	18	6	23	6	29	5	57	5	12
5	<b>A</b>	6	30	5	55	6	0	10	27	6	29	5	56	5	57	7	12	6	27	5	57	5	52
6	M	6	28	5	56	rises.		11	15	6	27	5	57	rises.		7	57	6	26	5	58	rises.	
7	T	6	26	5	57	6	40	11	57	6	25	5	58	6	42	8	41	6	24	5	59	6	43
8	W	6	25	5	58	7	52	ev.	39	6	24	5	59	7	52	9	25	6	23	6	0	7	52
9	T	6	23	5	59	9	5	1	23	6	22	6	0	9	3	10	9	6	21	6	1	9	1
10	F	6	21	6	0	10	17	2	7	6	20	6	1	10	15	10	49	6	20	6	2	10	12
11	S	6	20	6	2	11	31	2	54	6	19	6	2	11	27	11	38	6	18	6	3	11	23
12	<b>A</b>	6	18	6	3	morn.		3	47	6	17	6	3	morn.		ev.	33	6	17	6	4	morn.	
13	M	6	16	6	4	0	43	4	48	6	16	6	4	0	39	1	34	6	15	6	5	0	34
14	T	6	14	6	5	1	53	5	57	6	14	6	5	1	47	2	43	6	13	6	6	1	42
15	W	6	13	6	6	2	55	7	8	6	12	6	6	2	49	3	52	6	12	6	7	2	44
16	T	6	11	6	7	3	52	8	16	6	11	6	8	3	47	5	0	6	10	6	8	3	42
17	F	6	9	6	9	4	40	9	16	6	9	6	9	4	35	6	2	6	9	6	9	4	30
18	S	6	7	6	10	5	11	10	8	6	7	6	10	5	8	6	54	6	7	6	10	5	4
19	<b>A</b>	6	6	6	11	5	45	10	55	6	6	6	11	5	42	7	39	6	6	6	11	5	39
20	M	6	4	6	12	sets.		11	34	6	4	6	12	sets.		8	16	6	4	6	12	sets.	
21	T	6	2	6	13	6	51	morn.		6	2	6	13	6	51	8	56	6	3	6	13	6	51
22	W	6	0	6	14	7	52	0	10	6	1	6	14	7	51	9	33	6	1	6	14	7	51
23	T	5	59	6	15	8	52	0	47	5	59	6	15	8	51	10	11	5	59	6	15	8	49
24	F	5	57	6	17	9	43	1	25	5	58	6	16	9	40	10	46	5	58	6	16	9	37
25	S	5	55	6	18	10	53	2	4	5	56	6	17	10	50	11	25	5	56	6	17	10	45
26	<b>A</b>	5	53	6	19	11	52	2	43	5	54	6	18	11	47	morn.		5	54	6	18	11	42
27	M	5	52	6	20	morn.		3	26	5	52	6	19	morn		0	11	5	53	6	19	morn.	
28	T	5	50	6	21	0	47	4	13	5	51	6	20	0	42	1	0	5	51	6	19	0	37
29	W	5	48	6	22	1	41	5	8	5	49	6	21	1	36	1	54	5	50	6	20	1	30
30	T	5	46	6	23	2	31	6	8	5	47	6	22	2	25	2	54	5	48	6	21	2	20
31	F	5	45	6	24	3	16	7	10	5	46	6	23	3	11	3	55	5	47	6	22	3	6

Cheese Factories Established in England, March 24; in Australia and New-Zealand, July 28, 1870.

Connecticut Poultry Show—Awards of Prizes. Nov. 25, 1869.

Cornell, Adrian, Northampton, Penn Obituary. Sept. 29, 1870.

Dixon, H. H., London, England. Obituary. April 28, 1870.

Douglas Hay Loading Machine Introduced. May 19, 1870.

Downing's Fruit and Fruit Trees, Enlarged Edition, pp. 1100. New-York, Wiley & Son, Oct. 14, 1869.

MOON'S PHASES.		BOSTON.	NEW-YORK.	WASHINGTON	SUN ON MERID.	
	D.	H. M.	H. M.	H. M.	D.	H. M. S.
FULL MOON, . . .	5	9 39 mo.	9 27 mo.	9 15 mo.	1	12 3 56
THIRD QUARTER	12	1 8 mo.	0 56 mo.	0 44 mo.	9	12 1 36
NEW MOON, . . .	19	2 19 ev.	2 7 ev.	1 55 ev.	17	11 59 32
FIRST QUARTER,	27	7 3 ev.	6 51 ev.	6 39 ev.	25	11 57 53

DAY OF MONTH.	DAY OF WEEK.	CALENDAR				CALENDAR				CALENDAR													
		For Boston, New-England, New-York State, Michigan, Wisconsin, Iowa, and Oregon.								For New-York City, Philadelphia, Connecticut, N. Jersey, Penn., Ohio, Indiana and Illinois.				For Washington, Maryl'd, Virginia, Kent'ky, Miss'n, and California.									
		SUN RISES		SUN SETS.		MOON SETS.		H. W. BOST'N		SUN RISES		SUN SETS.		MOON SETS.		SUN RISES		SUN SETS.		MOON SETS.			
H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M				
1	S	5	43	6	25	3	55	8	11	5	44	6	24	3	51	4	55	5	46	6	23	3	47
2	A	5	41	6	27	4	31	9	7	5	42	6	26	4	28	5	52	5	44	6	24	4	24
3	M	5	40	6	28	5	3	9	58	5	41	6	27	5	0	6	44	5	42	6	25	4	58
4	T	5	38	6	29	rises.		10	47	5	39	6	28	rises.		7	31	5	41	6	26	rises.	
5	W	5	36	6	30	6	43	11	29	5	37	6	29	6	43	8	11	5	39	6	27	6	42
6	T	5	35	6	31	7	59	ev.	13	5	36	6	30	7	57	8	59	5	37	6	28	7	55
7	F	5	33	6	32	9	15	1	0	5	34	6	31	9	12	9	46	5	36	6	29	9	9
8	S	5	31	6	33	10	31	1	48	5	33	6	32	10	27	10	32	5	34	6	30	10	23
9	A	5	30	6	34	11	45	2	40	5	31	6	33	11	40	11	22	5	33	6	31	11	34
10	M	5	28	6	36	morn.		3	36	5	30	6	34	morn		ev.	22	5	31	6	32	morn.	
11	T	5	26	6	37	0	50	4	39	5	28	6	35	0	45	1	26	5	30	6	33	0	39
12	W	5	25	6	38	1	48	5	48	5	26	6	36	1	42	2	34	5	28	6	34	1	37
13	T	5	23	6	39	2	37	6	57	5	25	6	37	2	32	3	41	5	27	6	35	2	26
14	F	5	21	6	40	3	16	7	58	5	24	6	38	3	12	4	43	5	25	6	36	3	8
15	S	5	20	6	41	3	48	8	54	5	22	6	39	3	45	5	40	5	24	6	37	3	42
16	A	5	18	6	42	4	16	9	42	5	20	6	40	4	14	6	28	5	23	6	38	4	12
17	M	5	16	6	43	4	12	10	25	5	19	6	41	4	41	7	10	5	21	6	39	4	40
18	T	5	15	6	45	5	5	11	5	5	17	6	42	5	5	7	46	5	20	6	40	5	6
19	W	5	13	6	46	sets.		11	40	5	16	6	43	sets.		8	22	5	18	6	41	sets.	
20	T	5	12	6	47	7	44	morn		5	14	6	44	7	41	9	1	5	17	6	42	7	39
21	F	5	10	6	48	8	43	0	15	5	13	6	45	8	40	9	39	5	16	6	42	8	36
22	S	5	9	6	49	9	43	0	53	5	11	6	46	9	38	10	17	5	14	6	43	9	34
23	A	5	7	6	50	10	40	1	32	5	10	6	47	10	35	10	56	5	13	6	44	10	30
24	M	5	6	6	51	11	35	2	14	5	8	6	48	11	30	11	41	5	11	6	45	11	24
25	T	5	4	6	52	morn.		2	57	5	7	6	49	morn.		morn		5	10	6	46	morn.	
26	W	5	3	6	53	0	27	3	45	5	6	6	50	0	21	0	31	5	9	6	47	0	15
27	T	5	1	6	55	1	12	4	38	5	4	6	51	1	8	1	25	5	8	6	48	1	1
28	F	5	0	6	56	1	53	5	36	5	3	6	52	1	48	2	22	5	6	6	49	1	43
29	S	4	58	6	57	2	29	6	35	5	2	6	53	2	25	3	22	5	5	6	50	2	21
30	A	4	57	6	58	3	0	7	36	5	0	6	55	2	58	4	21	5	4	6	51	2	55

Duncan, W. R., Towanda, Ill. Sale of Short-Horns. Sept. 8, 1870.  
 Exports of Agricultural Products for 1867, '68 and '69. Jan. 6, 1870.  
 Fertilizers—Connecticut Law to Prevent Frauds, April 14; Goodale's Report on Commercial Manures, Feb. 3, 1870.  
 Fowler, Edw. Philip Parsons, Island of Jersey. Sales of Jersey Cattle, at Baltimore, Aug. 18; at Boston, Sept. 8; at Philadelphia, Sept. 15, 1870.  
 Game Fowls, Management and Varieties. J. W. Cooper, M. D., West Chester, Pa. Feb. 10, 1870.



MOON'S PHASES.		BOSTON.	NEW-YORK.	WASHINGTON	SUN ON MERID	
	D.	H. M.	H. M.	H. M.	D.	H. M. S.
FULL MOON, . . .	4	6 16 ev.	6 4 ev.	5 52 ev.	1	11 56 58
THIRD QUARTER	11	9 39 mo.	9 27 mo.	9 15 mo.	9	11 56 14
NEW MOON, . . .	19	6 1 mo.	5 49 mo.	5 37 mo.	17	11 56 8
FIRST QUARTER,	27	8 18 mo.	8 6 mo.	7 54 mo.	25	11 56 38

DAY OF MONTH.	DAY OF WEEK.	CALENDAR				CALENDAR				CALENDAR		
		For Boston, New-England, New-York State, Michigan, Wisconsin, Iowa, and Oregon.				For New-York City, Philadelphia, Connecticut, N. Jersey, Penn., Ohio, Indiana and Illinois.				For Washington, Maryl'd, Virginia, Kent'ky, Miss'ri, and California.		
		SUN RISES	SUN SETS.	MOON SETS.	H. W. BOST'N	SUN RISES	SUN SETS.	MOON SETS.	H. W. N. Y.	SUN RISES	SUN SETS.	MOON SETS.
1	M	4 56	7 0	3 32	8 33	4 59	6 56	3 30	5 18	5 26	6 52	3 28
2	T	4 54	7 1	3 59	9 25	4 58	6 57	3 58	6 11	5 16	6 53	3 58
3	W	4 53	7 2	4 28	10 16	4 56	6 58	4 29	7 2	5 06	6 54	4 29
4	T	4 52	7 3	rises.	11 5	4 55	6 59	rises.	7 46	4 59	6 55	rises.
5	F	4 51	7 4	8 7	11 52	4 54	7 0	8 4	8 35	4 58	6 56	7 59
6	S	4 49	7 5	9 24	ev. 40	4 53	7 1	9 20	9 26	4 57	6 57	9 15
7	A	4 48	7 6	10 38	1 34	4 52	7 2	10 33	10 19	4 55	6 58	10 27
8	M	4 47	7 7	11 42	2 29	4 51	7 3	11 36	11 12	4 54	6 59	11 30
9	T	4 46	7 8	morn.	3 26	4 49	7 4	morn.	ev. 12	4 53	7 0	morn.
10	W	4 44	7 9	0 34	4 27	4 48	7 5	0 29	1 14	4 52	7 1	0 24
11	T	4 43	7 10	1 17	5 30	4 47	7 6	1 13	2 16	4 51	7 2	1 8
12	F	4 42	7 11	1 53	6 30	4 46	7 7	1 49	3 16	4 50	7 2	1 46
13	S	4 41	7 12	2 21	7 30	4 45	7 8	2 19	4 16	4 49	7 3	2 16
14	A	4 40	7 13	2 48	8 20	4 44	7 9	2 47	5 5	4 49	7 4	2 46
15	M	4 39	7 14	3 10	9 7	4 43	7 10	3 10	5 51	4 48	7 5	3 10
16	T	4 38	7 15	3 35	9 50	4 42	7 11	3 35	6 36	4 47	7 6	3 36
17	W	4 37	7 16	3 59	10 30	4 41	7 12	4 1	7 15	4 46	7 7	4 2
18	T	4 36	7 17	4 25	11 9	4 40	7 13	4 28	7 51	4 45	7 8	4 31
19	F	4 35	7 18	sets.	11 47	4 39	7 14	sets.	8 30	4 44	7 9	sets.
20	S	4 34	7 19	8 35	morn.	4 39	7 15	8 30	9 12	4 43	7 10	8 24
21	A	4 33	7 20	9 30	0 25	4 38	7 16	9 24	9 53	4 43	7 10	9 19
22	M	4 32	7 21	10 22	1 10	4 37	7 17	10 17	10 34	4 42	7 11	10 12
23	T	4 31	7 22	11 10	1 50	4 36	7 18	11 4	11 16	4 41	7 12	10 59
24	W	4 31	7 23	11 52	2 34	4 36	7 19	11 47	morn.	4 41	7 13	11 42
25	T	4 30	7 24	morn	3 21	4 35	7 20	morn	0 6	4 40	7 14	morn.
26	F	4 29	7 25	0 29	4 9	4 34	7 20	0 25	0 56	4 39	7 14	0 22
27	S	4 29	7 26	1 3	5 5	4 34	7 21	0 59	1 51	4 39	7 15	0 56
28	A	4 28	7 27	1 33	6 2	4 33	7 22	1 30	2 48	4 38	7 16	1 28
29	M	4 27	7 28	1 59	6 59	4 32	7 23	1 58	3 44	4 38	7 17	1 57
30	T	4 27	7 28	2 26	7 55	4 32	7 23	2 26	4 40	4 37	7 17	2 27
31	W	4 26	7 29	2 55	8 53	4 31	7 24	2 56	5 38	4 37	7 18	2 58

Groom, B. B., Clark Co., Ky. Sale of Short-Horns. July 7, 1870.  
 Hampton, Lewis, Winchester, Ky. Sale of Short-Horns. July 7, 1870.  
 Harney's Barns and Outbuildings. G. E. Woodward, New-York. March 10, 1870.  
 Harris on the Pig. O. Judd & Co., New-York. May 5 and 12, 1870.  
 Hughes, W. H. T., New-York. Sale of Jersey Cattle, &c. June 30, 1870.  
 Jersey Cattle Imported by D. F. Appleton, Ipswich, Mass., April 28; by Davis Collamore, New-York, May 5; by Jas. F. Page, Philadelphia, May 26, 1870.

MOON'S PHASES.		BOSTON.	NEW-YORK.	WASHINGTON	SUN ON MERID.	
	D.	H. M.	H. M.	H. M.	D.	H. M. S.
FULL MOON, . . .	3	1 43 mo.	1 31 mo.	1 19 mo.	1	11 57 30
THIRD QUARTER	9	7 53 ev.	7 41 ev.	7 29 ev.	9	11 58 52
NEW MOON, . . .	17	9 45 ev.	9 33 ev.	9 21 ev.	17	12 0 32
FIRST QUARTER,	25	6 0 ev.	5 48 ev.	5 36 ev.	25	12 2 16

DAY OF MONTH.	DAY OF WEEK.	CALENDAR				CALENDAR				CALENDAR		
		For Boston, New-England, New-York State, Michigan, Wisconsin, Iowa, and Oregon.				For New-York City, Philadelphia, Connecticut, N. Jersey, Penn., Ohio, Indiana and Illinois.				For Washington, Maryl'd, Virginia, Kent'ky, Miss'ri, and California.		
		SUN RISES	SUN SETS.	MOON SETS.	H. W. BOST'N	SUN RISES	SUN SETS.	MOON SETS.	H. W. N. Y.	SUN RISES	SUN SETS.	MOON SETS.
1	T	4 25	7 30	3 25	9 47	4 31	7 24	3 28	6 33	4 36	7 19	3 30
2	F	4 25	7 30	rises.	10 42	4 30	7 25	rises.	7 26	4 36	7 19	rises.
3	S	4 25	7 31	8 17	11 33	4 30	7 26	8 12	8 15	4 36	7 20	8 7
4	<b>A</b>	4 24	7 32	9 25	ev. 27	4 30	7 26	9 20	9 15	4 35	7 21	9 15
5	M	4 24	7 32	10 26	1 23	4 29	7 27	10 20	10 9	4 35	7 21	10 15
6	T	4 24	7 33	11 15	2 19	4 29	7 28	11 10	11 1	4 35	7 22	11 5
7	W	4 23	7 33	11 52	3 12	4 29	7 28	11 49	11 57	4 34	7 23	11 44
8	T	4 23	7 34	morn.	4 5	4 29	7 29	morn.	ev. 52	4 34	7 23	morn.
9	F	4 23	7 35	0 25	5 0	4 28	7 30	0 23	1 47	4 34	7 24	0 20
10	S	4 23	7 36	0 52	5 54	4 28	7 30	0 50	2 41	4 34	7 24	0 48
11	<b>A</b>	4 22	7 36	1 17	6 49	4 28	7 31	1 17	3 34	4 34	7 25	1 16
12	M	4 22	7 37	1 41	7 39	4 28	7 31	1 41	4 24	4 34	7 25	1 42
13	T	4 22	7 37	2 4	8 28	4 28	7 32	2 5	5 13	4 34	7 26	2 7
14	W	4 22	7 38	2 28	9 13	4 28	7 32	2 31	5 59	4 34	7 26	2 33
15	T	4 22	7 38	2 57	9 58	4 28	7 32	3 0	6 44	4 34	7 26	3 4
16	F	4 22	7 38	sets.	10 41	4 28	7 33	sets.	7 25	4 34	7 27	sets.
17	S	4 22	7 39	7 25	11 22	4 28	7 33	7 20	8 5	4 34	7 27	7 14
18	<b>A</b>	4 22	7 39	8 19	morn	4 28	7 33	8 13	8 49	4 34	7 28	8 7
19	M	4 23	7 39	9 9	0 4	4 28	7 34	9 3	9 33	4 34	7 28	8 57
20	T	4 23	7 40	9 52	0 46	4 29	7 34	9 47	10 15	4 34	7 28	9 42
21	W	4 23	7 40	10 31	1 29	4 29	7 34	10 26	10 55	4 34	7 28	10 22
22	T	4 23	7 40	11 5	2 13	4 29	7 34	11 1	11 41	4 35	7 28	10 58
23	F	4 23	7 40	11 35	2 57	4 29	7 34	11 32	morn	4 35	7 29	11 30
24	S	4 23	7 40	morn.	3 42	4 29	7 35	morn	0 28	4 35	7 29	11 59
25	<b>A</b>	4 24	7 41	0 2	4 32	4 30	7 35	0 1	1 19	4 35	7 29	morn.
26	M	4 24	7 41	0 29	5 24	4 30	7 35	0 28	2 11	4 36	7 29	0 28
27	T	4 24	7 41	0 55	6 22	4 30	7 35	0 56	3 8	4 36	7 29	0 57
28	W	4 25	7 40	1 23	7 21	4 29	7 35	1 25	4 6	4 37	7 29	1 27
29	T	4 25	7 40	1 56	8 24	4 29	7 35	1 59	5 8	4 37	7 29	2 3
30	F	4 26	7 40	2 34	9 24	4 29	7 35	2 39	6 11	4 37	7 29	2 43

Johnson's How Crops Feed. O. Judd & Co., New-York. March 31, 1871.  
 Kelly, Wm., Rhinebeck, N. Y. Sale of Short-Horns. Oct. 7, 1869.  
 Kinkead, F. P., Midway, Ky. Sale of Short-Horns. July 7, 1870.  
 Market Days Established at Several Places. June 16, July 21 and Aug. 11, 1870.  
 Massachusetts Society's Sale of Percheron Horses. July 7, 1870.  
 Maryland Grape Growers' Association, Organized. Jan. 27, 1870.  
 McMillan, D., Xenia, O. Great Sale of Short-Horns. June 16, 1870.  
 McClure's Stable Guide. Porter & Coates, Philadelphia. May 5 and 26, 1870.

MOON'S PHASES.		BOSTON.	NEW-YORK.	WASHINGTON	SUN ON MERID		
	D.	H. M.	H. M.	H. M.	D.	H. M. S.	
FULL MOON, . . .	2	8 52 mo.	8 40 mo.	8 28 mo.	1	12 3 29	
THIRD QUARTER	9	8 25 mo.	8 13 mo.	8 1 mo.	9	12 4 52	
NEW MOON, . . .	17	0 43 ev.	0 31 ev.	0 19 ev.	17	12 5 49	
FIRST QUARTER,	25	1 7 mo.	0 55 mo.	0 43 mo.	25	12 6 14	
FULL MOON, . . .	31	4 33 ev.	4 21 ev.	4 9 ev.			

DAY OF MONTH.	DAY OF WEEK.	CALENDAR For Boston, New-England, New-York State, Michi- gan, Wisconsin, Iowa, and Oregon.				CALENDAR For New-York City, Phila- delphia, Connecticut, N. Jersey, Penn., Ohio, In- diana and Illinois.				CALENDAR For Washington, Maryl'd, Virginia, Kent'ky, Miss'ri, and California.					
		SUN RISES		SUN SETS.		MOON RISES		H. W. BOST'N		SUN RISES		SUN SETS.		MOON RISES.	
		H	M	H	M	H	M	H	M	H	M	H	M	H	M
1	S	4 26	7 40	rises.	10 25	4 32	7 35	rises.	7 10	4 38	7 29	rises.			
2	A	4 26	7 40	8 8	11 21	4 32	7 35	8 2	8 4	4 38	7 29	7 56			
3	M	4 27	7 40	9 3	ev. 16	4 33	7 34	8 58	9 2	4 39	7 29	8 53			
4	T	4 28	7 40	9 47	1 10	4 33	7 34	9 43	9 56	4 39	7 28	9 39			
5	W	4 29	7 39	10 25	2 1	4 34	7 34	10 21	10 43	4 40	7 28	10 18			
6	T	4 29	7 39	10 54	2 48	4 35	7 34	10 52	11 32	4 41	7 28	10 49			
7	F	4 30	7 39	11 20	3 35	4 35	7 33	11 19	ev. 21	4 41	7 28	11 18			
8	S	4 30	7 38	11 43	4 23	4 36	7 33	11 43	1 10	4 42	7 27	11 43			
9	A	4 31	7 38	morn.	5 11	4 37	7 33	morn.	1 57	4 42	7 27	morn.			
10	M	4 32	7 38	0 8	6 3	4 37	7 32	0 10	2 49	4 43	7 27	0 11			
11	T	4 33	7 37	0 32	6 55	4 38	7 32	0 34	3 40	4 44	7 26	0 37			
12	W	4 33	7 37	0 58	7 45	4 39	7 31	1 2	4 29	4 44	7 26	1 5			
13	T	4 34	7 36	1 28	8 37	4 39	7 31	1 32	5 21	4 45	7 26	1 37			
14	F	4 35	7 36	2 3	9 28	4 40	7 30	2 8	6 13	4 46	7 25	2 13			
15	S	4 36	7 35	2 43	10 15	4 41	7 30	2 48	7 1	4 46	7 24	2 54			
16	A	4 37	7 34	3 29	11 2	4 42	7 29	3 34	7 45	4 47	7 24	3 40			
17	M	4 37	7 34	sets.	11 44	4 43	7 29	sets.	8 26	4 48	7 23	sets.			
18	T	4 38	7 33	8 32	morn.	4 44	7 28	8 27	9 12	4 49	7 23	8 22			
19	W	4 39	7 32	9 7	0 25	4 44	7 27	9 3	9 54	4 50	7 22	8 59			
20	T	4 40	7 31	9 38	1 8	4 45	7 26	9 35	10 34	4 51	7 21	9 32			
21	F	4 41	7 30	10 7	1 50	4 46	7 26	10 5	11 14	4 52	7 21	10 3			
22	S	4 42	7 30	10 33	2 31	4 47	7 25	10 32	11 59	4 52	7 20	10 32			
23	A	4 43	7 29	10 59	3 14	4 48	7 24	10 59	morn.	4 53	7 19	11 0			
24	M	4 44	7 28	11 26	3 59	4 48	7 23	11 27	0 46	4 54	7 18	11 29			
25	T	4 45	7 27	11 55	4 52	4 49	7 23	11 58	1 39	4 55	7 18	morn.			
26	W	4 46	7 26	morn.	5 50	4 50	7 22	morn	2 36	4 56	7 17	0 1			
27	T	4 47	7 25	0 29	6 55	4 51	7 21	0 33	3 41	4 57	7 16	0 37			
28	F	4 48	7 24	1 10	8 4	4 52	7 20	1 15	4 49	4 58	7 15	1 20			
29	S	4 49	7 23	2 3	9 11	4 53	7 19	2 8	5 57	4 58	7 14	2 14			
30	A	4 50	7 22	3 4	10 14	4 54	7 18	3 9	7 0	4 59	7 13	3 15			
31	M	4 51	7 21	rises.	11 12	4 55	7 17	rises.	7 54	4 59	7 12	rises.			

Merrick's Strawberry Culture. J. E. Tilton & Co., Boston. May 5, 1870.  
 Miller, John, Pickering. Can. Sale of Short-Horns, Nov. 18, 1869.  
 Morris, Lewis G., Fordham, N. Y. Sale of Horses. June 16, 1870.  
 National Architect. G. E. Woodward. New-York. March 10, 1870.  
 Norman Horses Imported by J. A. Perry, Ill. Sept. 29, 1870.  
 Northern Ohio Fair Association Organized. March 10, 1870.

MOON'S PHASES.		BOSTON.	NEW-YORK.	WASHINGTON	SUN ON MERID	
	D.	H. M.	H. M.	H. M.	D.	H. M. S.
THIRD QUARTER	7	11 40 ev.	11 28 ev.	11 16 ev.	1	12 6 4
NEW MOON, . . .	16	2 18 mo.	2 6 mo.	1 54 mo.	9	12 5 17
FIRST QUARTER,	23	6 51 mo.	6 39 mo.	6 27 mo.	17	12 3 53
FULL MOON, . . .	30	1 37 mo.	1 25 mo.	1 13 mo.	25	12 1 57

DAY OF MONTH.	DAY OF WEEK.	CALENDAR For Boston, New-England, New-York State, Michi- gan, Wisconsin, Iowa, and Oregon.				CALENDAR For New-York City, Phila- delphia, Connecticut, N. Jersey, Penn., Ohio, In- diana and Illinois.				CALENDAR For Washington, Mary'd, Virginia, Kent'ky, Miss'ri, and California.		
		SUN RISES	SUN SETS.	MOON RISES.	H. W. BOST'N	SUN RISES	SUN SETS.	MOON RISES.	H. W. N. Y.	SUN RISES	SUN SETS.	MOON RISES.
		H M	II M	H M	H M	II M	H M	H M	H M	H M	H M	H M
1	T	4 52	7 20	8 19	ev. 2	4 56	7 16	8 15	8 47	5 0	7 11	8 11
2	W	4 53	7 18	8 52	0 54	4 57	7 14	8 50	9 36	5 1	7 10	8 47
3	T	4 54	7 17	9 21	1 36	4 58	7 13	9 19	10 21	5 2	7 9	9 18
4	F	4 55	7 16	9 46	2 19	4 59	7 12	9 46	11 1	5 3	7 8	9 45
5	S	4 56	7 15	10 10	2 59	5 0	7 11	10 11	11 44	5 4	7 7	10 12
6	<b>A</b>	4 57	7 14	10 35	3 41	5 1	7 10	10 37	ev. 27	5 5	7 6	10 38
7	M	4 58	7 12	11 10	4 27	5 2	7 9	11 3	1 14	5 6	7 5	11 6
8	T	4 59	7 11	11 30	5 15	5 3	7 7	11 33	2 1	5 6	7 4	11 37
9	W	5 0	7 10	morn.	6 9	5 4	7 6	morn.	2 55	5 7	7 2	morn.
10	T	5 1	7 8	0 2	7 5	5 5	7 5	0 6	3 50	5 8	7 1	0 11
11	F	5 2	7 7	0 40	8 3	5 6	7 4	0 45	4 47	5 9	7 0	0 50
12	S	5 3	7 6	1 21	8 58	5 7	7 2	1 28	5 42	5 10	6 59	1 34
13	<b>A</b>	5 4	7 4	2 13	9 50	5 8	7 1	2 17	6 36	5 11	6 58	2 23
14	M	5 5	7 3	3 9	10 39	5 9	7 0	3 14	7 23	5 12	6 56	3 20
15	T	5 6	7 1	4 7	11 22	5 10	6 58	4 12	8 5	5 13	6 54	4 18
16	W	5 7	7 0	sets.	morn.	5 11	6 57	sets.	8 49	5 14	6 53	sets.
17	T	5 8	6 58	8 10	0 4	5 12	6 55	8 8	9 30	5 15	6 52	8 6
18	F	5 10	6 57	8 36	0 44	5 13	6 54	8 35	10 11	5 16	6 51	8 34
19	S	5 11	6 55	9 3	1 25	5 14	6 53	9 3	10 47	5 17	6 50	9 3
20	<b>A</b>	5 12	6 54	9 29	2 5	5 15	6 51	9 30	11 31	5 17	6 48	9 32
21	M	5 13	6 52	9 58	2 47	5 16	6 50	10 1	morn.	5 18	6 47	10 3
22	T	5 14	6 51	10 29	3 34	5 17	6 48	10 33	0 20	5 19	6 45	10 37
23	W	5 15	6 49	11 7	4 27	5 17	6 47	11 12	1 14	5 20	6 44	11 17
24	T	5 16	6 48	11 54	5 30	5 18	6 45	12 0	2 16	5 21	6 43	morn.
25	F	5 17	6 46	morn.	6 40	5 19	6 44	morn	3 24	5 22	6 41	0 5
26	S	5 18	6 44	0 50	7 53	5 20	6 42	0 55	4 38	5 23	6 40	1 1
27	<b>A</b>	5 19	6 43	1 54	9 2	5 21	6 41	2 0	5 47	5 24	6 38	2 4
28	M	5 20	6 41	3 6	10 3	5 22	6 39	3 11	6 49	5 25	6 37	3 16
29	T	5 21	6 39	rises.	10 57	5 23	6 37	rises.	7 40	5 26	6 35	rises.
30	W	5 22	6 38	7 18	11 43	5 24	6 36	7 16	8 24	5 26	6 34	7 14
31	T	5 23	6 36	7 45	ev. 23	5 25	6 34	7 44	9 10	5 27	6 32	7 41

Ogden, G. W., Paris, Ky. Sale of Horses. Nov. 4, 1869.  
 Pacific Editorial Excursion. July 28, 1870.  
 Page, J. F., Philadelphia. Sale of Alderney Cattle. May 26, 1870.  
 Pennsylvania Agricultural College Report for 1869. March 3, 1870.  
 Penrose, John R., Philadelphia. Sale of Jerseys. Oct. 14, 1869.  
 Pictures of Edgewood. Scribner & Co., New-York. Dec. 16, 1869.  
 Pierce, Carlos, Stanstead, Can. Obituary. Sept. 1, 1870.

MOON'S PHASES.		BOSTON.		NEW-YORK.		WASHINGTON		SUN ON MERID.	
	D.	H. M.		H. M.		H. M.		D.	H. M. S.
THIRD QUARTER	6	5 26 ev.		5 14 ev.		5 2 ev.		1	11 59 54
NEW MOON, . . .	14	2 25 ev.		2 13 ev.		2 1 ev.		9	11 57 15
FIRST QUARTER,	21	0 28 ev.		0 16 ev.		0 4 ev.		17	11 54 28
FULL MOON, . . .	28	1 0 ev.		0 48 ev.		0 36 ev.		25	11 51 41

DAY OF MONTH.	DAY OF WEEK.	CALENDAR For Boston, New-England, New-York State, Michi- gan, Wisconsin, Iowa, and Oregon.				CALENDAR For New-York City, Phila- delphia, Connecticut, N. Jersey, Penn., Ohio, In- diana and Illinois.				CALENDAR For Washington, Maryl'd, Virginia, Kent'ky, Miss'ri, and California.													
		SUN RISES		SUN SETS.		MOON RISES.		H. W. BOST'N		SUN RISES		SUN SETS.		MOON RISES.									
		H	M	H	M	H	M	H	M	H	M	H	M	H	M								
1	F	5	24	6	35	8	12	1	4	5	26	6	33	8	12	9	50	5	28	6	31	8	12
2	S	5	26	6	33	8	35	1	44	5	27	6	31	8	36	10	28	5	29	6	29	8	37
3	A	5	27	6	31	9	1	2	23	5	28	6	29	9	3	11	6	5	30	6	28	9	6
4	M	5	28	6	29	9	28	3	3	5	29	6	28	9	31	11	48	5	31	6	26	9	35
5	T	5	29	6	28	9	59	3	46	5	30	6	26	10	3	ev. 32	5	32	6	25	10	7	
6	W	5	30	6	26	10	35	4	35	5	31	6	25	10	40	1	22	5	33	6	23	10	45
7	T	5	31	6	24	11	16	5	30	5	32	6	23	11	22	2	16	5	34	6	22	11	28
8	F	5	32	6	22	morn.		6	28	5	33	6	21	morn.		3	14	5	35	6	21	morn.	
9	S	5	33	6	21	0	3	7	31	5	34	6	20	0	8	4	16	5	35	6	20	0	15
10	A	5	34	6	19	0	57	8	28	5	35	6	18	1	2	5	13	5	36	6	18	1	8
11	M	5	35	6	17	1	56	9	22	5	36	6	16	2	1	6	8	5	37	6	17	2	4
12	T	5	36	6	15	2	59	10	11	5	37	6	15	3	3	6	57	5	38	6	15	3	7
13	W	5	37	6	14	4	4	10	57	5	38	6	13	4	7	7	40	5	39	6	14	4	10
14	T	5	38	6	12	sets.		11	38	5	39	6	11	sets.		8	20	5	40	6	12	sets.	
15	F	5	39	6	10	7	5	morn.		5	40	6	9	7	5	9	3	5	41	6	10	7	5
16	S	5	40	6	8	7	32	0	17	5	41	6	8	7	33	9	45	5	42	6	9	7	33
17	A	5	41	6	7	7	59	0	59	5	42	6	6	8	2	10	24	5	43	6	7	8	4
18	M	5	43	6	5	8	31	1	41	5	43	6	4	8	35	11	10	5	44	6	6	8	38
19	T	5	44	6	3	9	7	2	27	5	44	6	3	9	12	morn		5	44	6	4	9	16
20	W	5	45	6	1	9	51	3	17	5	45	6	1	9	56	0	2	5	45	6	2	10	1
21	T	5	46	6	0	10	42	4	14	5	46	5	59	10	48	1	0	5	46	6	1	10	53
22	F	5	47	5	58	11	44	5	20	5	47	5	58	11	50	2	5	5	47	5	59	11	55
23	S	5	48	5	56	morn.		6	33	5	48	5	56	morn		3	19	5	48	5	58	morn.	
24	A	5	49	5	54	0	51	7	45	5	49	5	54	0	56	4	30	5	49	5	56	1	2
25	M	5	50	5	53	2	3	8	50	5	50	5	53	2	7	5	35	5	50	5	54	2	12
26	T	5	51	5	51	3	14	9	46	5	51	5	52	3	17	6	32	5	51	5	53	3	21
27	W	5	52	5	49	4	25	10	34	5	52	5	50	4	27	7	19	5	52	5	51	4	29
28	T	5	53	5	47	rises.		11	17	5	53	5	48	rises.		7	59	5	53	5	50	rises.	
29	F	5	54	5	46	6	35	11	54	5	54	5	46	1	36	8	39	5	54	5	48	6	37
30	S	5	56	5	44	7	2	ev. 32		5	54	5	44	7	4	9	19	5	55	5	46	7	6

Poultry Importations by R. Gibson, Nov. 18, 1869; by W. Simpson, Jr., P. Williams, I. Van Winkle, and H. H. G. Sharpless, April 21; S. J. Parker, R. Gibson and J. R. Page, May 5; Rev. W. Rodman, June 2; by S. J. Parker, July 28, 1870.  
 Public Grounds of Paris. Scribner & Co., New-York. Dec. 9, 1869.  
 Rand's Seventy-five Popular Flowers, J. E. Tilton & Co., Boston. May 5, 1870  
 Raspberries Introduced by E. E. Lord, July 28; by D. W. Herstine, Aug. 11, 1870.  
 Russell, George, Fifeshire, Scotland. Obituary. June 2, 1870.  
 Rvsdyk, W. M., Orange Co., N. Y. Obituary, May 5, 1870.  
 Sharpless and others, Cheltenham, Pa. Sale of Alderneys. June 23, 1870.

MOON'S PHASES.		BOSTON.	NEW-YORK.	WASHINGTON	SUN ON MERID	
	D.	H. M.	H. M.	H. M.	D.	H. M. S.
THIRD QUARTER	6	0 48 ev.	0 36 ev.	0 24 ev.	1	11 49 41
NEW MOON, . . .	14	1 35 mo.	1 23 mo.	1 11 mo.	9	11 47 19
FIRST QUARTER,	20	7 10 ev.	6 58 ev.	6 46 ev.	17	11 45 26
FULL MOON, . . .	28	3 30 mo.	3 18 mo.	3 6 mo.	25	11 44 11

DAY OF MONTH.	DAY OF WEEK.	CALENDAR				CALENDAR				CALENDAR		
		For Boston, New-England, New-York State, Michigan, Wisconsin, Iowa, and Oregon.				For New-York City, Philadelphia, Connecticut, N. Jersey, Penn., Ohio, Indiana and Illinois.				For Washington, Maryl'd, Virginia, Kent'ky, Miss'ri, and California.		
		SUN RISES	SUN SETS.	MOON RISES.	H. W. BOST'N	SUN RISES	SUN SETS.	MOON RISES.	H. W. N. Y.	SUN RISES	SUN SETS.	MOON RISES.
1	<b>A</b>	5 57	5 42	7 27	1 11	5 56	5 43	7 30	9 57	5 55	5 43	7 33
2	<b>M</b>	5 58	5 40	7 57	1 41	5 57	5 41	8 1	10 33	5 56	5 42	8 5
3	<b>T</b>	5 59	5 39	8 30	2 30	5 58	5 39	8 35	11 13	5 57	5 40	8 40
4	<b>W</b>	6 0	5 37	9 9	3 13	5 59	5 38	9 15	11 58	5 58	5 39	9 20
5	<b>T</b>	6 1	5 35	9 54	4 1	6 0	5 36	10 0	ev. 48	5 59	5 37	10 6
6	<b>F</b>	6 2	5 33	10 44	4 55	6 1	5 35	10 50	1 42	6 0	5 35	10 56
7	<b>S</b>	6 3	5 32	11 41	5 54	6 2	5 33	11 46	2 40	6 1	5 34	11 52
8	<b>A</b>	6 4	5 30	morn.	6 56	6 3	5 31	morn	3 41	6 2	5 32	morn.
9	<b>M</b>	6 6	5 28	0 42	7 53	6 4	5 30	0 46	4 38	6 3	5 31	0 51
10	<b>T</b>	6 7	5 27	1 45	8 49	6 5	5 28	1 49	5 34	6 4	5 29	1 52
11	<b>W</b>	6 8	5 25	2 51	9 39	6 7	5 27	2 54	6 25	6 5	5 28	2 56
12	<b>T</b>	6 9	5 23	4 0	10 26	6 8	5 25	4 2	7 10	6 6	5 26	4 3
13	<b>F</b>	6 10	5 22	5 10	11 9	6 9	5 23	5 10	7 51	6 7	5 25	5 10
14	<b>S</b>	6 11	5 20	sets.	11 51	6 10	5 22	sets.	8 34	6 8	5 23	sets.
15	<b>A</b>	6 13	5 19	6 29	morn.	6 11	5 20	6 32	9 21	6 9	5 22	6 35
16	<b>M</b>	6 14	5 17	7 3	0 34	6 12	5 19	7 8	10 8	6 10	5 21	7 13
17	<b>T</b>	6 15	5 15	7 52	1 22	6 13	5 17	7 55	10 55	6 11	5 19	8 2
18	<b>W</b>	6 16	5 14	8 36	2 13	6 14	5 16	8 42	11 52	6 12	5 18	8 47
19	<b>T</b>	6 17	5 12	9 36	3 7	6 15	5 14	9 42	morn.	6 13	5 16	9 48
20	<b>F</b>	6 18	5 11	10 43	4 7	6 16	5 13	10 49	0 54	6 14	5 15	10 54
21	<b>S</b>	6 20	5 9	11 53	5 15	6 18	5 12	11 57	2 1	6 15	5 14	morn.
22	<b>A</b>	6 21	5 8	morn.	6 24	6 19	5 10	morn.	3 10	6 16	5 13	0 2
23	<b>M</b>	6 22	5 6	1 4	7 31	6 20	5 9	1 8	4 15	6 18	5 11	1 11
24	<b>T</b>	6 23	5 5	2 13	8 28	6 21	5 7	2 16	5 13	6 19	5 10	2 18
25	<b>W</b>	6 24	5 3	3 20	9 18	6 22	5 6	3 21	6 4	6 20	5 9	3 23
26	<b>T</b>	6 26	5 2	4 25	10 3	6 23	5 4	4 25	6 49	6 21	5 8	4 25
27	<b>F</b>	6 27	5 1	rises.	10 46	6 24	5 3	rises.	7 30	6 22	5 6	rises.
28	<b>S</b>	6 28	4 59	5 28	11 23	6 26	5 2	5 30	8 6	6 23	5 5	5 33
29	<b>A</b>	6 29	4 58	5 57	12 0	6 27	5 1	6 1	8 45	6 24	5 4	6 4
30	<b>M</b>	6 31	4 57	6 28	ev. 39	6 28	4 59	6 32	9 25	6 25	5 2	6 37
31	<b>T</b>	6 32	4 55	7 5	1 19	6 29	4 58	7 10	10 5	6 26	5 1	7 16

Sheldon, Jas. O., Geneva, N. Y., Exportation of Short-Horns to England, Nov. 18, 1869.  
 Sales to Walcott & Campbell, Nov. 18, 1869, and Aug. 4, 1870.  
 Short-Horn Herd Book, Ninth Volume, Lewis F. Allen, Black Rock, N. Y. Feb. 17, 1870.  
 Short-Horn Cattle Imported by Mr. Bihler, California, March 3; by Jas. O. Sheldon, Geneva, March 24, and April 7; by Walcott & Campbell, New-York Mills, May 19, 26, June 2, 9, July 14, Aug. 11, 25; by M. H. Cochrane, May 26, Aug. 4, 11, 18, 25; by Mr. Thompson, Canada, Sept. 29, 1870.  
 Short-Horn Record. A. J. Alexander, Spring Station, Ky. Oct. 21, 1869.

MOON'S PHASES.		BOSTON.	NEW-YORK.	WASHINGTON	SUN ON MERID.	
	D.	H. M.	H. M.	H. M.	D.	H. M. S.
THIRD QUARTER	5	8 11 mo.	7 59 mo.	7 47 mo.	1	11 43 42
NEW MOON, . . .	12	0 25 ev.	0 13 ev.	0 1 ev.	9	11 43 57
FIRST QUARTER,	19	4 3 mo.	3 51 mo.	3 39 mo.	17	11 45 7
FULL MOON, . . .	26	9 9 ev.	8 57 ev.	8 45 ev.	25	11 47 9

DAY OF MONTH.	DAY OF WEEK.	CALENDAR For Boston, New-England, New-York State, Michi- gan, Wisconsin, Iowa, and Oregon.				CALENDAR For New-York City, Phila- delphia, Connecticut, N. Jersey, Penn., Ohio, In- diana and Illinois.				CALENDAR For Washington, Maryl'd, Virginia, Kent'ky, Miss'ri, and California.			
		SUN RISES	SUN SETS.	MOON RISES.	H. W. BOST'N	SUN RISES	SUN SETS.	MOON RISES.	H. W. N. Y.	SUN RISES	SUN SETS.	MOON RISES.	
		H M	H M	H M	H M	H M	H M	H M	H M	H M	H M	H M	
1	W	6 33	4 54	7 47	2 3	6 30	4 57	7 53	10 45	6 27	5 0	7 59	
2	T	6 34	4 53	8 36	2 47	6 31	4 56	8 42	11 25	6 28	4 59	8 48	
3	F	6 36	4 51	9 28	3 33	6 32	4 54	9 34	ev. 19	6 29	4 58	9 40	
4	S	6 37	4 50	10 27	4 24	6 34	4 53	10 32	1 11	6 31	4 57	10 37	
5	A	6 38	4 49	11 29	5 20	6 35	4 52	11 33	2 4	6 32	4 56	11 37	
6	M	6 39	4 48	morn.	6 17	6 36	4 51	morn.	3 3	6 33	4 55	morn.	
7	T	6 41	4 47	0 33	7 15	6 37	4 50	0 36	4 0	6 34	4 54	0 39	
8	W	6 42	4 45	1 38	8 9	6 38	4 49	1 40	4 53	6 35	4 53	1 42	
9	T	6 43	4 44	2 46	9 2	6 40	4 48	2 47	5 47	6 36	4 52	2 48	
10	F	6 44	4 43	3 50	9 51	6 41	4 47	3 56	6 37	6 37	4 51	3 55	
11	S	6 46	4 42	5 10	10 40	6 42	4 46	5 8	7 24	6 38	4 50	5 6	
12	A	6 47	4 41	sets.	11 27	6 43	4 45	sets.	8 10	6 39	4 49	sets.	
13	M	6 48	4 40	5 37	morn.	6 44	4 44	5 42	9 1	6 40	4 48	5 47	
14	T	6 49	4 39	6 26	0 15	6 46	4 43	6 31	9 54	6 41	4 47	6 37	
15	W	6 51	4 39	7 23	1 8	6 47	4 42	7 29	10 47	6 43	4 47	7 35	
16	T	6 52	4 38	8 30	2 4	6 48	4 41	8 35	11 45	6 44	4 46	8 41	
17	F	6 53	4 37	9 41	3 0	6 49	4 40	9 46	morn	6 45	4 45	9 52	
18	S	6 54	4 36	10 54	3 59	6 50	4 39	10 58	0 46	6 46	4 44	11 2	
19	A	6 56	4 35	morn.	5 0	6 51	4 39	morn.	1 47	6 47	4 44	morn.	
20	M	6 57	4 34	0 5	6 3	6 53	4 38	0 7	2 48	6 48	4 43	0 10	
21	T	6 58	4 34	1 12	7 1	6 54	4 38	1 14	3 46	6 49	4 43	1 16	
22	W	6 59	4 33	2 18	7 54	6 55	4 37	2 19	4 39	6 50	4 42	2 19	
23	T	7 0	4 32	3 21	8 45	6 56	4 36	3 21	5 30	6 51	4 42	3 20	
24	F	7 2	4 32	4 24	9 30	6 57	4 36	4 22	6 16	6 52	4 41	4 20	
25	S	7 3	4 31	5 26	10 12	6 58	4 35	5 23	6 58	6 53	4 40	5 20	
26	A	7 4	4 31	rises.	10 55	6 59	4 35	rises.	7 39	6 55	4 40	rises.	
27	M	7 5	4 30	5 3	11 33	7 0	4 35	5 8	8 15	6 56	4 40	5 13	
28	T	7 6	4 30	5 43	ev. 12	7 2	4 34	5 48	8 58	6 57	4 40	5 54	
29	W	7 7	4 30	6 28	0 55	7 3	4 34	6 34	9 41	6 58	4 39	6 40	
30	T	7 8	4 29	7 21	1 38	7 4	4 34	7 27	10 23	6 59	4 39	7 33	

Snell, John, Edmonton, Can. Sale of Short-Horns. Oct. 14, 1869.  
 Steam Plowing Introduced in Louisiana. March 24, 1870.  
 Stock first Shipped by Railroad to California. March 24 and April 7, 1870.  
 Swine—Berkshires Imported by C. C. & R. H. Parks, Waukegan, Ill., July 28; by M.  
 H. Cochrane, Compton, Can., Sept. 8, 1870.  
 Talbutt, J. H., Lexington, Ky. Sale of Short-Horns. July 7, 1870.  
 Texas Agricultural and Mechanical Association Organized. April 7, 1870.  
 Trophy Tomato Introduced. Dec. 23, 1869.



MOON'S PHASES.		BOSTON.		NEW-YORK.	WASHINGTON	SUN ON MERID.	
	D.	H. M.		H. M.	H. M.	D.	H. M. S.
THIRD QUARTER	5	2 2 mo.		1 50 mo.	1 38 mo.	1	11 49 12
NEW MOON, . . .	11	11 18 ev.		11 6 ev.	10 54 ev.	9	11 52 32
FIRST QUARTER,	18	3 57 ev.		3 45 ev.	3 33 ev.	17	11 56 20
FULL MOON, . . .	26	4 51 ev.		4 39 ev.	4 27 ev.	25	12 0 19

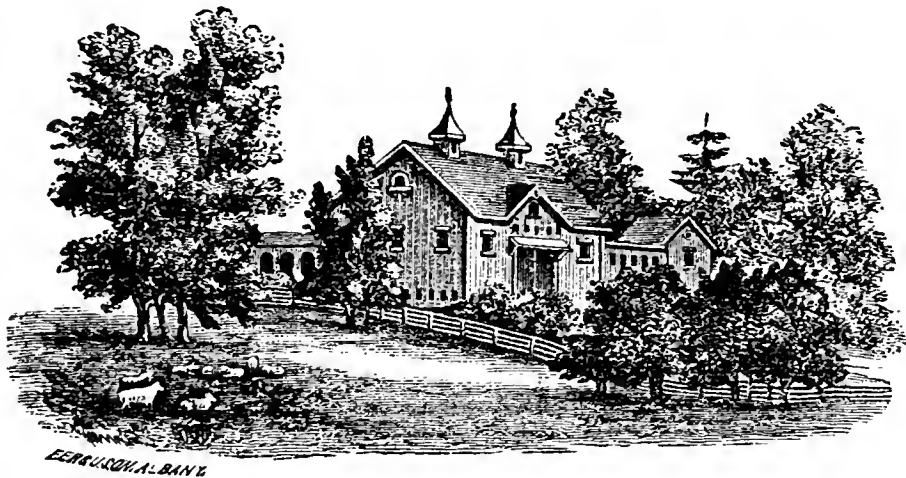
DAY OF MONTH.	DAY OF WEEK.	CALENDAR				CALENDAR				CALENDAR							
		For Boston, New-England, New-York State, Michigan, Wisconsin, Iowa, and Oregon.								For New-York City, Philadelphia, Connecticut, N. Jersey, Penn., Ohio, Indiana and Illinois.				For Washington, Maryl'd, Virginia, Kent'ky, Miss'ri, and California.			
		SUN RISES		SUN SETS.		MOON RISES.		H. W. BOST'N		SUN RISES		SUN SETS.		MOON RISES.		H. W. N. Y.	
1	F	7 10	4 29	8 16	2 22	7 5	4 34	8 21	11 5	7 0	4 39	8 27					
2	S	7 11	4 29	9 16	3 6	7 6	4 33	9 21	11 51	7 1	4 39	9 25					
3	A	7 12	4 28	10 17	3 53	7 7	4 33	10 21	ev. 39	7 2	4 38	10 25					
4	M	7 13	4 28	11 22	4 42	7 8	4 33	11 24	1 29	7 2	4 38	11 27					
5	T	7 14	4 28	morn.	5 36	7 9	4 32	morn.	2 21	7 3	4 38	morn.					
6	W	7 15	4 28	0 26	6 29	7 10	4 32	0 28	3 15	7 4	4 38	0 29					
7	T	7 16	4 28	1 32	7 27	7 11	4 32	1 32	4 11	7 5	4 38	1 33					
8	F	7 17	4 28	2 43	8 21	7 12	4 32	2 42	5 6	7 6	4 38	2 41					
9	S	7 17	4 28	3 55	9 17	7 13	4 32	3 53	6 3	7 7	4 38	3 51					
10	A	7 18	4 28	sets.	10 13	7 14	4 32	sets.	6 59	7 8	4 38	sets.					
11	M	7 19	4 28	4 10	11 8	7 15	4 32	4 15	7 50	7 9	4 38	4 21					
12	T	7 20	4 28	5 4	morn	7 15	4 32	5 10	8 47	7 9	4 39	5 16					
13	W	7 21	4 28	6 10	0 2	7 16	4 33	6 16	9 45	7 10	4 39	6 22					
14	T	7 22	4 28	7 22	0 59	7 16	4 33	7 27	10 37	7 11	4 39	7 33					
15	F	7 22	4 29	8 38	1 54	7 17	4 33	8 43	11 32	7 12	4 39	8 47					
16	S	7 23	4 29	9 52	2 48	7 18	4 33	9 55	morn.	7 12	4 40	9 58					
17	A	7 24	4 29	11 3	3 41	7 18	4 33	11 5	0 27	7 13	4 40	11 7					
18	M	7 24	4 29	morn.	4 35	7 19	4 34	morn.	1 22	7 14	4 40	morn.					
19	T	7 25	4 30	0 10	5 29	7 20	4 34	0 11	2 15	7 14	4 41	0 12					
20	W	7 26	4 30	1 15	6 22	7 20	4 35	1 15	3 8	7 15	4 41	1 14					
21	T	7 26	4 31	2 17	7 15	7 21	4 35	2 16	3 59	7 15	4 42	2 15					
22	F	7 26	4 31	3 19	8 6	7 21	4 36	3 16	4 50	7 16	4 42	3 14					
23	S	7 27	4 32	4 21	8 55	7 22	4 37	4 17	5 39	7 16	4 43	4 14					
24	A	7 27	4 32	5 21	9 41	7 22	4 37	5 16	6 27	7 17	4 43	5 12					
25	M	7 28	4 33	6 20	10 26	7 23	4 38	6 15	7 11	7 17	4 44	6 9					
26	T	7 28	4 33	rises.	11 10	7 23	4 39	rises.	7 52	7 17	4 44	rises.					
27	W	7 28	4 34	5 16	11 53	7 23	4 39	5 21	8 36	7 18	4 45	5 28					
28	T	7 29	4 35	6 10	ev. 34	7 23	4 40	6 16	9 22	7 18	4 46	6 21					
29	F	7 29	4 36	7 9	1 16	7 24	4 40	7 14	10 3	7 18	4 47	7 19					
30	S	7 29	4 37	8 9	1 59	7 24	4 41	8 13	10 41	7 19	4 47	8 17					
31	A	7 30	4 37	9 11	2 40	7 24	4 42	9 14	11 22	7 19	4 48	9 17					

Veitch, Jas., Chelsea, England. Obituary. Nov. 4, 1869.  
 Veitch, Jas. G., Chelsea, England. Obituary. Sept. 15, 1870.  
 Vermont Horse Stock Company Organized. Jan. 6, 1870.  
 Village Builder. A. J. Bicknell & Co., Troy. March 10, 1870.  
 Walsh, B. D., Rock Island, Ill. Obituary. Dec. 2, 1869.  
 Waring's Handy Book of Husbandry. E. B. Treat & Co., New-York. July 14, 1870.  
 Wellington, H. M., Boston. Sale of Jerseys. July 7, 1870.  
 Wright's Poultry Keeper. J. E. Tilton & Co., Boston. May 5, 1870.



THE  
ILLUSTRATED ANNUAL REGISTER  
OF  
RURAL AFFAIRS

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FARM BUILDINGS.

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THE TWO GREAT AIDS of improved husbandry are farm machines and farm buildings. Machinery plants, cultivates and harvests the crops, and fits them for market and consumption. Buildings secure from waste all the products of the farm, and protect from suffering, disease and death, all domestic animals. The former have received a vast amount of attention, and the inventive genius of thousands has been brought to bear for the improvement and perfection of plows, harrows, cultivators, mowers and reapers, threshers and grinders. Much less of hard thinking has been devoted to the construction of the various buildings of the farm, for securing cheapness, durability, convenience in erection, and for a saving of labor in filling, transferring and removing the many tons of their contents. With the consciousness that every contribution to a collection of desirable plans may prove acceptable and valuable, we present a few in addition to the several that have already appeared in the ILLUSTRATED ANNUAL REGISTER OF RURAL AFFAIRS.

A CURB-ROOF BARN.

The accompanying view represents a curb-roof barn, known also by the terms gambrel or mansard roof, and distinguished by the angle half way up the rafters. It has an important advantage in giving more capacity

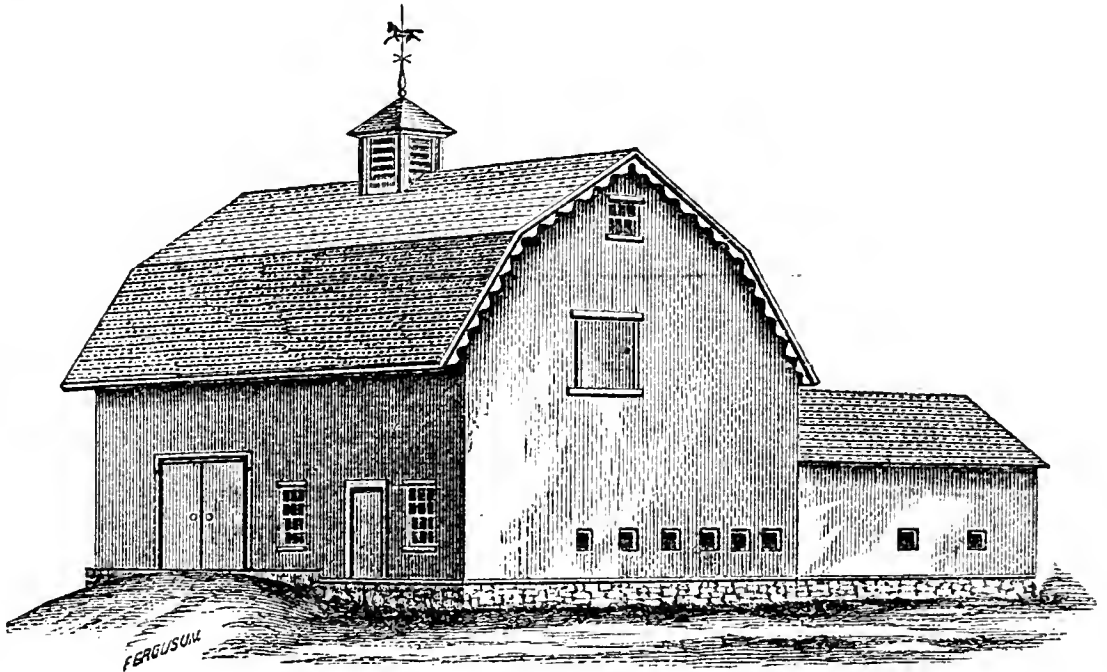


Fig. 2.—Curb Roof Barn.

for a given amount of siding and shingles ; and a greater height above the eaves or posts, which presents no difficulty in filling, now that the work of pitching from the wagon load is wholly performed by means of the horse-fork. The cross timbers above the cross beam being entirely omitted, (except at the ends or outside,) the horse-fork has room to work freely. This barn was planned and built by W. D. Herendeen of Wayne Co., N. Y. The main portion is 40 by 56 feet, and it is well adapted to a farm of 100 to 150 acres.

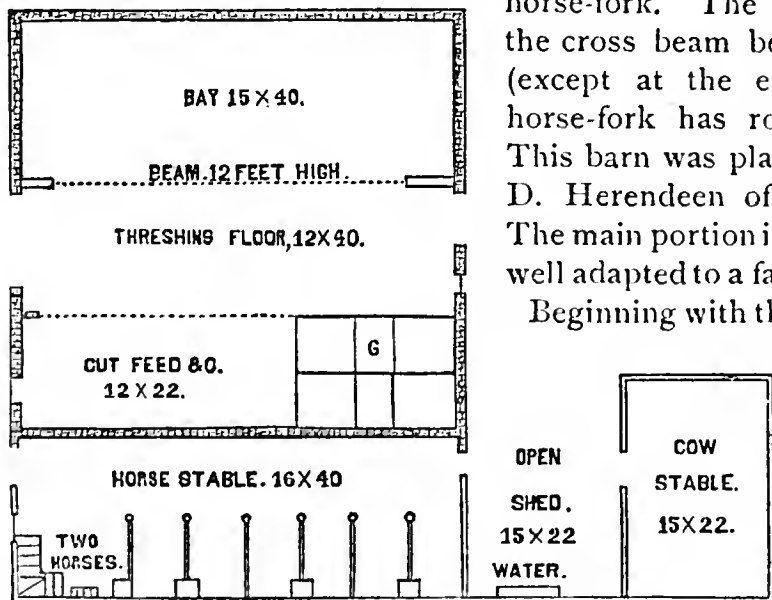


Fig. 3.—Plan of Barn—Horse Stalls 16 inches below Barn Floor, 8 feet high in the clear.

farming tools, &c., after the grain is threshed or the hay fed out. Broad

Beginning with the plan, fig. 3, the construction is briefly explained. The beam between the bay and threshing floor is 12 feet high, and the girth being left out, the whole floor is accessible for the storage of wagons, farming tools, &c., after the grain is threshed or the hay fed out. Broad

sliding doors open from the outside (on the left) to this floor, and a narrower door at the opposite side. The whole floor is covered with two-inch pine plank, planed and matched.

The cellar is under this floor, 40 feet square, (occupying all the barn except the horse stables,) and 8 feet high in the clear. It consists of an open shed on the side next the cow stable, 10 by 40 feet, with mangers next to the walls. The remaining space, 30 by 40 feet, is enclosed, and has likewise mangers next the wall. The building stands about four feet above the level of the ground in front, and the earth is filled in so as to make an easy ascent. The granary, marked G, affords ample storage for threshed grain.

The horse-stable, 16 feet wide, 16 inches below the floor, and 8 feet high, is entered by a sliding door on the left wide enough for two horses to pass. There is room for eight horses. The larger stall for two horses is often convenient for feeding a harnessed team. The others are  $4\frac{1}{2}$  by 10 feet in the clear, and the box hay feeders are those now commonly employed, extending upwards about 20 feet, with doors at the sides at different heights to throw in the hay. The space over the horse stables is occupied with hay for feeding them, the floor of this bay being about seven feet above the floor of the barn.

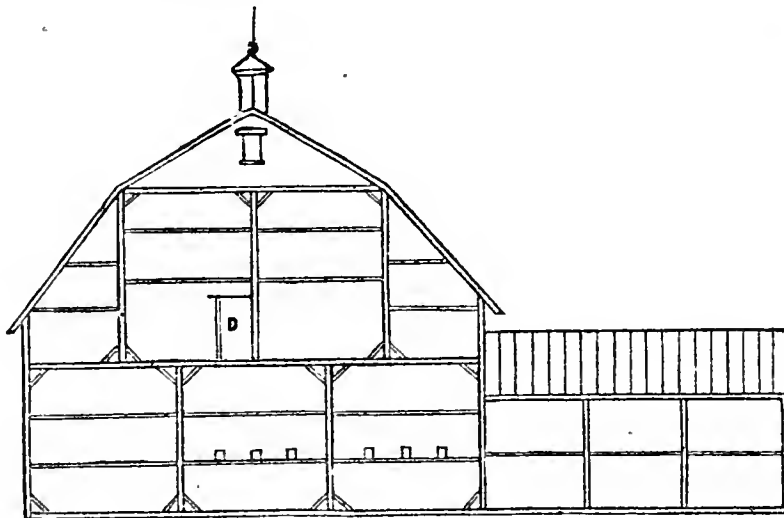


Fig. 4.—End view of Frame. There are no Purline Girths, Beams or Braces, except at the ends, and all open from big beams up for using the Horse-Fork.

The cow shed and stables, which are 22 by 30 feet, have a space overhead for the storage of fodder.

The end-view of the frame, fig. 4, needs but little explanation. There are no purline girths, beams or braces, (except at the ends,) to interfere with the free working of the horse-fork. Although the sills of the horse stable are lower than the others, the plates are on the same level. The ventilator is  $5\frac{1}{2}$  feet square and 7 feet high, with blinds.

A corn and wagon house is adjacent, 20 by 24 feet, with grain bins overhead, and places for the storage of corn in the ear on each; the wagon

passage below ; with a hog-pen underneath, in a walled basement seven feet high.

The cost of this barn (which was built several years ago) at the present time would vary much with the price of materials and with various facilities, from \$1,800 to \$2,500.

### A CATTLE BARN.

The accompanying design is of a barn on a farm devoted chiefly to the sale of milk, and to the dairy. The plans are taken from the barn of James Wood of Westchester Co., N. Y. The perspective view is varied somewhat from the original. The main building is 30 by 75 feet.

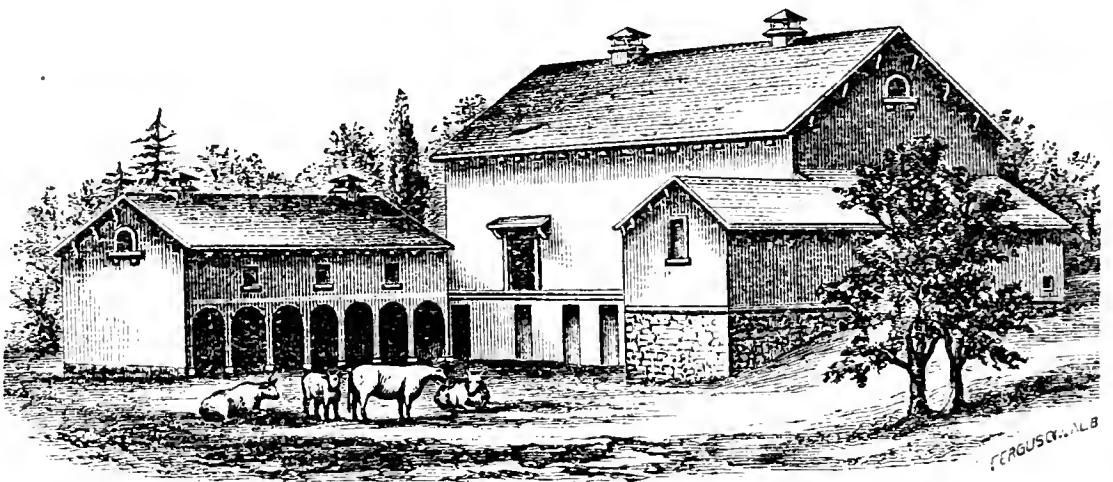


Fig. 5.—View of Cattle Barn from the Southeast.

The plans furnish nearly their own explanation. The basement is placed beneath the surface on the west, north and east sides, and, fronting the south, affords a warm aspect for the animals in the yard. The basement walls are of stone, the rest of the building wood. The cow stables in the basement are under the right hand floor above ; those above are in a separate lean-to, built at the east end, with room for storing straw overhead, easily accessible from the threshing floor. The cows in the upper stable stand in yokes, three feet being allowed to each, and they face the barn floor from which they are fed—"the same arrangement," writes the owner, "as Whittier describes in his *Snow Bound*—

"Impatient down the stanchion rows  
The cattle shake their walnut bows."

In the basement the cows are chained and separated by short partitions, and are fed from the passage-way in front of them. Chains are regarded as preferable to stanchions, being nearly as convenient, and allowing the animal greater freedom of head, so that she can lick herself, &c. The loose boxes for cows in the basement, are  $5\frac{1}{2}$  by 11 feet including manger. The horse-stalls are five feet wide. The shoot S, (fig. 6,) on the right hand floor, is for throwing hay down to the feeding apartment below, and the

shoot S on the left floor is for roots to the turnip bin. T is a trap door for passing oats down to the bin under the stairs, and at the corner of the

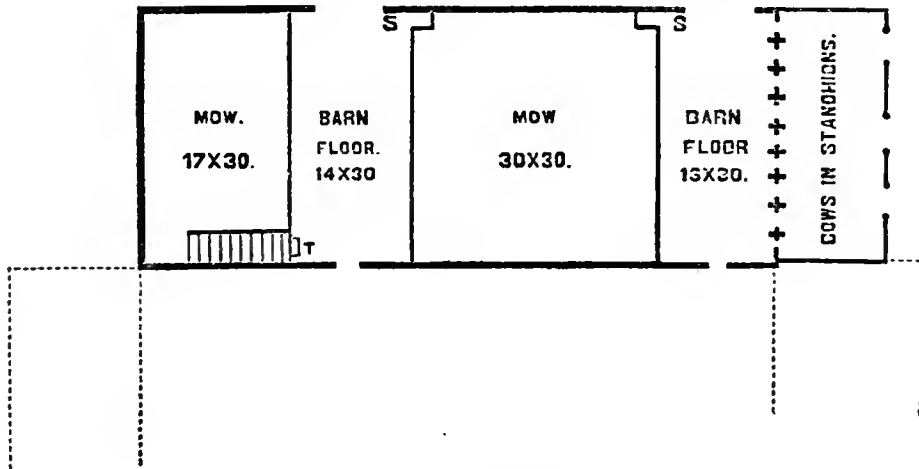


Fig. 6.—Upper Floors.

horse stable, from which they are easily conveyed to the animals in front. The root cellar is filled from the outside. Over each end of both barn floors are ample platforms for storing unthreshed grain and straw. The barn floors are entered from the ground at the north side or rear, where it is nearly level with these floors.

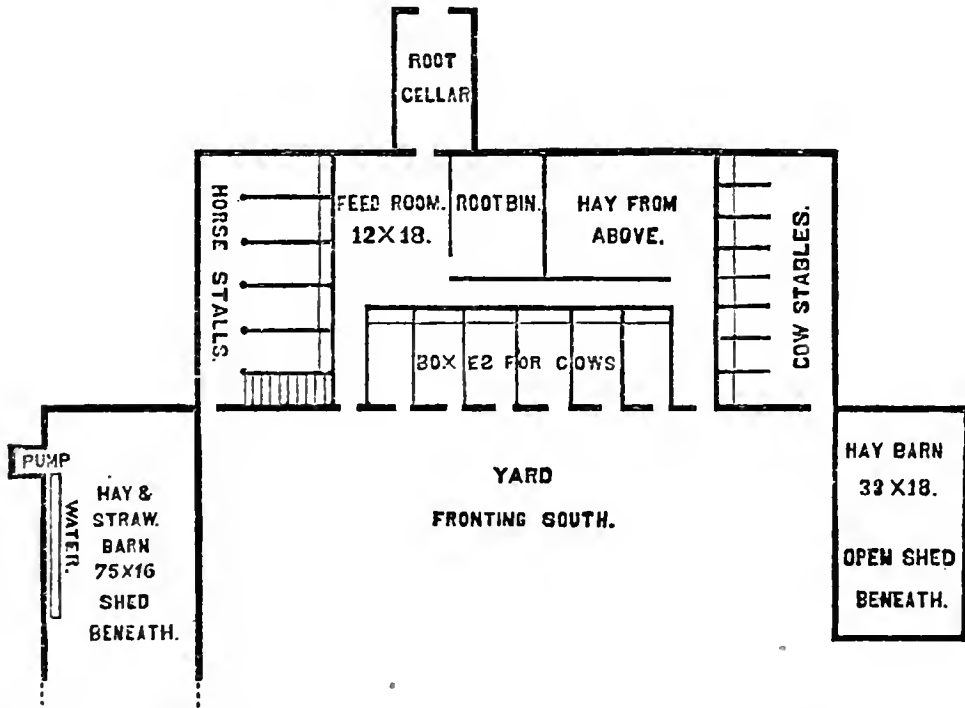


Fig. 7.—Basement and Stables—three sides with Stone Walls under ground.

The following is a more particular description of the fastenings in the cattle stalls, where the stanchions are used in this barn, furnished by the owner :

The posts are securely fastened to the timbers below and above, (fig. 8.) The two inch plank *a. a.* is a foot wide, with the edge to the floor, and fastened

to posts, one on each side, with space of  $2\frac{1}{2}$  inches between ;  $a' a'$  are similar planks, though narrower, which run above, with same space between ;  $b. b. b.$  are the stanchions, of oak,  $2\frac{1}{2}$  by 3 inches, working between the

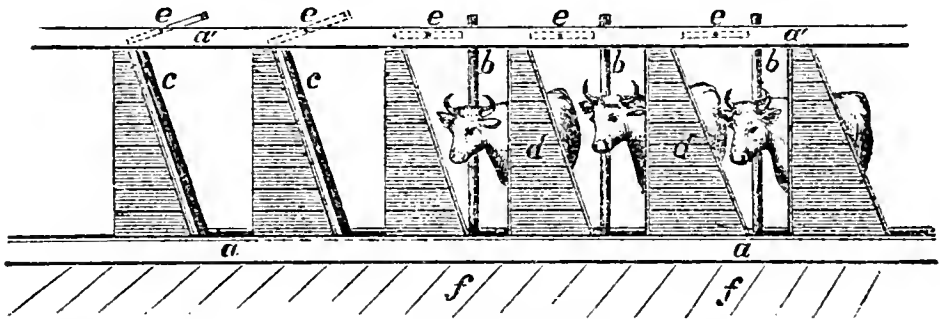


Fig. 8.—Stanchions for Cows— $a. a.$ , Plank with its edge on the Floor— $a' a'$ , Plank overhead— $b. b.$ , Stanchions— $c. c.$ , Stanchions thrown back to let the cows enter— $f. f.$ , Floor.

planks above and below, and turning upon a pin below. When thrown back as  $c.$ , they leave a wide space for the cattle to put their heads through, or back out, usually about two feet open at top. When closed, as  $b.$ , they leave a space of  $6\frac{1}{2}$  or 7 inches for the animal's neck. They are fastened in place ( $b.$ ) by keys,  $e. e. e.$ , which work upon pins between the upper planks, and fall behind  $b.$  when in place. To unfasten the animal this is raised, and  $b.$  falls back under it, as  $c. c.$ ;  $d. d.$  are the spaces between the upright, stationary against the animal's neck, (which should be  $2\frac{1}{2}$  by 3 inches, oak,) on one side, and the open stanchion on the other;  $f. f.$  is the floor in front of the animals, upon which they are fed. Sometimes it is left open between the animals, but it is usually better to have a narrow board partition to separate their heads, to prevent their reaching after each other's food. Sometimes separate mangers are built in front to place each animal's hay and other feed in; but this increases the expense and is inconvenient in feeding cornstalks and other coarse food;  $a' a'$  should be about 4 feet 6 inches high from the floor. For cows from 3 to  $3\frac{1}{2}$  feet should be allowed to each.

The spaces  $d. d.$  should be boarded up to prevent the animals working the hay through under their feet, but they are often left open.

By this arrangement a large number of cattle can be conveniently and quickly fed, requiring less labor and time than when in separate stalls. A little attention is required to place the food within their reach when pushed too far away.

The cattle should stand upon a floor, with trough for manure behind. For cows this floor should be 4 feet 6 inches in width. Then their droppings will fall directly into the trough behind them, and they will lie upon the floor in cleanliness. The stanchions do not permit the animal to move backward or forward more than the length of neck, and thus the droppings fall in one place. The manure is easily removed, and the stables kept in order, and a greater number of cattle taken care of by a given amount of labor than in any other way. The animal has entire

freedom of head for vertical motion ; and, where cattle are turned out a portion of each day this mode of fastening answers well, but where they are kept up all the time chains are preferable, giving the animals more liberty of movement, allowing them to lick themselves anywhere.

Fastening with chains is a simple operation. An upright, (fig. 9,) a post or a long staple in a post, (fig. 10,) by the side of the animal's neck, holds a large ring at the end of the chain ; the ring sliding up or down, gives free vertical motion. At the other end of the chain is a spring snap, which fastens into a small ring in the chain where the snap reaches when the chain is loosely around the animal's neck, (fig. 10.) A pin in the upright to hang the ring on when not in use, is a convenience. A foot of chain between the neck and post is ample.

In chain fastenings there should be a partition between the animals, running back at least two feet from the heads, to separate them when feeding.

Fig. 9.

Fig. 10.

The preceding modes of securing cattle by stanchions and by chains are familiar to many ; but it often happens that they are not well under-



Fig. 11.

stood by others, and imperfect, inconvenient, or awkward styles of construction are employed, and these may assist in making some improvement.

### CARRIAGE AND HORSE BARN.

The accompanying view and plan represent the barn recently erected by A. B. Allen, Esq., of Tom's River, New-Jersey, and were kindly furnished by him at our request. It will be readily understood that this is not intended as a general farm barn, but for one, as Mr. Allen remarks, " who wants to

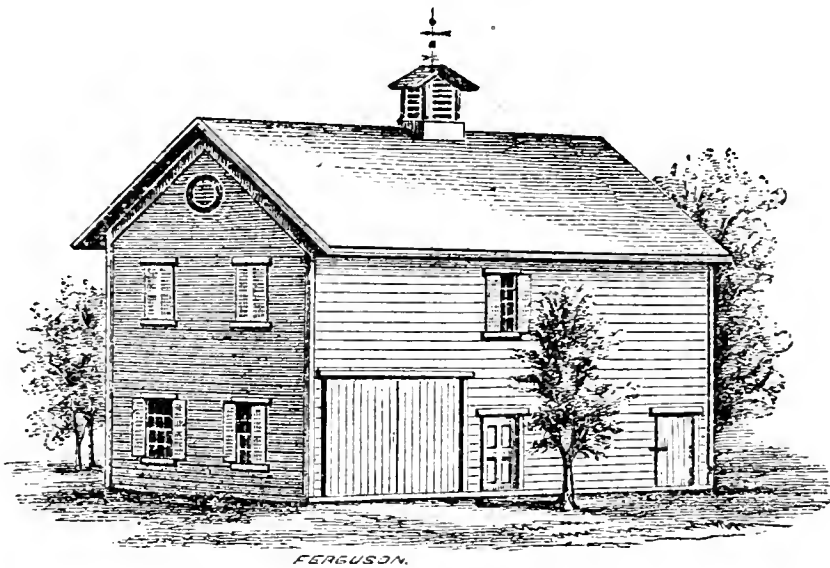


Fig. 12.—Carriage-House and Barn.

keep from four to eight animals, and house four to six carriages or wagons.” He adds, “The great fault in stables is not depth enough from the mangers behind the horses to the walls. There ought to be room enough here to hang up rough, common harness, and lead the animals out by each other, and also to back them out easily from their stalls and turn in leading them out. In my plan there is not an inch to spare for this ; and if I build another, I think I would make it one or two feet more, although this does well. Many stables are two feet less than mine. I find constant mistakes and inconveniences wherever I go, that might have been avoided as well as not. A neighbor has just completed stables with no good ventilation, although I took him to see mine (which are admirably ventilated) before he commenced building.”

In the plan, (which is 21 by 36 feet, and with 18 feet posts,) *e.* is the cow stable, with stanchion ; *d. d. d.*, horse stalls  $4\frac{1}{2}$  feet wide—in the rear of each of which is a one-pane sliding window to light and air the stable—the light coming from *behind* the animals, as it always should. The smaller doors, *h. h.*, are  $3\frac{1}{2}$  feet wide ; and the two inner ones, *f.* and *g.*, are 3 feet wide, through which the horse is readily taken from the stall to the coach room and harnessed. Either of the larger doors may be then rolled back and the carriage driven out, the whole work being completely done indoors, and protected from the weather. All the doors are hung on iron rollers overhead, which run on iron rails. They can be thus opened from a hair’s breadth to the full width as desired, and they

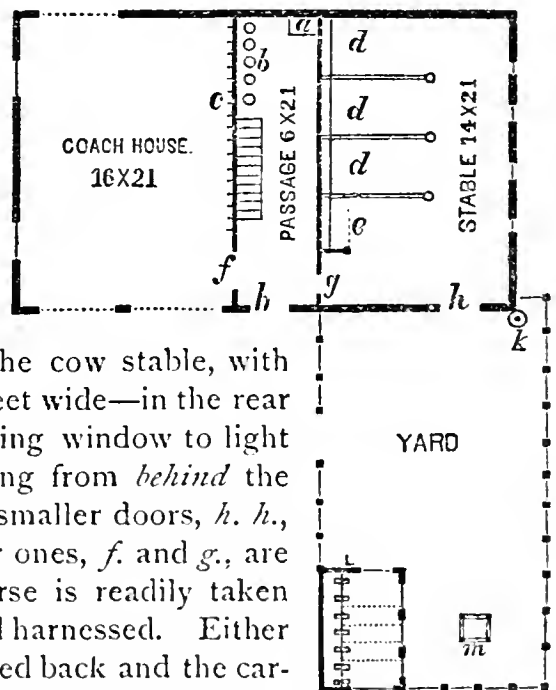


Fig. 13.—Plan of Barn and Yard.



cannot be blown about by the winds. The two large carriage doors in front slide past each other. With this arrangement any carriage wanted can be run out without moving another. Four carriages can stand in this space, with plenty of room for harness, &c. The pins for hanging up harness, are shown at *c*. In the rear of the stairs in the passage are bins or barrels for meal and grain; *a*. is a vertical box  $2\frac{1}{2}$  by 3 feet, of inch matched boards, which comes down within four feet of the floor, and runs up three feet above the floor in the second story, to receive the hay thrown down for the horses. The dust and seed are thus kept from scattering about.

The windows are of two sash, each with six lights, or twelve lights for each window, 10 by 12 glass. If the upper story should be filled wholly with hay, the windows would not be needed there—or should have bars inside to protect them until the hay is thrown out. The upper window at the side is to lighten the stairway, passage, &c.

The floor of the first story is two inch plank. The partitions of the horse stalls are one and a half inch oak plank, *planed smooth*. The mangers are of the same oak plank. The coach-room partition is inch pine matched boards, shutting out all stable odors from the carriages and harness. The floor of the second story is made of matched inch boards, laid as close as in a house—keeping the dust from sifting down on the carriages. Small doors are placed at suitable points to pitch in the hay, not visible in the view, being on the back side.

The stanchion is preferred for the cow stall. Her position is regarded as comfortable as if tied up, and she cannot step into her droppings—her udder and haunches are thus kept clean. She can be turned out every day for some hours into the well protected yard, and exercise and rub herself against a post to her heart's content.

The ventilator is exactly over the centre of the building.

The yard is surrounded by a high and tight board fence. The poultry house, *L*., is cheaply made by using the yard fence for the south and west sides. On the west side is a double row of nest boxes. The cistern, with non-freezing pump, is at *k*., and a box hay rack at *m*.

This view of the building is taken from the south side, and the gable, showing the four windows, faces the west.

This plan may be enlarged for more animals or carriages, as the builder may desire.

### CORN-HOUSE AND SHOP.

The accompanying plan was prepared for the COUNTRY GENTLEMAN in response to an inquiry as regards the arrangement of a corn-crib, with a work-shop above, intended for a farm of moderate size. To secure accommodations suited to a large farm, the arrangement proposed would necessarily be different. Fig. 14 is a perspective view—the building being made of as light frame as will accord with sufficient strength, and placed on short durable posts, for the purpose of excluding rats. These posts, which

should be round, and of some durable timber, should be four feet or more in length, and be set at least two feet into the ground, and stand nearly two feet above. Each one should stand on a flat stone at the bottom, and

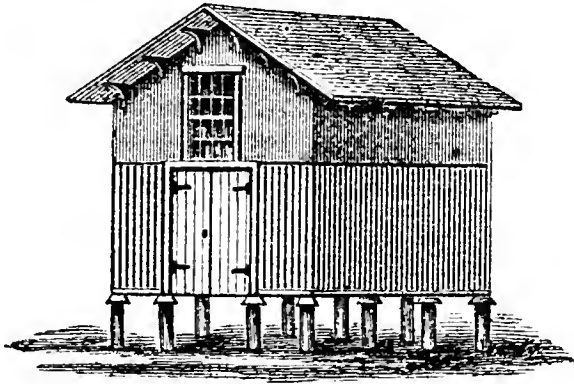


Fig. 14.—*Corn-House with Shop above.*

gravel or fine broken stone rammed very compactly about them. If the ground has not a perfect natural drainage, drains should be cut so as to carry off all the surplus water very promptly, as the building will not only stand better on hard well-drained soil, but the posts will last much longer. The posts are cased with tin, and an inverted tin pan placed on the top of each. The wire rim must be cut off from these pans, to prevent the rats leaping and clinging to them.

The doors at each end admit the entrance of a wagon, and in a great measure exclude rain and snow, although not perfectly, as the whole stands on posts. A cross-bar may be used for securing them. The floor of the driveway may be of gravel, flagging, or in the absence of these, of plank, like a plank road. On this the farm wagon may stand when not in use; and this floor will also be convenient for the shelling of corn with a hand machine on rainy days—a small opening being made to withdraw the ears. When the cribs are to be filled, the wagon is driven about half-way in, the large sliding window opened, and the corn thrown on the shop floor above with a scoop shovel. From this floor it is easily shoved into the two cribs through trap doors.

In the elevation, fig. 15, the dotted lines above show the places of the two portions of the window, when slid open. The dotted lines below show the slanting sides of the cribs inside. There is no absolute necessity for this, and none at all for slanting sides without, especially with broad projecting eaves. The stairs to the shop above may occupy the further end of one of the cribs, and a movable step be placed at the bottom.

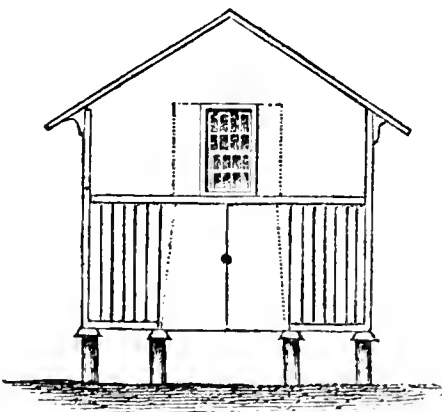


Fig. 15.—*Elevation and Section.*

When more room for corn is needed, it may be provided at the expense of shop room, by running cribs up to the roof—a second shoveling from the shop floor being required for filling the part above this floor.

A modification of this design, for a smaller building, and possessing some advantages, is made by omitting the wagon drive, and throwing the corn from the wagon, which is driven across the end of the building.

Instead of a wagon-way is an alley four feet wide between the two cribs, furnished with a floor, and with stairs at the farther end. A single door enters this alley in place of the double door in the view, fig. 14; and a plank with slats for steps is readily placed in position for going in and out, and removed when not in use, to prevent the ingress of rats.

A good, neat and moderately cheap corn-house may be built like this,

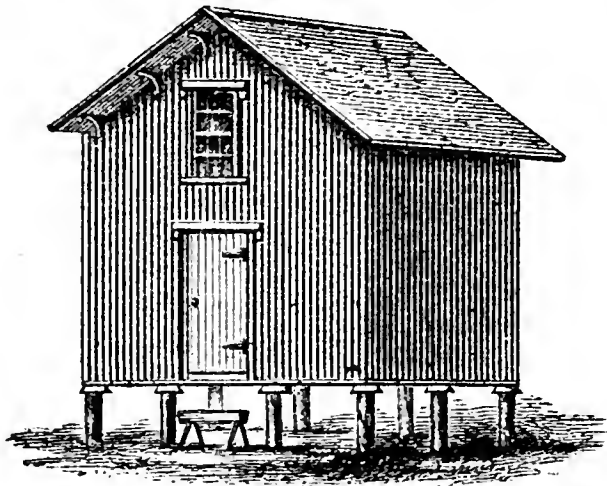


Fig. 16.—View of Small Corn-House.

twelve feet square, with twelve feet posts above the short posts, the lower part seven feet from the floor, leaving four and a half feet above at the eaves, and eight feet at the middle, with one-third pitch to the roof. The cribs will be four feet wide on each side, and the alleys, both above and below, four feet wide, which will be sufficient for filling the cribs, shelling and doing some other kinds of indoor work, besides

room for smaller tools if kept neatly hung in their places. Or, the whole of the upper part may be devoted to a work and tool-shop. Fig. 16 is a perspective view of this building, with movable steps under the door, and fig. 17 a plan of the same. Such a building will hold about 500 bushels of ears up to the second floor, and 900 if filled to the roof.

Sometimes such a floor is made for the larger plan, a movable plank bridge being provided to drive the loaded wagon up. But to be strong enough, this bridge is too heavy to be easily handled, and heavier timbers are required for the floor.

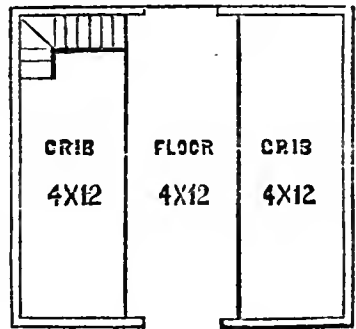


Fig. 17.—Plan.

The better way, where a large building is needed, is to place it on a smooth stone underpinning three feet above the ground, with an earth roadway for entering. Make the floor tight with two-inch plank, and let everything else be made substantially and fitting closely, and rats will find it difficult to get possession. They will not like to climb up a smooth wall and do the gnawing from the outside. The general arrangement may be the same as that already described, but on a larger scale.



It is most convenient to place the slats which form the inside walls of the cribs in a horizontal position, and put them in as the cribs are filled. This will enable the workmen to fill a large part of those shown in figs. 14 and 15, from the wagon way inside the building. In order to place and take out readily these horizontal

pieces, a part of the studs or supports which hold them should have cuts made in their faces, as shown in fig. 18, to receive the slats or rails, the pressure of the corn holding them in their places, or a very slight tack of a nail will secure them perfectly.

### THREE DESIGNS FOR BARN.

A correspondent lately applied to us for plans on which to construct "a stable 35 by 25 feet, containing stalls for four horses and two cows, carriage house, harness room, &c., to be built on the slope of a hill which will permit a cellar at small cost; loft to hold six or seven tons of hay—also estimate of cost where rough boards and battens are used." As there are many inquiries of the kind, we have given some attention to the wants expressed, and present below different designs, each possessing some peculiar merit.

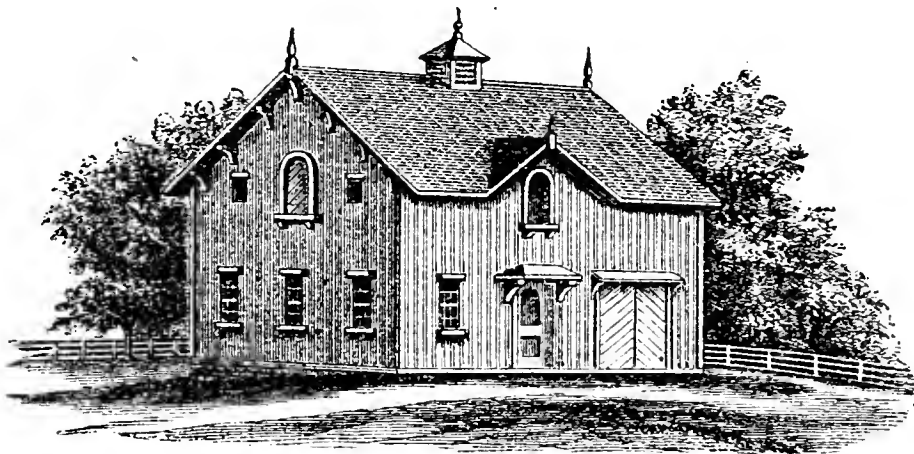


Fig. 19.—Carriage and Horse Barn.

Fig. 19 is a view of a carriage and horse barn, built of wood, with rough vertical and battened boards, but designed with a view to symmetry and ornamental exterior. It is 25 by 35 feet. Fig. 20 is the plan. The carriage room is 15 by 25 feet, which admits

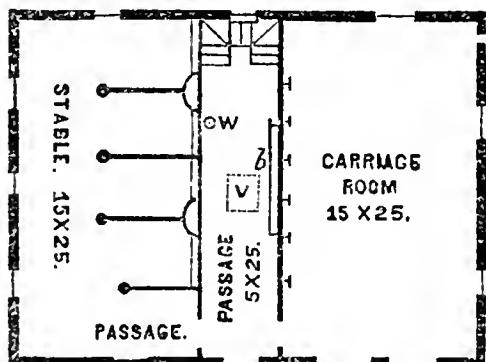


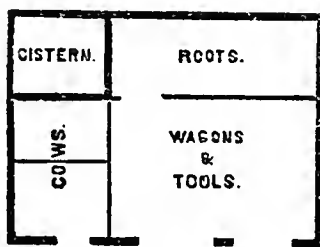
Fig. 20.

two carriages to stand side by side, with ample room to pass around them, and four can be placed within it without inconvenience. This apartment is separated from the stable by a matched board partition, with a door between them, which should be kept shut, so as to exclude any odor from the stable from entering the carriage room, which has a tendency to corrode the varnish. Pins for harness are placed in this partition, obviating the necessity of a separate harness room, there being ample space in this apartment between the carriages and the wall. Over each pin should be painted or printed the name of each harness, so that every one may be always hung in its

appropriate place, preventing confusion, and enabling the attendant to find readily the harness he wants.

The horse stable is 15 by 25 feet, giving space for four stalls, each 5 feet wide and 15 feet long, which is the shortest length admissible with free passage around the rear of the horses for leading them out, removing manure, &c. The light being admitted behind them, the animals' eyes are not injured by light, as they would be if their faces were in front of the openings, and the ventilation from without is more perfect. The mangers are only breast high, admitting free circulation of the air between stalls and passage. The arrangement is such that any horse can be taken from the carriage room to the stable, or the reverse, with only a few steps, and all within doors, so that there is no exposure in time of rain or snow storms. A pump at *w.*, from the rain water cistern below, is convenient for watering. The place of the ventilator is shown by the dotted lines at *v.* It reaches down to the floor above, and passes up through the roof. It has a large board valve near the top, which may be opened or closed at pleasure by means of a rod extending down within reach. This ventilator is simply a square board box or tube, two feet or more square, allowing the immediate escape of all bad odors from the stable, and preventing the diseases so common in horses that have to breathe rank exhalations. In the side of this ventilator, in the hay loft, is one or more large board doors, hung above and swinging inwards, through which the hay is thrust for the horses below. As soon as the forkful has dropped, the door falls shut, and excludes any possible vapors from the stable from entering the loft. The stairs at the end of the passage are boarded up, and a door shuts the passage between the stable and stored hay. Under the higher part of the stairs, is a closet for brushes, curry comb, soap, oils, &c.; and *b.* is a bin for horse-feed.

Fig. 21 shows a proposed plan of the basement, which may be varied



with circumstances. Loose boxes or pens are intended for the cows, which, if well littered and kept clean, give more comfortable quarters than small stalls with chains or stanchions. The cistern and roots are in the most sheltered part of the basement. The roots should be kept covered above with two or three feet of straw, to prevent freezing, and

the cistern should be similarly protected with six or eight inches of chaff or sawdust, in the space between the board coverings. The pump should be one of those especially intended for cisterns, and so constructed that the water will sink after using, and prevent freezing.

Cisterns are commonly made much too small for the roofs that feed them. With three feet of annual rain-fall a roof the size of the barn we have described, would yield over six hundred barrels of water a year, and the cistern should hold enough to last three months, or at least one hundred and fifty barrels—which would require one nine feet square and six feet

deep, or of equivalent dimensions. It is hardly necessary for us to remark that the inner walls of such a cistern as this, to be strong enough to withstand the pressure of the water, should be at least two feet thick, of heavy block stone.

The lower or main story of this barn should be about nine feet high in the clear. With a good ventilator, this is better than twelve feet without a ventilator. With fourteen feet posts, we should have a hay-loft over four feet high at the eaves, and with one-third pitch of the roof; there would be space in the loft (allowing more than a foot vacancy under the roof,) of about six thousand cubic feet—which would hold from eight to ten tons of hay where, as here, it could not settle as in a deep bay.

In the view, fig. 19, the lower or descending ground is seen in the rear. If the ground is not high enough at the end to pitch the hay into the loft through the large upper door, it may be put through the door under the small gable at the side.

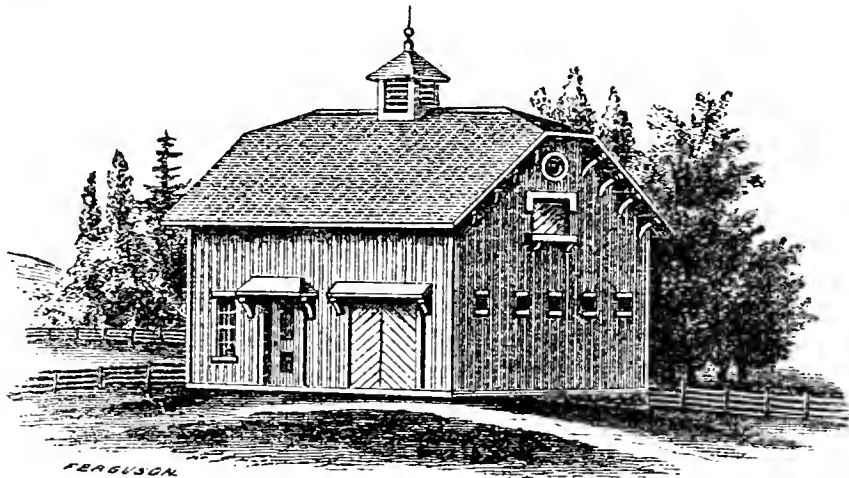


Fig. 22.—View of Carriage and Horse Barn.

Fig. 22 is a view of a modification of this barn, so arranged that it may be made 5 feet shorter, the dimensions being 25 by 30 feet. Fig. 23 is

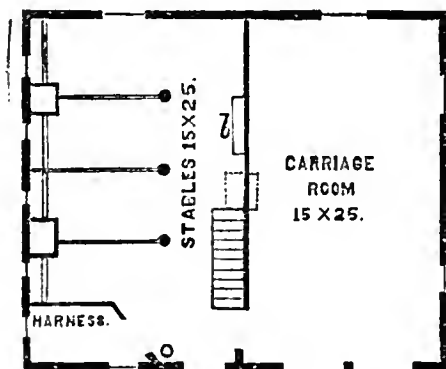


Fig. 23.—Plan.

the plan. The horses' heads are placed towards the outer wall, each stall being lighted by a large single pane window. In order to exclude the light from the horses' eyes, these windows are set seven or eight feet high; and immediately under them on the inside, is a narrow plank hood or shelf, entirely covering the light at the animals' heads. The hay is thrown down from above through the square boxes, from which the horses obtain their supply through the side openings at the bottom. A separate harness room is provided. Pins may be placed in the partition in the carriage apartment, in addition, if desired, as described in the preceding design. The rest of the plan explains itself.

The plan of a third design is shown in fig. 24, the object being to place both cattle and horses above. The dimensions are like those of the first plan,

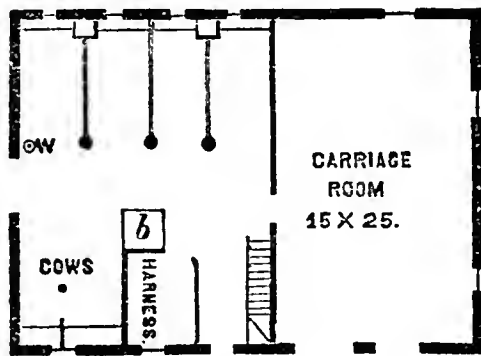


Fig. 24.

25 by 35 feet. There are four horse stalls, each 5 feet wide, and two cow stalls, each 4 feet, with a post between. The ample width of the passage between them, prevents danger of the horses kicking the cows—especially if the more quiet animals are placed opposite. The harness room is 5 by 8 feet. A small entrance door is needed at the side, the animals being led out at the end; and a door in the elose partition between stable

and carriage house, admits ready passage from one to the other. A large box or bin for feed is shown at *b*.

The cost of such barns will depend greatly on the price of materials and labor where they are erected, and the degree of finish given them, from \$800 to \$1500. White oak plank, planed and matched, for the divisions of the stalls and for the floors, will be better than hemlock or pine, but cost more. Good pine siding will be better, but more expensive, than hemlock. The painting may be cheap or costly. We have painted similar buildings at a moderate expense, and in a perfect and durable manner, as follows: First apply with a whitewash brush a heavy coat of crude light petroleum. After a month or two paint the whole with a good coating of Averill paint, which is one of the best and cheapest paints we have tried. Two barrels of petroleum would go over one of these barns, roof and all; and \$30 worth of Averill paint, more or less, complete the job.

AMPLE VERANDAHS.—Woodward's little work on Country Homes remarks: The place designed simply for a summer residence for the citizen who is obliged to be at his office or counting room daily, bating the few weeks of summer vacation, need not be so complete in its appointments and arrangements as the permanent country residence. One essential condition, however, in this case is, that there shall be *room enough*, with ample verandahs, and shaded gravel walks, which will afford opportunities for open air exercise in all states of the weather. There is nothing, perhaps, that interferes so essentially with the citizen's enjoyment of the country, as the want of facilities for out-door exercise. It is too hot or too dusty to ride or walk before the shower, and after its refreshment has come it is too wet and muddy. Spacious verandahs, shaded with vines and well made walks, always firm and dry, bordered with shrubbery, or overhung with trees, will give us "ample scope and verge enough."



## CULTURE OF THE CARROT.

**T**HE VALUE OF THE CARROT for the winter feeding of horses, and for the increase in the flow and richness of the milk of cows, renders it important to reach the easiest mode of raising it. We sometimes see bad managers obtain the roots at a cost of a dollar a bushel, while the actual cost need not be a tenth part under proper culture.

**SOIL.**—Three requisites are essential—it must be deep, dry and loose. A shallow soil, with a hard-pan immediately below, will never raise good carrots. It will not allow the roots to extend to their full length, and it will fail to furnish the constant and uniform supply of moisture essential to their growth. It must be dry, not holding stagnant water at any time; but while it allows a proper retention of natural moisture, permit all surplus water to flow freely through it, to which end looseness is essential. The best soil is a deep sandy loam—with enough clay in its composition to absorb and retain the enriching portions of manure. A heavy clay soil is unsuitable, but may be much improved by subsoiling and trench plowing, and still more by the addition of a heavy dressing of sand. We have raised heavy crops of carrots on clayey soils, to which a coat of two inches of building sand had been added and worked in. The inversion of a heavy clover crop to the depth of a foot, by means of a large double Michigan plow, makes an excellent preparation for these roots.

**RICHNESS.**—On nearly all soils, the application of a heavy coat of manure is essential to a heavy crop. It will, however, be of little use unless well intermixed. If carelessly spread and plowed under in large lumps, it may do more harm than good. The best way is to work in the manure the previous year, by plowing and harrowing repeatedly, breaking it up thoroughly. Old or rotted manure will intermix best, but fresh manure will answer a good purpose if thoroughly pulverized with the soil. We have met with a few farmers who have found too much manure cause the carrots to run too much to stalks and leaves, at the expense of the roots; but failure is more apt to result from too poor a soil.

**CLEAN LAND ESSENTIAL.**—Failure more commonly results from the overgrowth of weeds than from any other cause. Carrots germinate slowly, and at first are small and delicate. If the soil is full of the seeds



Fig. 25.—Carrots Allowed to be Encumbered by Weeds.

of weeds, they render early cleaning difficult, and smother more or less the young plants. (Figs. 25 and 26.) It is therefore absolutely essential



to have a clean piece of ground. It should be prepared the previous year, working out all the weeds by repeated plowing and harrowing, which may

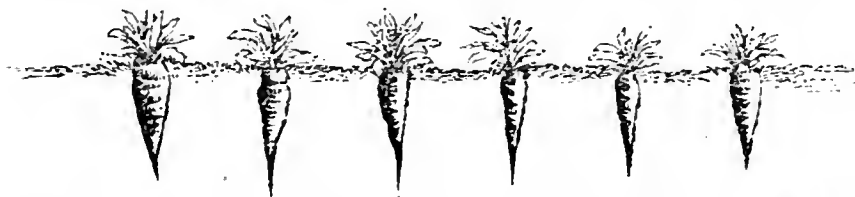


Fig. 26.—Carrot Crop (end view) Kept Clean and Mellow from the first.

be done to advantage at the same time that the manure is worked in. It is better to fallow it one whole summer by horse labor, than to be compelled afterwards to go over the whole field with finger labor, pulling out the weeds. A successful farmer, who often raises a thousand bushels per acre, informs us that he made it a *first requisite* to work out completely all the weeds in his carrot land; and that since he has done so, he thinks, from careful estimate, that not more than *one-eighth* the labor is now required than when he first commenced.

**PLANTING THE SEED.**—As but few cultivators have the weeds totally eradicated, it is desirable to give the young plants as early a start as possible. Germination should therefore be accelerated by steeping in water. The best way is to enclose them in a bag and place them in water for some 24 hours. Then spread them on a shelf or floor, several inches in thickness, where they will continue moist for some days. When just ready to burst, the seed should be planted in freshly worked soil. It may be mixed with several times its bulk of sand, and planted with a drill. If not soaked, it may be well rubbed so as to render the seed smoother, and sown without mixing with sand. Two or three pounds are enough for an acre and a depth of an inch is enough, if the soil is moist.

**THE DRILLS.**—There are two modes of planting—on the flat surface, and on ridges. A convenient distance asunder is twenty-eight inches, and the plants should be thinned out to about three and a half inches in the

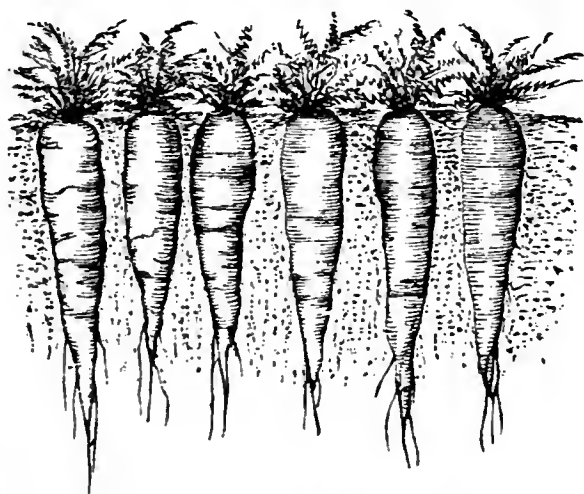


Fig. 27.—Carrots Properly Thinned.

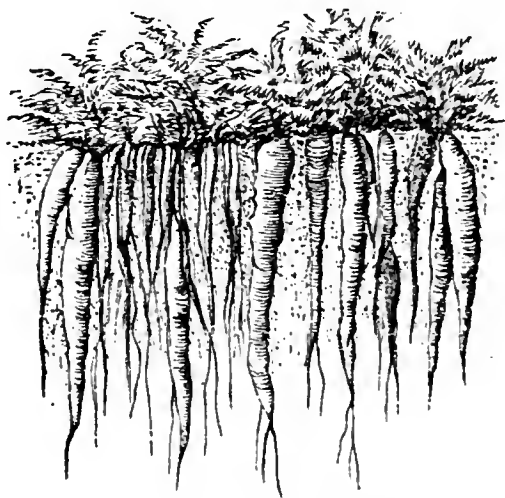


Fig. 28.—Carrots not Thinned.

row. (Fig. 27.) If thicker, they will crowd and reduce each other in size. (Fig. 28.) If more remote, the increase of size will not compensate

for the smaller number. A difference in richness of soil will cause some variation in the best distance, but  $3\frac{1}{2}$  inches is about the average. In our own

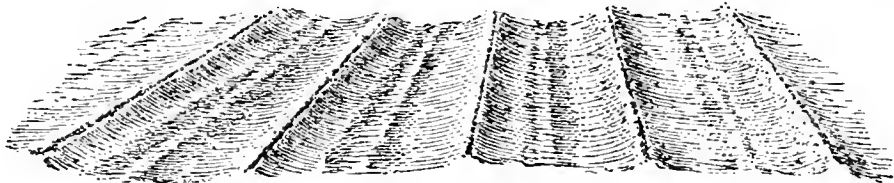


Fig. 29.—Young Carrot Crop just coming up on Ridges.

experience we have effected a saving of labor by planting on small ridges, made by throwing up opposite furrows by a one horse plow, (figs. 29 and 30.) These ridges serve as a guide and protection for the row of young plants



Fig. 30.—Section of Ridges before Cultivating.



Fig. 31.—Section of Ridges after Cultivating.

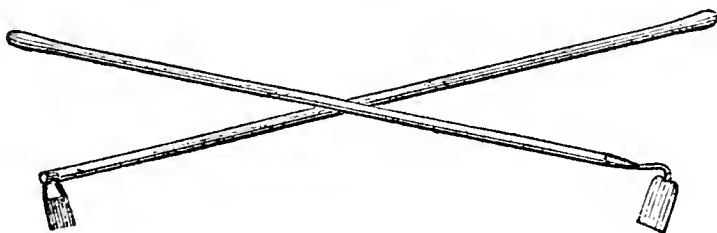


Fig. 32.—Carrot Hoes.

when the harrow is passed the first time, which leaves a narrow ridge about two inches high, (fig. 31,) and this renders the hoeing more easy and rapid. The hoe, having a narrow blade set nearly at right angles, is used both for a thrusting and drawing motion—working with double speed, (fig. 32.) The objection to ridging,

that it makes the soil too dry, does not hold if the soil is deep and loose, and the crop is planted quite early, as it always should be for the purpose of finding a moist soil at the surface.

**CULTIVATION.**—This should be commenced at the very moment the plants appear. If in ridges, there will be no difficulty in seeing where the rows are. The few weeds are more easily destroyed if taken when the first green points appear at the surface, and the carrots are pushed on by the early mellowing of the earth. A narrow harrow with fine teeth, drawn by one horse, is the most useful implement for this purpose. If the weeds are allowed to get a foot high, it will of course be useless—and so will any other implement. A perfectly clean and mellow surface is more important to carrots than to any other farm crop; and if well attended to for a few weeks, the growth will be so rapid as nearly to shade under all weeds afterwards.

**HARVESTING.**—A good mode is to plow away from each row on one side, running as near the roots as possible, and then draw them out by hand. Use a side-hill plow for this purpose, so as to throw the earth always in the same direction, keeping the plowed earth all on one side, and the hard or unplowed portion on the other, for receiving and drawing off the roots. A strong team should be employed, and the plow

run down to a depth of nearly one foot. One man should drive, and the other hold the plow, so that he may keep his eye constantly on the row. Another mode of harvesting, especially where the Long Orange is planted, is first to cut off the tops by means of a common hoe ground as sharp as a knife, and then to run a subsoil plow as deep as practicable close on each side the row, so that the blade may cut under the row. This loosens the roots, and they are readily thrown out by hand.

Carrots may be dug by hand, with considerable expedition, in the following manner: Take a good steel spade and loosen the roots along the first row, and grasping the tops in one hand throw them about three feet back from the row, with the tops towards you, shaking the roots well. Proceed in the same way with the next row, placing the roots on the top of the

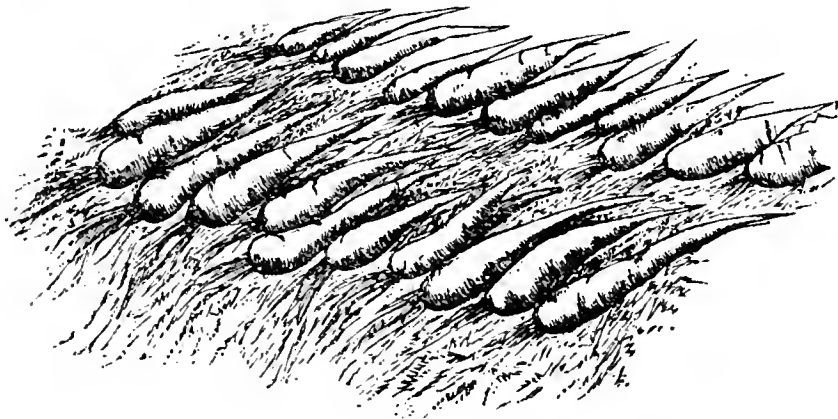


Fig. 33.—*Mode of Drying in the Sun at Harvesting—Roots up, Tops down.*

previous row, (fig. 33.) Proceed in this way until as many are thrown out as can be secured the same day. The tops on which each row rests, keep them from the ground, and they dry rapidly; and the dirt is easily removed and the tops readily cut. This mode of drying is adapted to harvesting with the plow.

**KEEPING IN WINTER.**—A cellar is most convenient. But if there is none, dig a shallow trench of any desired length, about 3 feet wide and 8 or 10 inches deep, where there is a perfect underdrainage. Place the roots here, heaping them up evenly, like a two sided steep roof. Cover them thickly with straw, so that when packed it may be nine inches to a foot

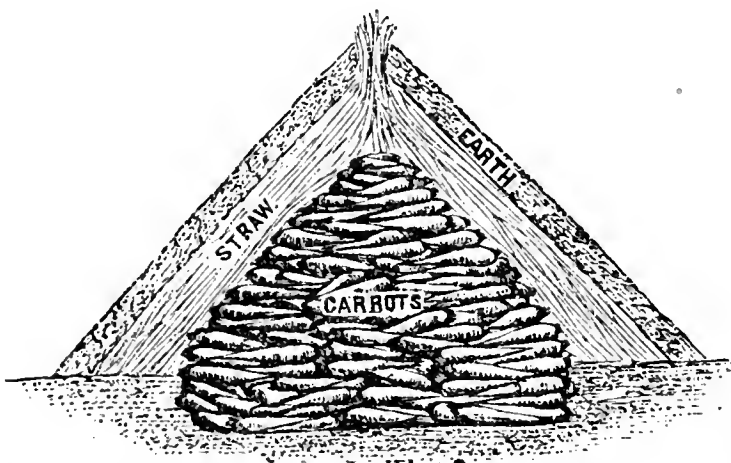


Fig. 34.—*Cross Section of Carrot Heap.*

thick, according to the latitude and winters. Cover this with three or four inches of earth beaten smooth. (Fig. 34.) The carrots will keep

much better with plenty of straw and but little earth, than under more earth and less straw. Make air-holes with a crow-bar for each four or five feet of length, and when winter comes, plug these with straw wisps.

A cellar is more convenient, accessible in winter, and attended with less labor. A house cellar is usually too warm, and if kept as neat as every good farmer wishes, ought not to be encumbered with cattle feed. Every barn should have a cellar under it; the sills will be more durable, and the only cost is excavation and walls. A cellar large enough to hold five thousand bushels, need not cost over \$200 to dig and build walls—or at the rate of four cents per bushel once for all time. Filled with roots it would supply sixty cattle for five months with a peck each night and morning. Such a supply, in connection with dry fodder, would contribute greatly to their health and thrift. The bottom should be paved and covered with water-lime cement, so that the earth which drops from the roots may be easily and neatly swept out. A root cellar should be kept in perfect order, and no filth or decaying vegetables ever allowed in it a day. It should have windows on opposite sides, and free ventilation allowed whenever the weather will admit. If the thermometer is not much below freezing, let the wind blow through, and lessen the current as

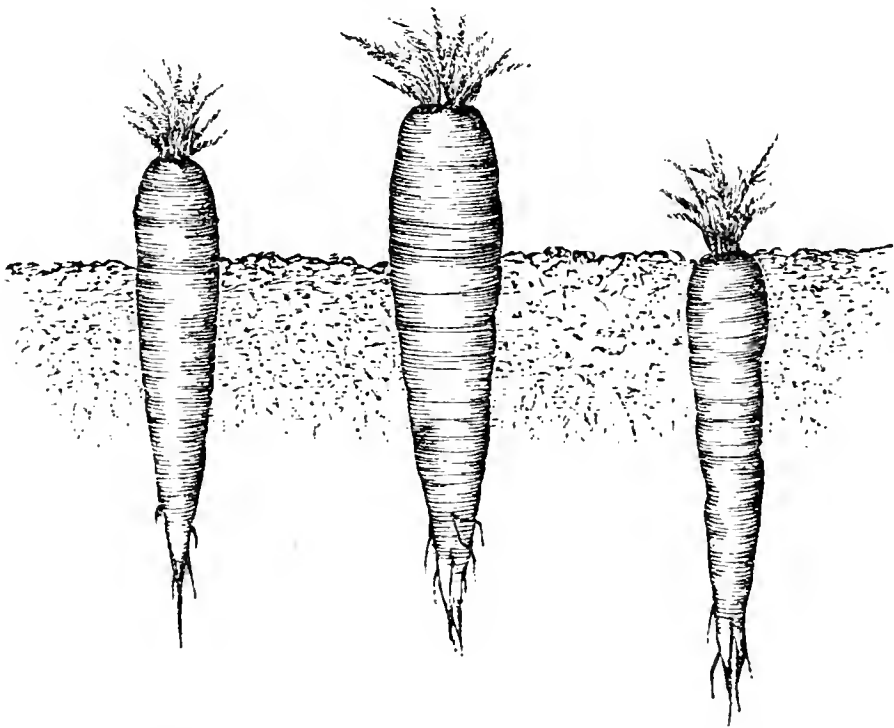


Fig. 35.  
*Altringham.*

Fig. 36.  
*White Belgian.*

Fig. 37.  
*Long Orange.*

the frost increases. The more uniformly cool the roots are kept, the better and fresher will be their condition. Many would be surprised at the amount of air which might be admitted with safety. If the tight plank floor above is insufficient to exclude frost during the severest weather, a foot of straw over the tops of the roots will be an additional protection.

When barn cellars are large, and hold many thousand bushels of roots,

the ventilation will be imperfect unless a sparred floor is made a few inches above the cement bottom. It may be made of scantling of any convenient size, with inch spans between. The passages between the bins for receiving the roots should be in the direction of the prevailing winds, so as to effect a free circulation; the wind being made to blow under the sparred floor. Without free ventilation, both the roots and the timbers of the barn will decay.

VARIETIES.—Formerly the Long Orange (fig. 37) was chiefly planted for field crops, and is still an excellent sort. As the root is wholly in the soil, it is less affected by late autumn frosts than some others, and may be left later before harvesting. The White Belgian (fig. 36) is very large, and projecting several inches out of the ground, is rapidly harvested. It is one of the best varieties for general farm crops. The White Altringham (fig. 35) is similar but not so large. The Yellow Belgian is preferred by some on account of its color.

## RAISING AND CURING CORN FODDER.

RAISING CORN thickly in drills or broadcast for fodder exclusively, is becoming more common, and is found to possess some important advantages. Among these are, the large quantity of fodder for soiling or for winter food which may be thus raised on a given piece of land; equalizing farm labor by sowing the fodder after the season of common corn planting, and harvesting it after common grain harvests; and the ease which it affords for extirpating weeds and leaving a clean surface. The crop may be often sown to advantage on spare pieces of land, which the owner has either not had time to prepare for a spring crop, or which may have been unsuitable for spring working.

Three different modes have been adopted for sowing the seed. When raising this crop was first introduced, sowing the seed broadcast at the rate of about four bushels per acre, and harrowing in, was the most common. But it had two objections. As it could not be cultivated, it grew with less vigor and yielded a smaller crop than when raised in drills and worked with a horse. For the same reason the field was not left clean, but was more or less encumbered with weeds, (fig. 38.) It was therefore found best to sow in drills, which may be kept clean and compact, (fig. 39,) a practice which the writer has pursued for about twenty-five years with advantage and success. The best way is first to plow and harrow the ground, as for planting potatoes or corn. Then furrow it out



Fig. 39.



Fig. 38.

with a plow and one horse, so that the furrows will be about three feet apart. The nearer they are together, provided room is allowed for the passage of horse and cultivator, the larger will be the crop. Next take a basket with a convenient bow handle, and holding about half a bushel, and from this proceed to sow the corn along the furrows by scattering it from the basket with the right hand while the basket is held by the left, or on the left arm. Any one will soon learn to do it evenly, and as fast as a man will walk. It is well for a new hand to measure a foot in length, and to count the grains, in order to determine the right quantity of seed. There should not be much less than forty grains to the foot, which will be about two and a half to three bushels to the acre, of the smaller northern varieties. If only fifteen or twenty grains to the foot, there will be only about two-thirds as much fodder per acre, and it will be coarser and be less liable to be all eaten by cattle. The thinner it is, however, the taller it will grow, and appear larger and heavier to a novice, who will at once pronounce it the best crop. The writer has tried the experiment fully by weighing the product, and finds the thickly sown corn, however short and insignificant it may appear, to yield much the heaviest.

As fast as the corn is sown it is readily covered by running a common harrow or a one-horse cultivator along the furrows, which is all that is needed.

After the corn is up, all the working required is to pass the cultivator between the rows two or three times till the crop is too large to admit it. The dense growth of the corn in the rows will shade and kill all the smaller weeds. When, therefore, the crop is harvested, the ground will be left nearly as clean as a floor. In this way the crop becomes one of the best to clean foul land; and waste pieces not in good order may thus be brought to a clean, mellow condition for crops that are to follow.

Sown corn-fodder has one great advantage over the common crop when grain is the principal object. If sown thick enough, it will bear no ears, except small ones without seed. It will consequently exhaust the land far less than the grain-producing crop, and hence also be better to precede in a rotation any that is to follow. We have taken four crops of densely sown corn-fodder, in as many years, from one piece of ground, and each succeeding crop was larger than its predecessor, which is ascribed to the fact that large quantities of roots are left in the soil, and only stalks and foliage removed.

The fodder should be cut as soon as the edges of the leaves begin to wither. Several different modes of harvesting and stacking have been adopted, with various different degrees of failure or success. When the quantity is small, it may be cut with a common hand corn cutter, bound into bundles, and placed in large, erect shocks, to stand until winter, till wanted—or if there is room in the loft of a shed, or on a bay of hay, it will dry perfectly. As this kind of fodder is finer and softer than common cornstalks from which ears have been husked, it lies more compactly, and admits but little air among its mass—and hence is more likely to heat or

ferment. For this reason it must never be placed in large masses or in large stacks, else it will soon spoil, no matter how well it may have been dried in the field. We have seen fodder that had been exposed several weeks in shocks in favorable weather, and apparently quite dry, become strongly heated in three days after being stacked, sending up hot steam rapidly from the top, so that the whole had to be taken down immediately to prevent ruin.

Fields that contain several acres cannot be profitably cut by a hand-cutter. A common hay scythe may be employed, and by a little practice the operator will learn to strike the rows in such a manner as to throw the tops uniformly in one direction, like cradling. It may then be raked up and bound by hand, and put in shocks, as already stated. A good vertical-toothed horse rake may be employed to gather it, if carefully run exactly parallel with the rows. Binding by hand is, however, so slow an operation that of late years we have dispensed with it, and made rapid work of the harvesting. If the ground is rather rough, or the fodder "lodged," it is cut with common scythes; if the surface of the field is smooth, the work is rapidly done with a reaping machine. It is suffered to lie two or three days, till partly dried, and then raked into winrows by means of a horse-rake, (one of the new vertical-teeth wooden rakes we find best,) and pitched into cocks or small heaps. From these it is pitched on the wagon and drawn to the stacking ground, adjoining the winter cattle-yard. If no ventilators are provided for the stacks, it must be put into quite small ones, not much exceeding in size a common hay-cock, or it will heat. But the best way is to provide ventilators as follows: Place three rails or poles upright,

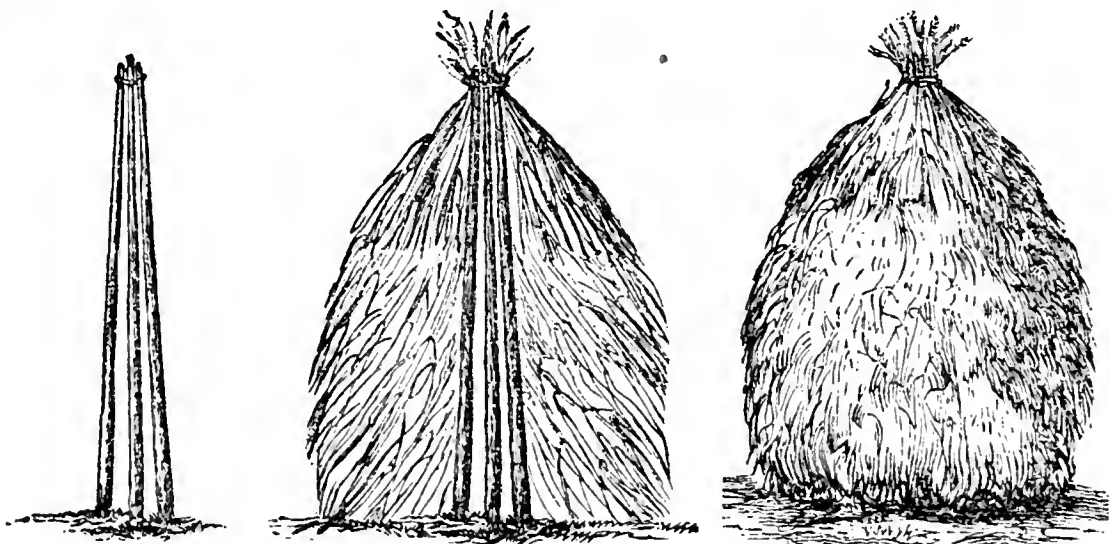


Fig. 40.—Poles for Stack. Fig. 41.—Section of Stack. Fig. 42.—Stack Complete.

(fig. 40,) within a foot or less of each other, touching at the top, or with a small block placed between them. They should be set in the ground far enough to stand well, with a band around the upper end to hold them together—or if they are merely poles, the lower ends may be sharpened and more easily set into crowbar holes. The stalks are now stacked around the poles, which form a chimney for the escape of moisture and heated air, (figs. 41 and 42.)



The stacks should be made narrow and tall, and each one should not contain more than about a ton.

Another way, when the stalks are bound into bundles, is to set a single sharpened stake or pole into a crowbar hole in the field, where each shock is to be made, (fig. 43,) and around this to place first a few bundles, tie the tops together, which will give the outside an inclined position, (fig. 44,) and on this inclined face place one, two or three successive layers of stalks, according to size, and the size of the pole, and then to bind them closely

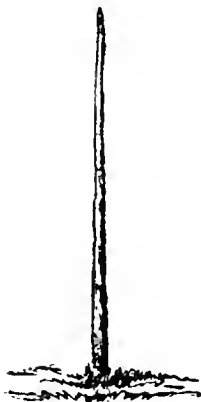


Fig. 43.  
*Stake for Shock.*

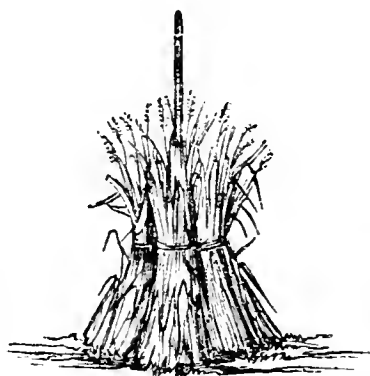


Fig. 44.  
*Partly Formed Shock.*



Fig. 45.  
*Large Shock of Fodder in Field.*

around the top of the stake, (fig. 46.) An inverted bundle, as a cap, will throw the water off, as the leaves will point downwards from the stalks—while, without such a cap, the leaves will be apt to retain water up the axils. A cap of rye straw will be still better.

The farmer who has much barn and shed room, may spread his fine corn fodder over the surface of the lofts, on top the hay, and if not more than two or three feet thick, and placed sloping, or as nearly vertical as may be, will dry perfectly, even if put in quite green. The better the ventilation, and the freer the sweep of air through these lofts, the better will the drying process be facilitated, and the doors and windows should therefore be left open whenever conveniently practicable.

Corn sown as fodder, if rightly managed, forms one of the best and cheapest kinds of food for animals in winter. It is liked by cattle, which eat it up clean, both stalks and leaves, and in this respect it is greatly superior to common husked cornstalks. A portion of these fine stalks for horses promotes their healthy condition, and is much relished by them. But we must not be misunderstood—we mean good, sweet, well-cured stalks, and not the blackened, mouldy, half decayed matter resulting from careless and neglected harvesting, and half erect or prostrate shocks, sometimes erroneously called “corn-fodder.” A larger amount may be obtained from a given area of land than from the best meadow. On good rich, moist soil, thickly sown in drills, and kept well cultivated while small, we have obtained at the rate of six tons of dry fodder per acre—costing, at present prices, not over three dollars per ton, including all expenses.



## HINTS ON MANAGING VARIOUS CROPS.

**DRAWING IN GRAIN.**—The following excellent arrangement for harvesting and drawing in barley is given in the *COUNTRY GENTLEMAN*, as adopted by O. S. Lewis of Knowlesville, N. Y. : Mr. Lewis cuts barley with a mower before it is dead ripe ; rakes with a sulky rake before it is dry enough to shell ; puts it in good sized cocks, where he says it keeps well, and can be drawn without further drying when convenient. It is drawn in very fast, using three teams, one loading, one passing to and from the barn, and one unloading. The barley is unloaded with a horse-fork very fast ; a smart boy drives the teams each way ; another tends the horse on the fork, so there is no loss of time to the hands, either in the field or in the barn, while the work moves along very fast. A similar course is taken in drawing hay ; also in drawing other grain, except that bundles are not pitched with the horse-fork.

**CUTTING HAY IN THE EVENING.**—This is done by some farmers, and with most excellent effect. They set the mower going at five or six o'clock, or earlier, according to the amount of hay it is desired to cut. If wet weather follows for a day or two, no harm, or but little, results, the hay being green. If, however, the weather is fair, as it is in most cases—no hay being cut when the sky threatens—it will get the first rays of the sun in the morning, and by noon will be pretty well dried. Stirring it freely—during the whole day—by three o'clock it will be fit to go in ; this where the grass is rather light or the stem not heavy. Here is an advantage of several hours, which the morning cutting would not get. With the use of the tedder, hay, however green, can thus be cured perfectly in a day, and come out in the winter as fresh and green as it is possible to get hay.

**PEAS THE CLOVER OF THE SOUTH.**—The Reconstructed Farmer of North Carolina, says : “ We trust that we shall be pardoned for again alluding to broadcasting peas as a sure, rapid, and in our judgment the most effective way of bringing up the lands in this region of country. It is the season of the year for making the experiment, and we wish to urge upon the farming community to try it. Try it by all means, on a large or small scale, as you please. You are treading on sure ground. The way is easy, cheap, and the experiments heretofore have been successful. Clover is the great fertilizer north, east and west of us. It may do on some of our heaviest soils, but rely upon it the field pea is the clover of this section. Clover burns out badly on most of our lands in July and August. The field pea is in its glory at that season. Clover wants three years to perfect its work. The field pea wants only *four* months. Who has not noticed the fine effect of pea-vines and hulls when the peas have been beaten out ? It can be marked as far as the eye can see. Try it on land lying out, after oats, wheat or rye, or at the last plowing of corn.”

**WHEAT AFTER CORN.**—Samuel Williams, of Waterloo, N. Y., says that

Joseph Wright of that village, whose excellent farming we have noticed on former occasions, pursues the practice of sowing wheat after corn with much success. The high condition of his corn ground doubtless contributes in two ways to this success—first, by causing early ripening and admitting of early cutting up and removal; and secondly, by the stimulus which a rich soil gives to the succeeding crop of wheat. Mr. Williams says that forty-five bushels per acre were obtained from the wheat crop thus grown last year. This year his best wheat was on ground sown the 10th of October last autumn, but owing to the injury caused by deep snow in many parts of the field, the average was only twenty-five bushels per acre.

**HARVESTING BEANS.**—Perhaps my plan, which works admirably, will be useful to others. Plant a stake six or eight feet long firmly in the ground; around this drive four pegs one foot from the stake, letting them stick up six inches; on the top of these pegs lay four bits of board thirty inches long, two to four inches wide, forming a square; and on these, with roots to the stake, place the beans as fast as they ripen; as beans seldom ripen uniformly, you may have to take two or three times at pulling and staking. Make the stack tall and slim, and be a little particular about bringing the top up sharp. A little string around the roots of the top layer, fastening close around the stake or pole, makes all safe. I have twenty or thirty stacks made as above, which have stood all the rains since the last of August, and are now in prime order inside, and but slightly browned outside. I have not seen a sprouted bean among them, although I have repeatedly looked for such. With a good crop of beans, it will require eighteen to twenty stacks to the acre. W. B. S.

**TO PREVENT BIRDS FROM PULLING UP CORN.**—As soon as the germinating corn in the planted field makes its appearance, sow corn all around the borders of the field. After a few days walk around the lot; if you find the corn pretty nearly all picked up, sow again. Two applications are sufficient, and will last the birds until the growing corn is too strong for them. About a peck at a time will answer for a field of eight to ten acres, unless the birds should be unusually numerous. Timely observation in the field will indicate whether more is needed. I have practiced this method for many years, and have found it effectual. R. M. C.

**WEEDS AFTER HARVEST.**—Weeds in pastures are apt to be neglected at this season, and not only present a disagreeable appearance to the eye of the neat farmer, but ripen and scatter seeds to the detriment of many future crops. If they grow in thick patches, cut them down with a mowing machine; but scattered mulleins, bull thistles, &c., may be cut up singly with a sharp grub hoe.

Weeds in corn, potatoes, and other hoed crops, frequently spring up in considerable numbers, as a sort of second growth, after the fields have been kept clean up to the present time. It is very important, and will save much future weeding, to destroy these weeds while they are yet green and soft, and have not formed seeds. Many sorts will bear a

thousand seeds on a single plant, and if a tenth part of these grow, they will make a hundred the first year, ten thousand the second, a million the third, a hundred million the fourth, and ten thousand million the fifth—which will be enough to cover a thousand acre farm with twenty plants to the square foot, and crowd out every vestige of a crop, if allowed to remain. It is better to destroy the first plant.

Stubble ground may be cleared of most of its weeds by running over it with furrows, about two feet or more apart, and then harrowing the whole. The weeds will spring up in profusion, and the first plowing will turn the whole crop under. On soft, mellow ground, harrowing alone will answer.

**CLOSING UP AUTUMN WORK.**—Every snug farmer has a great satisfaction in putting his premises in complete order for the winter before the severe cold arrives. He don't leave anything in a slipshod style. All is neat and finished. Why cannot every one do so? We will give a little good, handy, practical advice to those who have hitherto been negligent. Take some bright, cool morning when you feel fresh and vigorous, and with a pencil in your right hand and a memorandum book in your left—or if you have no memorandum book, the back of a letter even, will do—and then spend an hour in looking over your premises and about your buildings. Note down on the spot, very briefly, all that should be done. A single word or two will be enough for a single item. Here you will see a gate with a defective hinge, or swinging open for want of a fastening. Note it down. Six boards are loose on the barnyard fence—the stable floor needs two new pieces of plank—you have no good feeding boxes for your cattle—the cold wind sweeps under the cow-shed—a pane of glass is broken in the carriage-house—your pigs are wet and uncomfortable in their pen for want of sufficient roof—your corn-fodder is spoiling because the shocks or stacks are not set upright or capped—yonder is a pile of brush on your meadow, and there is a neglected surface drain on your wheat-field, and so on. Do not be afraid of writing down more items than you can attend to—make the list as large as possible, and then you can select the most urgent, if not able to do all. After this list is completed look it over carefully, and underscore all that need immediate attention, and do these first, or copy it off arranging under three heads; first, those items that must be attended to immediately; second, those which are indispensable, but not so hurrying; and thirdly, those which ought to be done, but may on a pinch be postponed to another year. You will then see at a glance just what is to be done; and if you have not found it out before, you will now, that a man will do at least twice as much in the same time, if he has all his work systematically arranged before his eye.

Let us suggest a little more in detail. Do you see that heap of manure yonder, that covers in part the stable sill and rests against the barn boards? It is decaying the timber, and the manure is wasting. You intend to draw it out next spring for your corn? It will be worth twice as much if you

draw it now, and your yard will be left with a neat appearance and your buildings uninjured. Draw out the manure and spread it as evenly as possible on the grass land you intend to invert next spring for corn. The rains will dissolve the enriching parts and carry it down into the soil, ready for the young crop of next year. Every load will thus be worth double or tripple the value you will get from it if spread next spring, left in lumps, and but little mixed with the soil.

Look now at your barnyard. Do you see that large, fine stack of straw, with a hollow or depression near the top, where it is letting in large quantities of water at every rain? It is spoiling the whole stack. Throw off the top and build it over again better, and save all your valuable straw. It is very common to despise straw because it is cheap and refuse matter, but it has many important uses, and should be saved. How much more comfortable a horse will be if lying on clean, dry bedding, than on half-rotted wet litter. Nothing is better than straw to cover potatoes and other roots for winter, provided it is dry and clean. We have found a coat of straw a foot thick, when packed on a heap of 50 to 100 bushels of potatoes, and with only three inches of earth or turf outside, far better than a little straw and a foot of earth. The dry straw absorbs all fumes and odors, and the roots are kept dry and sound.

**CULTURE OF BARLEY.**—In the Northern States it commonly follows corn in rotation, and precedes wheat—or it may be followed by clover, for meadow or pasture. One of the important requisites is a good fertile soil. If the corn has been well manured, that will be sufficient, but if not, the best way is to *spread* the manure on the land in autumn or winter, that the enriching parts may become diffused by soaking into the soil. A wet soil will not answer, and if rather light or inclining to sandy, it may be plowed in autumn, and only stirred with a two-horse cultivator in spring, as it is important to sow early. But it is better to defer the sowing a little rather than to sow on a hard or wet or badly pulverized piece of ground. No crop needs more a thorough mellowing of the soil, but it need not be worked deep, as the roots are rather shallow. If not possessing a natural underdrainage, it should be thoroughly underdrained, if practicable; but in the absence of this, it is important to provide now, in autumn, plowed and cleaned channels to carry off all the surface water. This will facilitate the early working of the soil in spring. As to varieties, the common two-rowed is most uniformly successful. About two and a half bushels per acre is the common amount of seed. It does best, and ripens most uniformly, if put in with a drill, about an inch and a half deep.

Two modes of harvesting are adopted—one, to cut like wheat, bind in bundles and place in shocks; and the other, and most common, to cut with a machine and rake like hay, and throw into cocks. It is important that it be not subjected to rains, as they spoil the whiteness of the grain and lessen its market value. The use of the wooden barley forks, sold at the agricultural warehouses, facilitates harvesting.

We have for many years employed barley, when ground into meal, for feeding horses to advantage—preferring to sell oats and to replace it with barley, rather than have the latter manufactured into intoxicating drinks. Corn may be cheaper for feeding hogs and cattle, but the value of barley in a rotation renders it desirable, even if used exclusively for domestic animals.

KEEPING SWEET POTATOES.—The accompanying view and plan was furnished by A. L. Wood of Scioto Co., Ohio. The same plan might also be adopted for a *fruit house*.

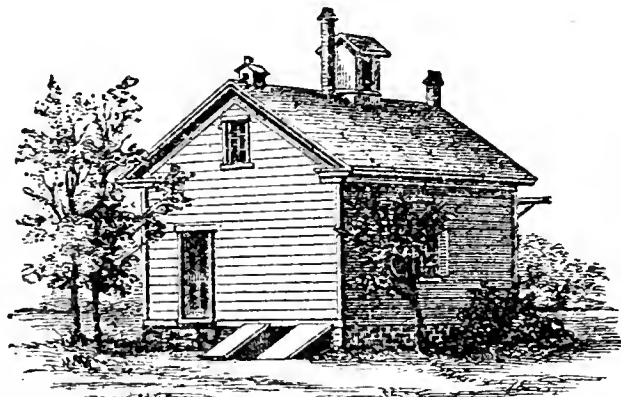


Fig. 43.—House for Sweet Potatoes—(may be used for Fruit.)

The building is 16 by 24 feet, and 10 feet story in the clear. Studs 2 by 8 inches, on heavy sills, give 8 inches space, to stuff with dry sawdust—six inches of the same overhead. The windows, W. W., twelve panes of 10 by 12 glass, are near the inside, giving 6 inches between these and the outside shutters. D'. D'', outside and inside doors; dotted lines, temporary partition, removed for putting in the crop. X. is trap-door to cellar, 7 feet deep. A ventilator at B. lets up the damp air. A., stove for keeping the potato room warm; a small stove under O. is used in coldest weather. The front room being always warm, is used as an office, reading room and sleeping apartment, for which it is very convenient. In spring it is used for counting and tying plants. Boxes 1 to 6 hold the potatoes, 2½ by 5 feet,

and 20 inches deep, extending one above the other to the ceiling. Scantling, 3 by 4, are under the lower boxes, and 2 by 2 between the rest to ventilate. The room holds 300 bushels packed in sand—closely packed would hold 400 bushels. The sand is dry and always sifted, and placed in the empty corner boxes when not in use. The inside temperature should not go below 46°, and will be 3° to 5° higher in the sand.

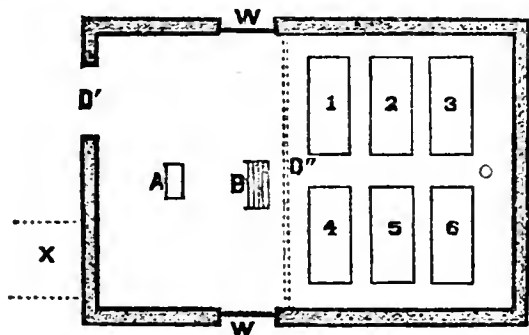


Fig. 44.—Plan—Double Wall, filled with Sawdust.

Boxes 1 to 6 hold the potatoes, 2½ by 5 feet, and 20 inches deep, extending one above the other to the ceiling. Scantling, 3 by 4, are under the lower boxes, and 2 by 2 between the rest to ventilate. The room holds 300 bushels packed in sand—closely packed would hold 400 bushels. The sand is dry and always sifted, and placed in the empty corner boxes when not in use. The inside temperature should not go below 46°, and will be 3° to 5° higher in the sand.

This house, substantially built, and painted white with green blinds, cost \$750—rougher and without cellar, \$350 or \$400 would do.

## CONTRIVANCES IN RURAL ECONOMY.

**B**RINGING WATER UP HILL.—A correspondent of the COUNTRY GENTLEMAN, has used a machine for two years to bring water eight rods up hill, without a cost of ten cents for repairs. A post at each end supports the wire, which is about the size of telegraph wire. At the spring it is fastened six or eight inches above the water. It is strained tight. A plank

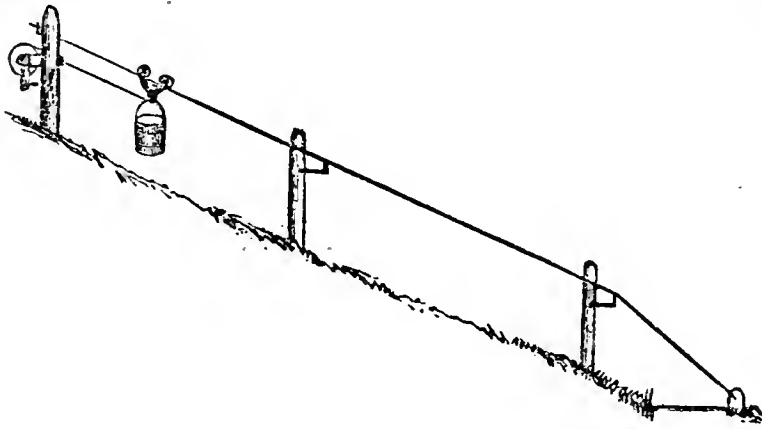


Fig. 45.—*Bringing Water up Hill.*

wheel with a groove is turned by a crank about eleven inches long. Two common door pulleys are attached to the ends of a piece of iron (weighing about two pounds,) bent like a semi-circle, the ends holding the wheels bending over one side, so that it will hang on the wire by the wheels. The pail or bucket is of tin, with parallel sides, the ears one-third down; one side slightly loaded, so that the bottom will not strike the water flat, or it will lift the pulley from the wire. A small copper wire, attached to the bucket, runs parallel with the other wire, and passes in the same direction through the upper post, where it winds

on the wheel. If the large wire is stretched well, the posts may be fifty feet apart. The supports are turned up at the ends, and are flattened to about the size of the wire, with a notch to lay the wire in. The last post and brace should be 8 or 10 feet from the spring, and with a steeper inclination.

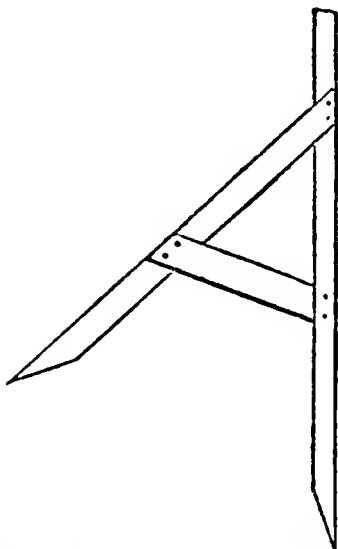


Fig. 46.—*Measuring Implement.*

**MEASURING IMPLEMENT.**—Make the implement as shown in the cut, but lighter, with the points four feet and one and a half inches apart. It may be used for measuring rapidly, by walking it along a ditch or furrow. It is much more accurate than the common mode of pacing, and about as fast after a little practice. Four measures will make a rod, or if the points are made five and a half feet apart, three will make a rod.

**CHEAP FILTERING CISTERN.**—A correspondent furnishes in substance the following plan for a filtering cistern, recommended by its cheapness

and simplicity, and which any mason can make without trouble, and at a cost of a dollar or two additional to any common cistern. The only drawback is a slight *taste of brick* for a few weeks at first. It consists simply of a brick partition built across, through which the water percolates slowly, but quite as fast over such a broad surface as it will be wanted for ordinary use. As there will be a great pressure of water against this wall, it must be firmly set in the cistern walls with cement, and all built up together; and it must be convex from the pump and towards the entrance spout—say a curve of six inches in five feet, or one foot in ten.

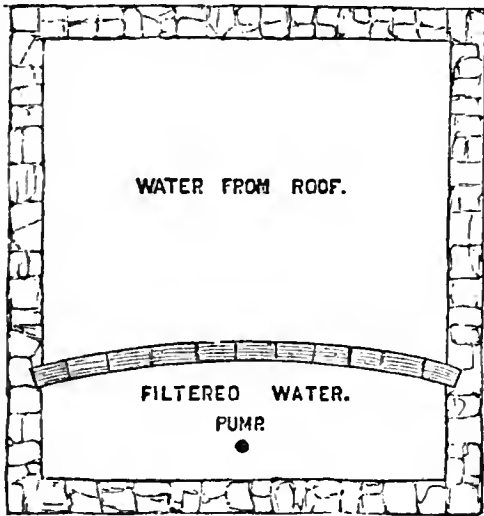


Fig. 47.—*Filtering Cistern.*

Without this precaution, the wall will burst by the pressure of the water when it pours in rapidly in a hard rain.

**CONVENIENT WAGON OR WHEEL JACK.**—For greasing wagons and oiling carriages, a simple contrivance which one person can apply in a moment without difficulty, is needed. Many forms of construction have

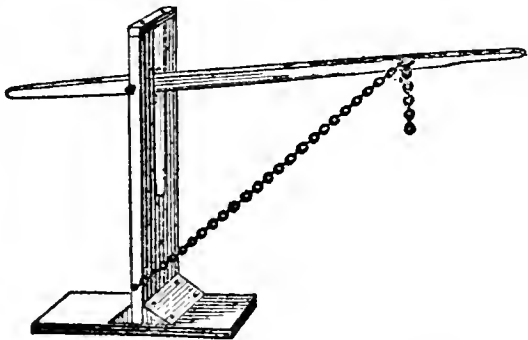


Fig. 48.—*Wagon or Wheel Jack.*

been adopted and recommended, but we have found nothing better than the one figured in the accompanying cut. It is made of a strip of plank, two and a half or three feet high, and five or six inches wide, set upright on a shorter and rather wider piece, morticed in and braced. A slit an inch and a half wide is sawed part way down, and a cross piece is spiked on at the top to make the two parts firm. The lever works in this slit on an iron pin or rod. A small chain is secured by a staple near the base of the upright, and a hook attached to the handle end of the lever. To use it, place the short arm of the lever under the axle near the wheel, then while bearing down with the right hand on the lever, hook the chain (held in the left hand) at any suitable link to the hook, and the wheel is then suspended from the ground. The whole is done in a moment, without moving a step. Several holes should be made in the upright, (not shown in the cut,) to adjust it to different heights.

**MOVABLE HORSE-HITCHER.**—Whoever drives a horse and buggy has been annoyed frequently for want of a hitching post. The figures show the mode of making one which may be carried under the seat, and used whenever wanted, by screwing into the turf. It may be done in the open

field, by the roadside, or on the pic-nic or crowded fair ground. The hitcher is best made of steel, the largest size steel rod used for spring-tooth horse rakes answering a good purpose. Iron rod will do, but it must be larger, (half an inch or five-eighths in diameter,) and it will not enter the sod so easily. Any blacksmith may easily make one. The coil should be about three inches in diameter, but if the soil is soft and light, four inches may be necessary, although it is better to have it longer so as

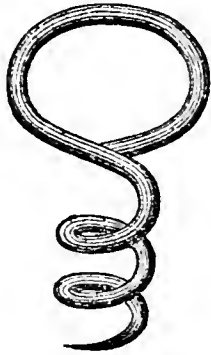


Fig. 49. — *Movable Horse-Hitcher.*

to penetrate further into the earth. The ring must be large

enough to give the screw a good purchase in inserting it. These hitchers, made of steel, might be made by the hundred for 25 cents each.

This contrivance also answers an excellent purpose for tethering a horse or other animal, while nibbling grass in a back yard, fence corner or border if a cultivated field.

**RACK FOR DRAWING WOOD.**—The accompanying figures show a convenient, spacious and

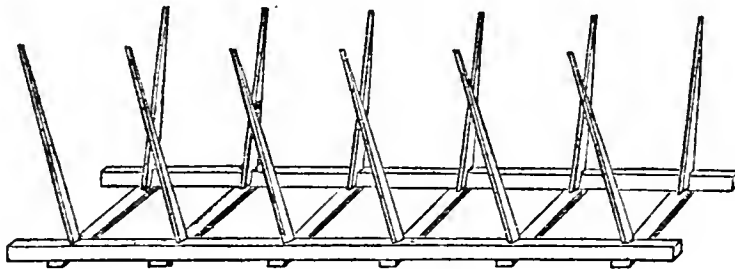


Fig. 51. — *Wood Rack.*

substantial form for constructing a frame or rack for drawing cord wood on a two-horse farm wagon. The side pieces are 12 feet long, 3 by 4 inches, and rest on the ends of six cross-

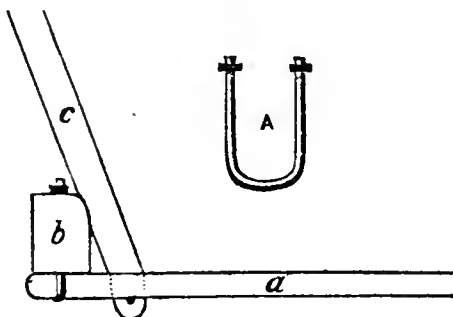


Fig. 52. — *A., Iron for holding Cross-pieces; b., cross-section of side timbers; c., lower portion of Stake; d., Cross-piece.*

pieces, which are two feet apart from centre to centre, and  $1\frac{1}{4}$  by 5 inches in size. They are secured to the side pieces by the irons shown by A., (fig. 52,) made of three-eighths rod iron. At *a.*, *b.* and *c.*, the relative position of the pieces is shown. The stakes are 3 feet long,  $1\frac{1}{2}$  by 3 inches at the bottom, tapering upwards to  $1\frac{1}{2}$  inches square at the top. They are made of oak or other strong wood. The two at each end are secured with iron pins below the cross-pieces; the intermediate ones are merely set in and not pinned. The stakes incline about twenty degrees from the vertical, so as to give ample room between them.

**TARRING GRINDSTONES.**—I. Lamborn of Chester Co., Penn., makes the following good suggestion: When you have a grindstone in perfectly

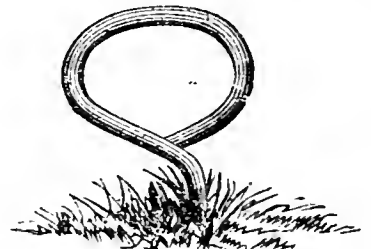


Fig. 50. — *The same Screwed into the Ground.*



straight face across the stone, take a little good tar and make a ring around the stone in the centre, and it will cause it to ridge up in the middle, so as to be more convenient for grinding a perfect edge on a tool. You need not tell your careless neighbor to please to grind on the edge of the stone, for he *cannot* grind in the centre—the tar will prevent him from gouging out the middle and leaving the face irregular. I have tried this plan on my grindstone, and am pleased with it.

**OUT-DOOR REFRIGERATORS.**—The accompanying figure represents an inexpensive contrivance for keeping milk, butter, and other perishable articles in hot weather. Its size may vary with the wants of the owner, but the larger the ice-chamber is, the less frequently it would require filling,

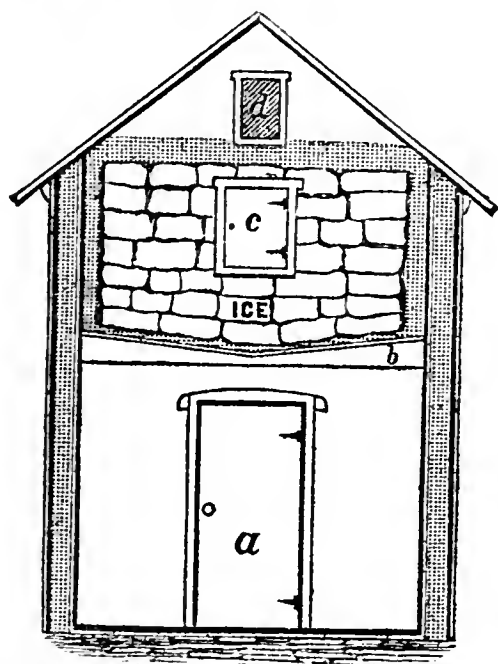


Fig. 53.—Elevation and Section of Out-Door Refrigerator.

and if sufficiently large, it would keep ice all summer. The walls (fig. 53) are double, and filled with sawdust, as common in ice-houses. The door, *a.*, is double, with a space of three or four inches in it, filled with sawdust to exclude the heat. Two doors, one opening outward, and one opening inward, would be more perfect. Whether one or two, they should be made to fit very closely. These doors open into the refrigerator, which is kept cool by the ice above, and it may be lined with shelves. The joists, *b.*, must be stout, so as to hold several tons of ice above, provided a large sized building is erected. They

are cut down towards the centre, so as to form a trough for the discharge of the water from the melting ice. On these joists galvanized sheet-iron is laid. On this the ice is deposited, and the iron being thus kept constantly cold, cools the air in the apartment below, by the natural descent of the cold air. By sprinkling sawdust over the iron floor, the thawing of the ice will be retarded, and thus its melting and duration may be

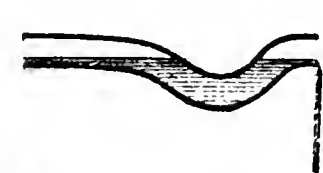


Fig. 54.—Section of Discharge Pipe.

entirely controlled, according to the depth of this layer of sawdust. The door, *c.*, receives the ice, and the window, *d.*, kept always open, is for ventilation. There should be one in each end. The freer this ventilation, the better the ice will keep—being covered with eight or ten inches of sawdust.

It is better to line it with a few inches of sawdust at the sides, in addition to the sawdust walls. There is no use in a double roof.

The water from the melting ice runs down into the trough, and thence into a lead pipe, which being bent, as shown enlarged in fig. 54, allows

the water to escape freely, but excludes perfectly the warm air from without.

**BOARD DRAINS.**—The following mode of constructing board drains instead of tile, when the latter cannot be had, is given by a correspondent. It will be observed that a great advantage is derived from laying the tube *corner down*, as there is a stronger current of water, carrying off sediment, which would gradually settle in a flat bottom drain, and ultimately choke it.

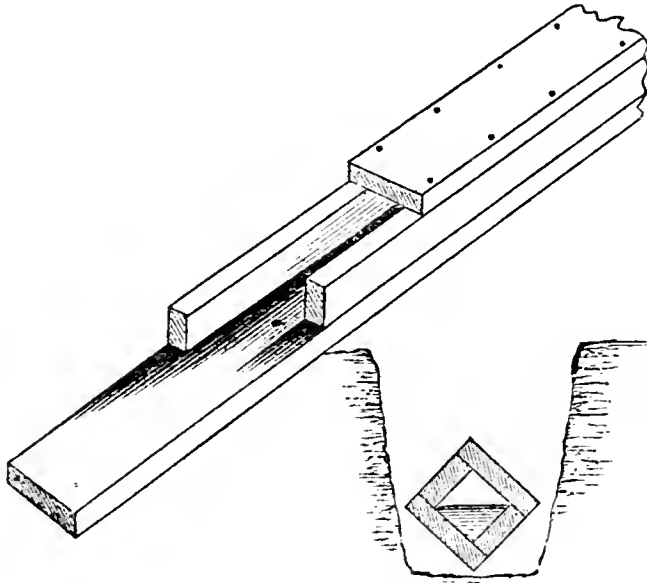


Fig. 55.—*Board Drains.*

on one of the corners, forming a diamond shaped drain. If there are not too many nails put in the boards, there will be plenty of room for the water to find its way into the drain.

**BOARD FLOORS FOR HOGS.**—Having had much experience in rearing and fattening swine, I can state confidently that hogs will thrive on a board floor, if properly taken care of. Their feet do sometimes become distorted, but seldom so much so as to interfere with their thrift. Such floors are preferably made of lath or rails laid at such a distance apart as to allow the urine, &c., to pass freely through. I know of no mode in which hogs can be kept so clean and comfortable as on such a floor in the summer season; in winter a tight floor is necessary for young pigs. J. P.

**KEEPING OUT RATS AND MICE.**—A. B. Allen says that sixteen years ago he perfectly excluded rats and mice from a brick stable, by laying the sleepers flat on the ground, and then filling between them with cement to their face, and before drying in the least, nailing hemlock plank firmly on them. No rat or mouse ever gnawed through that floor. The basement of his house had the floor laid in a similar manner, using matched inch pine instead of hemlock. To keep them from entering behind the lathing in the upper walls, three inches of cement was laid on the floor between the studs. He adds that barns may be kept tolerably clear by raising the floor a foot and half from the ground. Cats will then run under and catch any thing there. If laid close to the ground without cement, the floor becomes a perfect warren for all sorts of vermin.

**CEMENT AROUND CHIMNEYS.**—A correspondent of the *COUNTRY GENTLEMAN* made the roof perfectly tight around his chimneys, by making tar and dry road dust (sifted) into a thick paste, and applying with a trowel, extending four inches over the shingles. This formed a perfect collar till the roof required renewal.

**CARE OF FARM IMPLEMENTS.**—Carelessness and slovenly habits are not wholly confined to any particular locality, and hence we are not surprised to find that even among our enterprising western farmers, some indications of a want of care and economy occasionally occur. The *Prairie Farmer* gives a statement of a correspondent in which he says that during "a short day's ride" from home, he had the curiosity to count the instances where farm implements were left exposed to the weather, with the following result: Twenty-six wagons, nine buggies, two gigs, thirty-four sleds and three cutters were seen standing near houses, barns or sheds, fully exposed; four plows were standing in the furrows, and twenty-three by the roadside, turned up or laid flat; thirteen double-shovel plows, two of which lay upon an old sled, four hung upon fences, and the rest where last used; nineteen reapers were standing out, tilted up and lying in all positions; six were under shade trees and straw sheds, and three in fields where last used; seven mowers were backed up into the corners of fences or tilted around the hay stack, with rails piled on them to keep the cattle off; eight horse rakes were piled upon hog-pens or broken-down wagons; six seeders sharing the fate of other things. After the owners of these implements have paid all their taxes, they may buy a new set, as they evidently have more money than they know what to do with, judging from the freedom with which they throw it away.

**TOOLS IN PLACE.**—Farmers who have been in the practice of leaving their tools exposed to the weather the past season, should employ the first leisure evening in computing the relative advantages of exposure and shelter. Different implements are variously affected. A crowbar is only rusted by leaving it in the field; but that rust sticks to it all the next year, and makes rough and unpleasant handling. A spade and hoe are rusted at the blade, and hence do not run bright, easily and clean through the soil afterwards; and the handle at the socket becomes partly decayed, and finally breaks off. Figure up the cost of allowing a good hoe to become rusty, so that the man who uses it afterwards has to knock off the adhering soil a hundred and fifty times a day, or 1,500 times in ten days, besides doing only two-thirds of a day's work. Would it not be cheaper to carry it in at night? Do you remember how long you hunted for it in the morning? Implements with many joints or pieces, as plows, harrows and cultivators, are more injured and rotted; and those like mowing machines, which run by gearing, to a still greater degree, for all the difference between free and smooth running cog-work that has scarcely any friction, and a heavy, creaking, thumping motion, hard and wearing for team, results often from the rusty surfaces.

COWS SUCKING THEMSELVES.—The following contrivance, not entirely



Fig. 56.

new, is described by A. D. Newell of New-Brunswick: "I took an oak barrel head and cut it in this shape, (fig. 57,) five inches wide and eight inches long; I then sprung or bent her nose so as to get a point in each nostril; it then hung in front of her mouth. She can eat anything, but not suck. I have put small ones on calves, so that they can run in the fields with their dams, and not be able to suck them."



Fig. 57.

PROBANG FOR CHOKED CATTLE.—The safest mode of removing potatoes or other obstructions in the throat of cattle, is described on page 205 of the 4th volume of RURAL AFFAIRS, and is particularly applicable to cases where the obstruction is in the upper part of the throat. When further down, a probang must be used. The great point is to have one with a *concave* end, so as to hold the potato in the middle of the throat. We have known a rounded or flat end of the piston to work itself between the potato and the side of the throat, and kill the animal. The following are suitable dimensions of a probang, made of hickory or tough white oak.

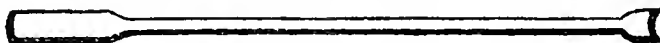


Fig. 58.—*Probang for Choked Cattle.*

It is three feet long, and an inch and a half thick—the concave at the piston end, and the handle at the other—worked down to five-eighths of an inch between, so as to be flexible. Two men will hold the cow by the horns and nose, while a third with the instrument will very carefully and cautiously shove the potato down about half a foot, when it is carefully withdrawn. Cattle have been relieved and cured in less than a minute.

HOW TO REPAIR A CHAIN PUMP.—If the tube has got worn too large for the chain, so it will not raise the water properly, procure some light sole or heavy harness leather, cut into circular washers a trifle larger than the buckets; make a hole or slit in the centre; take the chain apart and

slip on one of the washers next above the bucket, having it fit snugly. There should be only about four or five to any well, no matter what the depth is, as if more than two in the tube at once when drawing, the suction will be too great. Trial will show how large the washers should be left. A most efficient means of repairing a worn out establishment.

**DESTROYING CROWS AND SKUNKS.**—Take one dozen hen's eggs and break a small hole in either end, and with a small stick insert a small quantity of strychnine, and then place them about the cornfield, and you will have a dozen or more dead crows in the morning. The same remedy will answer for skunks by placing the egg in the hole. Be careful not to lay it where anything else will take it. A. J.

**DURABLE FLAT ROOF.**—Eighteen years ago I made a flat roof over the central portion of my dwelling, in the following manner: I first laid jointed flooring boards upon the joists, and covered this surface with roofing paper. Then I poured upon a section of the roof a small quantity of raw coal tar, spreading it evenly with a shingle, to the depth, perhaps, of a sixteenth of an inch. Upon this I then sifted common road dust, putting it on evenly to the depth of half or three-fourths of an inch—that is, as long as the dust continued to be wet through to the top by the tar. It took me but an hour or two to go over the whole roof—18 by 18 feet—in this manner. My first application was made in May, and about six weeks later I went over the whole surface again in like manner, finishing up with the fourth application in September. Since the application of the first coating of tar and dust, to the present time, the roof has not leaked a drop, and looks good for a century at least to come. Since the first year it has been like a firm sheet of stone, about half an inch thick, on which the family can sit, walk, run or dance, without injury to it. D. B. NEAL, *in Co. Gent.*

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## ECONOMY IN FARMING.

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**J**OSEPH HARRIS of Rochester, says that a good grindstone, set true, and run by horse-power, for grinding tools, hoes, spades, and plow coulter, will pay for itself in a month. He makes his men grind their hoes every morning, and take a file into the field to sharpen them when they become dull. His men think it extravagant to grind away the hoes; but he can buy a dozen hoes for less than he pays one of them for a week's work. Tools cost nothing in comparison with labor. It does not pay to give a man a dollar and a half a day to load manure with a dung-fork with one or two teeth out. A dull, rusty hoe will cost more in a week than a dozen new ones. Good working horses are cheaper than poor ones. A man and team cost about \$600 a year, and it is poor policy to save \$100 in the original purchase, and lose \$200 or \$300 yearly in the amount of work done.

## TWO OBSTINATE WEEDS.

**O**X-EYE DAISY.—This undesirable weed has been long known in the eastern portions of the United States, and in the early part of summer, fields that are thickly infested with it appear almost as dazzling white in the sunshine, as a sheet of newly fallen snow on a clear day in winter. We



Fig. 59.—*Ox-Eye Daisy.*

remember several years ago, when standing on a high piece of table-land in the south-eastern corner of Pennsylvania and looking at the faint and distant fields of New-Jersey, some fifteen miles off, of being puzzled to account for their white appearance, like snow ridges—then in a warm day of summer. We afterwards found that the whiteness came from the millions, or billions, of flowers of the ox-eye daisy, stretching for miles across the country.

As the Colorado potato bug comes east, the ox-eye daisy goes west. Where they will meet, remains to be seen. In a recent ride through a part of the country where this weed was scarcely known some years ago, it was now

observed in such abundance that on looking out the car windows as we shot swiftly past the banks where deep cuttings had been made, we were reminded of Bryant's description of the snow-shower—

“As myriads by myriads, madly chased,  
Stream down the snows, till the air is white.”

In most cases the ox-eye is an indication of too long a continuance of permanent meadows or pastures. It always is a proof of slipshod farming. A good, well-managed rotation will keep this weed under or out. Hoed crops, with the horse-hoe passing as often as once a week, and hand-hoeing as may be necessary, with densely sown and heavy masses of clover, and frequent alternations of the different crops which occupy the ground—will soon diminish the weed so much that hand-pulling may easily clear it out. Constant and clean cultivation is hard upon it, and clover crowds it severely—not thinly-sown clover, with bare patches, but with a peck and a half of seed to the acre, on a fine, rich, mellow surface, where it will germinate freely and grow well. Weeds, as well as insects, must be met by diligence and industry.

**EXTERMINATING QUACK GRASS.**—This is generally admitted to be one of the most obstinate of all weeds, and it has this characteristic, that it will never yield to half-way or slipshod management. One of the most successful experiments we have witnessed in its extermination was performed by Herendeen & Jones of Geneva, N. Y., on a wet, twelve acre lot, literally overrun with it, and all completed in a wet season. They took hold of it last season, and first tile-drained it thoroughly. They began then to destroy the quack grass, which in many cases formed an almost impenetrable mass. Although the whole season was very wet, they succeeded in wholly destroying it, and a finer piece of deep, mellow, dry, clean ground, is not easily to be found. For destroying the quack grass, they first plowed it under when about two feet high, by means of a plow furnished with a large chain to throw the vegetable growth in the furrow, drawn by a strong three-horse team. The surface was then harrowed many times, until a two-horse cultivator could be applied. It was then plowed again, harrowed and cultivated as before; and this process repeated about once a week until every vestige was dead. They find this quick work most economical.



Fig. 60. — *Quack Grass, (Triticum repens)*—*Right figure, before maturity; left figure, mature.*

## LARGE AND SMALL FARMS.

**T**HE ADVANTAGES of the smaller farms are:—1. They bring neighbors near together, provide good roads, lead to good schools, and to churches.

2. The owner or his sons closely supervise everything, and all may be kept neat and done in a perfect manner, and there is less eye service of hired men.

3. Less time is spent in going over a large surface, and in going to and from work.

4. Less labor is required in drawing manure to, and crops from distant fields.

The advantage of large farms are:—1. A more complete supply of farm implements and labor-saving machinery may be employed, the larger capital and larger use warranting the outlay.

2. There may be a more complete division of labor, and men skilled in each kind of work, kept at what they can do best.

3. Large and showy houses and grounds may be had.

4. The owner, if he makes a profit, may secure a larger income than from a small farm; in other words, the working of one head will bring in more money.

## POULTRY HOUSES—HOW TO KEEP THEM PURE.

**B**UILT OF BRICK OR STONE, poultry houses are apt to be damp. Of wood they are not always warm enough. But the following is a cheap and excellent mode, the walls scarcely allowing the frost to pass. Nail common inch boards vertically ; batten with two-inch strips on the



Fig. 61.—*Hollow Walls for a Poultry House—*a., *Outside Battens* ; b., *Outside Boarding* ; c., *Middle Battens* ; d., *Felt* ; e., *Inner Battens* ; f., *Lath and Plastering*.

joints, outside and inside. Then nail on the inside battens a complete coating of the felt commonly used on roofs

under the slate—this felt is very cheap, and a few dollars will line a whole house. Then batten again, and lath and plaster on these inner battens. Or boarding may be used instead of the lathing and plastering if desired. Here will be two spaces of air in the wall, rendering it an uncommonly good non-conductor, at moderate cost. To exclude mice, fill the space at the bottom, six inches, with sifted ashes or with cement.

In a country residence, we find a good position for the hen-house on the division line between the house-yard and the barn-yard. The entrance door for the attendant is from the house-yard ; but the opening for the fowls is into the barn-yard, where they can scratch and pick up scattered grain among the straw and fodder.

Every one knows that a brick or flagging floor is too cold in winter for such barefoot individuals as fowls. But a correspondent says he makes a good floor of soil, four inches thick, on a floor of flags. When the droppings fall on a smooth floor, it is impossible to keep the house sweet, as the odor taints the room before they can be swept out. But when they fall on a bed of fresh soil, most of the odor is absorbed. In one corner of the house, away from under the roosts, is a pile of good fresh garden soil. Every day a few shovelfuls are spread over the floor. The drier this soil, the better it will absorb.

## CHICKEN COOP.

**A** DESIGN OF A CHICKEN COOP of rather neat appearance, has been furnished for the COUNTRY GENTLEMAN by J. W. Young of Pittstown, N. J., from the rough outlines of whose communication we have made the annexed sketch, by which farmers and others who have workshops may occupy the leisure hours of winter in making a few of these



coops for another season. The board frame, *a.*, is of inch stuff; the cross

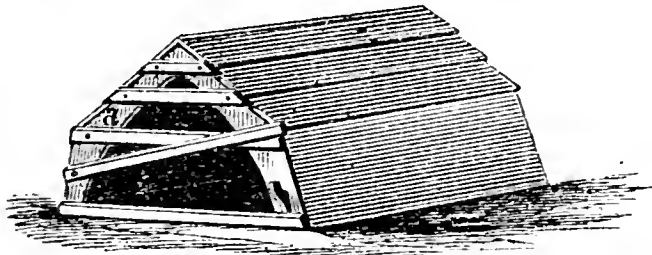


Fig. 62.—*Chicken Coop.*

slats of common strips of lath, one of which turns on a pin or screw at one end, and is represented raised, to afford entrance. When closed it drops like a latch into the place provided for it, and is fastened by a nail above it. The outer or roof boards are thin, and the whole is light and easily carried from place to place.

Fig. 62 represents a platform on which the coop rests and keeps the chickens from the wet ground in time of rains. The dimensions are: Breadth, about 2 feet; length, 2 or 2½ feet; height, 18 inches; height of first or sloping sides, 9 inches; breadth of each sloping side of the roof, 13 or 14 inches. We suggest that when made, each of these coops receive a coat of crude petroleum, costing perhaps five to ten cents, and rendering them very durable.

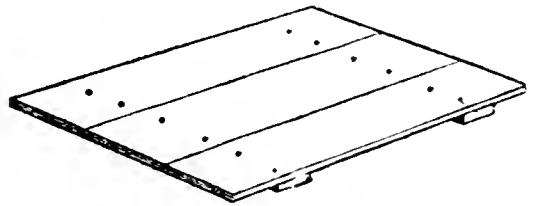


Fig. 63.—*Platform for Coop to Stand on.*

## AUTUMN, WINTER AND SPRING MANURING.

A YOUNG FARMER, whose rotation is corn, barley, wheat and clover, asks to which of these crops he should give his manure, and at what time of year.

Like nearly everything else in farming, the course to be pursued must vary with circumstances, and the farmer must exercise his judgment to some extent. But the following may be adopted as general rules: 1. The corn should have at least a portion of the manure, if practicable. It is scarcely possible to manure the land too much for this crop, provided it is properly applied, or so as to be well diffused through the soil. 2. The barley crop needs a good soil, but if the corn has been well manured, it will need nothing additional—the great additional points being thorough plowing and harrowing and early sowing. 3. The wheat requires more discretion in its treatment, and usually, on good land, will be sufficiently manured by the previous crops, with the exception of a top-dressing, after the last plowing, of five to ten two-horse loads of fine manure per acre. If oats are sown the second year instead of barley, a moderate manuring besides may prove useful, and sometimes necessary.

The usual accumulations of manure are in winter, but its fitness for application at different times of the year will be controlled by the materials

employed in its manufacture. If composed largely of corn fodder, it will be unfit to apply till the following autumn, after rotting down in heaps. But if the corn-fodder is all cut with a machine before feeding out, it may



Fig. 64.—*Badly Spread Manure.*



Fig. 65.—*Finely Spread Manure.*



Fig. 66.—*Badly Spread and Badly Plowed in.* Several advantages result from this practice. It requires less handling over; it is soon out of the way; it is easily spread from the sled or wagon; it is drawn by men at a time when they may be otherwise idle; it removes the labor from the short and crowded period of spring; it allows the soluble manure to wash down into the earth and become intimately diffused; and it prevents the hardening and baking of the soil by the passage of the loaded wagons, when the ground is wet and soft, after the breaking up of winter. It should therefore be the aim to draw out, as it accumulates, all the manure which is short enough to spread well, to plow under in spring for corn or other spring crops, leaving the longest and coarsest to rot down in heaps for autumn sown wheat, or for spreading on sod which is intended for corn the next year.

We have already remarked that corn can scarcely be manured too much, if the work is properly done. If there is any danger of its running too much to leaf and stalk, which would be a rare occurrence, plant a smaller variety, and allow a larger number of stalks to grow. The succeeding barley, oats or peas, will receive a decided help from it—especially if the soil has a sufficient quantity of clay to hold the manure; and in good wheat districts, its effects will be sufficient to obviate anything further than a top-dressing. But if the soil is of moderate fertility—or if a heavy crop of oats precede the wheat,—(these two contingencies should never unite,)—an application before a shallow plowing, with thorough intermixture by the harrow, may prove advantageous in addition to the top-dressing at or near the time the wheat is sown.

We have not yet met the farmer who could make enough manure to obviate the necessity of using clover as a fertilizer, and a combination of the two generally gives excellent results. Manure spread on clover sod in autumn, as we have frequently had occasion to urge, is the best practicable or profitable preparation of ground for inverting the following spring for

the reception of seed corn. It is worth double, and sometimes triple, an equal application in spring just before plowing under. Spreading the manure over such a clover sod, as it accumulates in winter, is greatly superior to spring application, although not equal to autumn manuring on the sod. As a general outline of directions, we would therefore recommend :

1. To draw out and spread in winter all manure short enough to turn under for corn.
2. To heap up for rotting down, all that is too coarse or long for spring.
3. To apply these heaps to sod intended for corn the next year, or to wheat fields after the last plowing, doing the work in portions at a time, as the last plowing progresses, so as not to tread the mellow soil with the teams or the wagons.
4. If applied in spring, break the manure and intermix it with the soil by harrowing and then plowing in. Ground intended for ruta bagas may be thus prepared well, as plenty of time is allowed for intermixture and preparation.

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### BONE MANURE.

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**I**T OFTEN HAPPENS that bones may be had in large quantities with little cost, and when ground in a mill, and especially when made into superphosphate with sulphuric acid, they become a powerful manure on many soils. But it hardly pays for farmers to make their own superphosphate, as it requires considerable labor, some skill and experience, and the acid cannot be had so cheaply as at large manufactories. The next best way, if it can be ground, is to mix it in thin alternating layers with very wet soil, in heaps of a ton or more, and with about twice as much soil as ground bone. In a few days it will heat. Leave it undisturbed until nearly cool, and shovel it over, when it will heat again. Repeat the process until it becomes a fine powdered manure.

But if the bones cannot be ground, break them up with a sledge, by placing them on a thick flat stone, with a wide hoop around them. Then place this broken material in thin alternating layers with strong fresh stable manure, and layers of loam or earth about half as thick as the manure. The whole will heat, and the bones will work down and become soft, so as to mix well and form a rich compost when the whole is thrown over.

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**IRRIGATION.**—Irrigate land one season, and the effect will be seen the next also—this on grass more particularly.

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## RASPBERRY CULTURE.

BY A. M. PURDY, PALMYRA, N. Y.

WHAT A CHANGE in this fruit from twenty years ago! Then the Black Cap was not to be found on the market stands, with perhaps a few exceptions of the little insignificant, seedy, wild sort. Well does the writer remember of rambling over fields in search of the raspberry, and perhaps gathering four to eight quarts after a hard day's work, with many a scratch and fall. How changed now! The market stands of our cities and villages seem to be loaded with the finest sorts, and yet the price, *the past season*, in most markets, was *higher* than five years ago, the fact being that the increase of population, and the taste and demand for this fruit, have increased so wonderfully, that it has forced prices up to paying rates; and too, how different with many families who generally intend to keep their gardens supplied with the choicest fruit. Now, by using discrimination in planting the proper kinds to keep up a rotation, their tables can be supplied for at least six weeks.

I propose, to the best of my ability, to show our method of culture, and how any family, at a very little cost and trouble, may supply their table with this choice fruit, and any party grow the same for marketing and make them very profitable. First we will give the method for field culture that we have found to succeed best and prove most profitable, and that too without the use of stakes.

We have found *any* soil that will grow a good crop of potatoes well adapted to raspberry culture, and have seen them growing on all kinds of soil with the best and most satisfactory results. In fact it is not so strictly necessary that the soil should be of that light character and easily worked as for strawberries, for the reason that the work can be mostly done with a horse and cultivator, while strawberries require a large amount of hand work. The land should be in good tillable condition—that is, having been occupied by some crop the year previous, so that the sod will be entirely rotted and subdued. *Never plant any small fruit on sod land*, if it can be helped. If it *must* be done, do the planting *in the fall*, so that the sod will get well rotted before dry weather comes on the next season, for if an unrotted sod lies under or next to the roots of any plant, in time of a drouth be assured the largest share will die out. One important thing must be observed. If the soil is of a sour, wettish nature, see to it that it is properly tilled and drained, for they will not yield good crops on such ground, neither will the plants that are layered to increase roots “take” well when water lies close to the surface.

We have practiced both the “hill” and “row” or “hedge” system, and, taking everything into consideration, prefer the latter—1st. Because

we can plant from a half to two-thirds more plants on the same piece of ground, and as they yield but about one-fourth to one-third of a crop the first year after setting, we get twice to three times the amount of fruit the first year, thus making our ground pay us better the first bearing year. This is shown from the fact that in "hill" culture the plants are set 6 by 6 feet, or 1,210 plants to the acre, while if set by the row system they should be set 7 feet one way, and 2 to 3 feet the other—if 3 feet, then we have 2,076 plants. Now as a *one* year old raspberry may be allowed to bear at least a pint of fruit that season, if trimmed and cut back as we shall direct, we shall get the first bearing year, from the hill sets 605 quarts per acre, or 19 bushels; and from the last or row system, 1,038 quarts, or 38 bushels; and the second year, if they have received such attention as we shall describe, and such varieties are planted as we shall name, we name but a fair crop when we put the plants at two quarts to the bush, or from an acre of "hills," 2,420 quarts, or 75 bushels; while from the latter at least one-half larger crop can be obtained, (not as many again, for the bushes have now become so large that they meet together, and do not have that chance to fruit on all sides as when in hills;) still 100 to 125 bushels can be relied upon.

Another reason why the "row" system is profitable, is that the plants sustain each other, and are not liable to get twisted off by hard winds; and still another reason is that double the amount of plants can be obtained from the plants the first season, and at least half as many again the second season.

We usually lay off our lands so that the rows will be from 16 to 20 rods long. We mark out with a plow, being guided by a stake in the centre and at each opposite end from where we start.

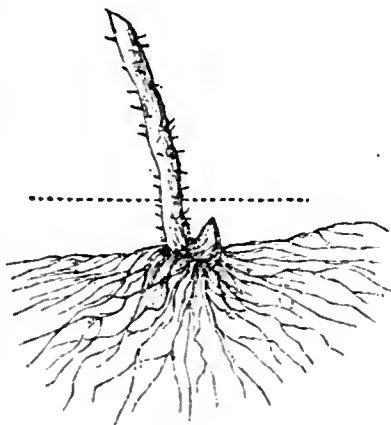


Fig. 67.

The plants are kept trenched in and taken from the trenches as they are needed to plant. A boy drops them along the furrow, and a careful person follows and sets them out, being careful to spread the roots and draw in a little firm dirt to come in contact with the roots. If it is the "sucker" variety, we usually leave on about 6 inches of wood to show where the plant is, so that it can be worked, if necessary, before the germ makes its appearance. If of the "layer" kind, such as the Doolittle, we spread out the roots carefully, (fig. 66,) the line indicating the top of the soil, with just a

trifle of the cane that should be left on the plant above and the germ below the surface. Our object in leaving a little wood above is, as above stated, to indicate where the plant is; if there should be none of the cane on the root to show above ground, take pains and spat the top of the ground right *over* the plant with the back of the hoe, to show where it is

planted, and then if dry weather follows, and the germ does not show itself, the crust can be broken and worked a little with the fork, (fig. 68,)



Fig. 68.

an instrument that is admirable for working around them the first time, as it pulverizes the soil so nicely.

We usually plant potatoes or beans half way between them the first year, being careful, however, if it is the Black Cap family, or the "layer" sort, and we are desirous to get an increase of plants, to plant *early* kinds of potatoes, so that they will be ready to dig *before* it is time to layer the

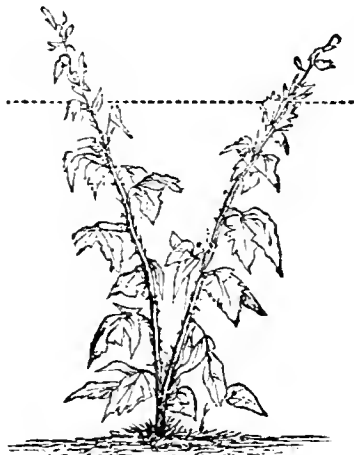


Fig. 69.

new growth; but if the "sucker" kinds, then later potatoes can be planted. As soon as the new growth gets about one foot high, we pass over the rows and nip off just enough to check its growth.

If it is the *sucker* sort, we would allow it to get 3 feet high before nipping. It will usually throw up one or two sprouts, (fig. 69.) These should be nipped back as represented by the cross line in fig. 69. We cannot give the exact season for doing it, as they are so variable in different parts of the country; but lay it down as a rule to let bush get not to exceed 18 inches in height, and then nip it off just enough to check its growth. Soon these

shoots will throw out laterals, and in two to three weeks will present an appearance as represented in fig. 70, the cross line showing where the bush was nipped as first described.

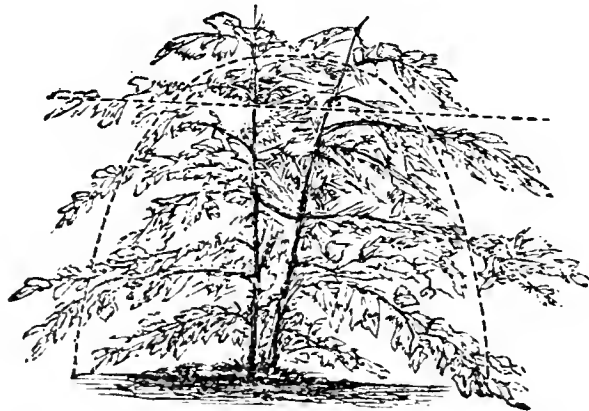


Fig. 70.

and when these are taken up, 6 to 8 inches of cane can be left on them, and the bush cut back, as indicated by the dotted lines, (fig. 70,) for fruiting the next season—say not over 18 inches high and 18 inches across. If you desire to give your bushes a better shape for fruiting the next season, and want to increase plants from them to the *largest possible number*, then nip

*all* of above stalks off back to where the dotted lines are—say just as they are forming the tip described, and in two or three weeks time you will have a bush having, instead of eight to twelve tips to layer as in the first case,

forty to sixty. In fact we have layered as high as *one hundred* very fine plants from one bush by nipping back the second time. The plants being layered late, and not having so much room to form fully developed roots, do not get as large or fine, but still we have had just about as good success with them. In both cases after taking up the roots we cut the bush back to where the dotted line is.

As soon as they are through fruiting the first year, cut out the fruit-bearing canes, having in the meantime however nipped back the *new* growth when it gets about two or three feet high. If a large *early* plant is desired this season, and *numbers* are not so much desired, don't nip the second time, but layer as soon as they have formed tips as described above. If, however, large quantities of plants are wanted, nip off these side branches when they get about two feet long, and they will give you as many tips as you can find space to put them in.

We prefer not to allow them to bear a large crop the first bearing, as it is apt to damage them for future planting. The less they are allowed to bear the *first* bearing year, the longer the plantation will last.

Remember, if it is desired to do away with stakes, this "nipping back" must be closely and systematically attended to, and judgment used in so doing. If the plant proves to be a splindling weak one, nip it back more, and if a strong stocky plant, it will not need such close pruning. It must be remembered, however, that when a bush has been layered to increase plants from, it will not stand up as erect as those that have been closely pruned and not bent over to layer.

We usually cut out the old wood with a pruning knife, wearing at the same time a pair of leather harvest mittens. This is thrown in piles together from two rows each side, and boys carry it out to the ends of the rows with forks, whence it is carted off to burn.

The raspberry crop is largely increased by a heavy mulching close around the crown, and a thorough and constant pulverizing of the soil with the cultivator, up to fruiting season. In the winter this mulching can be applied, and it not only acts as a mulch and protection against drouths, but enriches and supplies the plant with desired and necessary nourishment.

The red raspberries do not require that close nipping back that the blacks do, to make them grow stocky. If the new growth is nipped when they are about three feet high, it will cause them to thicken up and grow very strong. Especially is this the case with the Clark and Philadelphia.

We usually pick our fruit every other day—that is, by picking *half* the plantation every day and alternating.

We prefer the *square* splint baskets for shipping; and pints are far preferable to quarts, for the less fruit there is in a body the less apt it is to heat and spoil. These are packed in a slat crate, as represented in



figures 71 and 72. They will receive four tiers of baskets of fifteen each, making sixty in all. The first tier is placed on the three horizontal strips that form the bottom; and before putting in the second, the frame or slat, (fig. 71,) is placed on the baskets already in position, so that each bar rests on the two edges of the contiguous ones holding them firmly in place.

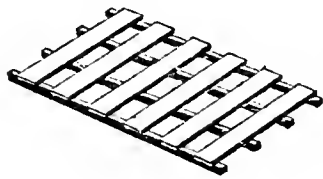


Fig. 71.

The frame is made of four bars, each two feet long, and half an inch square, across which six thin boards, two inches wide, and an eighth of an inch thick (slit from two inch plank) are fastened by small nails. The whole box is filled in the same way. When the top board is nailed on, the berries will carry safely long distances, if kept right side up. The elasticity of the slats assists materially towards this result.

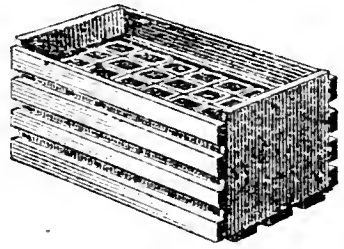
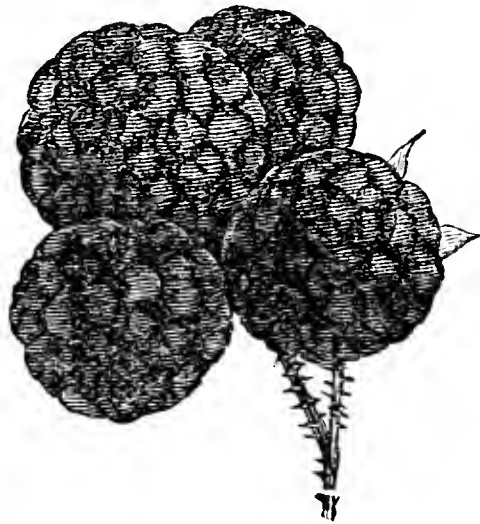


Fig. 72.

We usually make up plenty of these cases, and if express charges are so high as not to pay to have the case returned, we have our consignee "nest" the baskets together and send back by express, and the crates returned as freight or by canal boat. Still they are made up so cheap that if they are not returned it is no great loss.

Of the Red sorts, we can recommend for *general* cultivation and *profit*, the Kirtland, Clark and Philadelphia, (fig. 73.) The first is a medium sized

Fig. 73.—*Philadelphia*.Fig. 74 — *Mammoth Cluster*.

fruit, but very prolific; bright scarlet, delicious, and yielding its *whole crop* at two or three pickings; early, making it one of the most profitable with us. The second is a magnificent fruit, large size, bright scarlet, productive and hardy; and the last the *most productive* raspberry we have ever grown of the red sorts; flavor No. 2, but hardy as a burr oak, and a *sure bearer every year*; sufficiently firm to market in pint baskets.

Of the Blacks we would recommend the Davison Thornless and Doolittle for early, the Miami and Seneca for medium, and Mammoth Cluster (fig. 74)



for late, all very hardy and productive, and keeping up a supply for at least six weeks, although the main pickings for marketing last but about four weeks.

We usually pay two cents per quart for picking. The average price has been twelve to fifteen cents per quart. If planted with care, with oft repeated cultivation, 75 to 100 bushels per acre is a fair average crop from full grown bushes—that is, the second year after setting. If the old wood is kept out as described, plenty of enriching compost and mulch supplied, a plantation will last six to eight years. Two hundred dollars per acre is a fair average amount to realize from a well tended acre of raspberries—not counting in profits realized from plants. After the first year, there is no cost of plowing, or plants and setting, and but few weeds will grow if *thoroughly* worked the *first* year.

For family use, they can be set in a row next to a fence. An ordinary family, say of six persons, can rely on having their table *bountifully* supplied for six weeks, by setting six of each, Davison Thornless, Doolittle, Seneca and Mammoth Cluster, and six of each, Kirtland, Clark and Philadelphia. If it is in a section where peaches do not thrive, then set, by all means, twelve Lum's Fall-Bearing and Catawissa; cut out the old wood entirely each fall, and grow the new wood only each season, trimming and nipping them back until August; and they will yield a splendid crop of fruit *late in the fall*, especially if *heavily* mulched with coarse litter the early part of the season.

## ORNAMENTAL PLANTING.

**H**ARDY ORNAMENTAL SHRUBS.—At a meeting of the Horticultural Society of Western New-York, a vote was taken on the best, hardiest and most reliable shrubs, proved such by experience in the western part of the State. Only seven ballots were handed in, and the following was the result :

Deutzia gracilis,.....	6 votes.	Double Scarlet Thorn,.....	3 votes.
Wiegela rosea,.....	do.	Plum-leaved Spiræa,.....	do.
Purple Fringe,.....	do.	Double Flowering Almond,.....	do.
Japan Quince,.....	do.	Tartarian Honeysuckle,.....	do.
Spiræa lanceolata,.....	5 votes.	Prunus trilobata,.....	do.
Deutzia crenata, (double,).....	do.	White Lilac,.....	2 votes.
Persian Lilac,.....	do.	Double Althea,.....	do.
White Fringe,.....	4 votes.	Forsythia viridissima,.....	do.
Double Syringa,.....	do.	Pink Flowering Currant,.....	do.
Snowball,.....	3 votes.		

The following had one vote each : Daphne mezereum, Josikea Lilac, Double White Almond, Purple Barberry, Siberian Lilac, Silver Bell, Magnolia obovata, Deutzia scabra, Rose acacia, Barberry, and a few others.

THE BEST RHODODENDRONS.—Tilton's Journal describes the great success in the culture of the Rhododendron at Mr. Hunnewell's place near Boston. The ground is prepared in the most thorough manner. They are sheltered, but not shaded; and not less than fifteen feet is allowed to each plant when fully grown; and thus sheltered and managed, they become clothed with verdure down to the ground. "Imagine," says the writer, "a Rhododendron fifteen feet in diameter, wholly covered with flowers and foliage! One such plant would be worth more than a hundred of the bare, lean, straggling stems too often shown." The following select list of sorts is given as combining variety of color and uniform hardiness, viz., *Purpureum*, *Grandiflorum*, *Archimedes*, (scarlet,) *Everestianum*, *Album grandiflorum*, *Roseum magnum* and *Chancellor*.

FORMING LAWNS.—There are three modes of forming lawns. The first—to mellow the surface and sow grass seed thickly, which coming up with the weeds, the seeds of which are in the soil, much labor is required afterwards to get all these out by hand. The second is to plow and re-plow, harrow and re-harrow, for a season, in order to work out all the foul seeds, allowing time between each operation for the seeds to germinate, and remembering that many seeds will not grow if buried over an inch deep; hence the necessity of repeating the stirring many times, in order to bring all parts up to the surface. Then sow fine grass seed, such as red-top, June grass, white clover, &c., mixed, and at the rate of at least one bushel per acre, rolling it in. This is to be done as early as possible in spring, and then, when it is a few inches high, mow it closely as often as once a week the season through. This will give a handsome green carpet-like velvet. The third mode, usually the most expensive, but the most speedy and certain, if well performed, is to *turf* the surface. First make the soil deep and mellow, and even at the surface; then pare from an old pasture the turf, cut very smooth, with perfectly parallel and straight sides, and of a perfectly uniform thickness of about two and a half inches; spread this turf over the mellow surface, as smooth as a floor, and roll evenly. If manure is applied to make the soil rich, it must be finely pulverized, and thoroughly and very evenly worked in.

CARTING SAND ON GARDENS.—We have covered a piece of clayey garden soil with a layer of sand two inches thick, which, when thoroughly worked through, greatly improved the character of the soil, and changed it from one of a heavy clammy character to a fine friable loam. This was done twelve years ago, and its improved character continues without any abatement. In fact the sand cannot work out—it must remain perpetually where it is put. It is here that the practice of drawing on sand has its great and peculiar advantage. Manures will dissolve and become abstracted by plants; but sand neither dissolves, evaporates, nor goes into plants.

NORWAY SCREENS.—A young planter inquires the cost of a good screen made of Norway spruce trees, intended to form both a screen and barrier

—not for the exclusion of rampant cattle, but to prevent the ordinary passage of men and animals.

For this purpose, trees set three feet apart, would probably answer the desired purpose completely in the course of six or seven years, and partially in four or five years, or even sooner—especially if the soil is kept clean, mellow and well cultivated for several feet on each side of the line. The trees, if they have been carefully taken up and set out well, will recover from the check of removal in a year or two, if two feet high—say one year is entirely lost by transplanting. If three or four feet high, they will not recover quite so soon; but much will depend on the care and skill of the operation, and on a moderate cutting back in the spring when set out. They will grow about three feet a year, (only one and a half if not cultivated,) and in six years will be fifteen feet high if desired, or if not shortened down any. Plants from one to two feet high may be had for about \$15 per hundred, of the larger nurserymen; of some, cheaper; and a hundred will set out 300 feet, or 18 rods. The plants, freight, plowing, setting, &c., will cost, with the trees, about one dollar per rod, if of this size; but they may be selected of smaller size, so as not to come to more than 60 to 75 cents, set out. Cultivating the ground for a few years, till the trees are well under way, so as to keep them clean, and the necessary cutting back, need not cost more than 25 cents a rod, if repeated five times a year for three years, and twice a year for two additional seasons. By repeating it often, the work will be less expensive and be of much more use than if done at remote intervals. With interest, the screen, when seven years old, will not cost two dollars a rod, and will not exceed in expense a good post and board fence. The screen must not be sheared, but projecting and obtrusive limbs shortened back. The side limbs and smaller branches and shoots will form such a barrier that neither men nor animals will be disposed to go through, unless some great and special inducement invite a hard effort.

**HONEY LOCUST HEDGE.**—Of late years many miles of Honey Locust hedges have been planted in the northern States, the extreme hardiness of the tree giving it an important advantage in this respect over the more tender Osage Orange. Its straggling growth, however, renders extra care necessary in cutting back and training to the proper form, and preventing open spaces below. A fatal error on this point prevails extensively. Many of the young hedges are not cut down one-half as low as they should be during their early growth. We have taken the trouble to measure the successive heights at which these cuts are made, in a large portion of the hedges planted of late years, and which the owners obviously mean shall be well managed, so far as they understand management. One in particular, which has been carefully cultivated, and which has excited a good deal of attention, has the first cut the year after planting, five inches high; the next eight inches; the third sixteen inches, and the fourth eighteen inches—the height at the present time being nearly or about four

feet—fig. 75 showing the hedge as seen endwise, with its thin and feeble appearance below. Fig. 76 represents a hedge cut as it should be—the first time very near the surface; the second, three inches higher, and subsequently four, five and six inches, or but little more. Fig. 77 shows the appearance of an attempted hedge, where

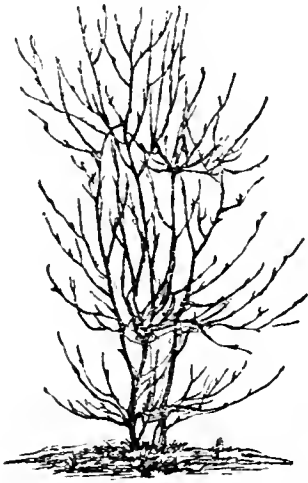


Fig. 75.—*Badly Cut Hedge.*

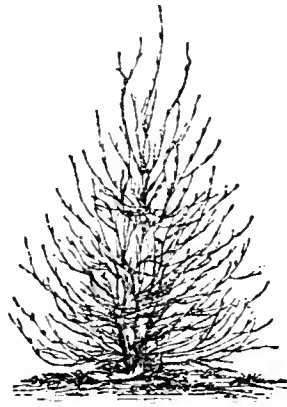


Fig. 76.—*Properly Cut.*

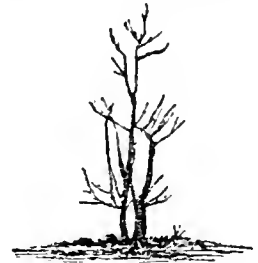


Fig. 77.—*Cut in Leaf.*

the cutting back is deferred till the leaves are partly or wholly expanded, producing a serious check, and preventing a vigorous growth of shoots. The cutting back just described, for the purpose of inducing a thick, dense mass near the bottom, is especially important for the Honey Locust, which, unlike some other hedge trees, tends to grow slender and with comparatively few branches—so much so that A. J. Downing once remarked to us, that it had “no hedginess about it,” and he regarded it as of no value for this purpose.

**FENCES AND TREES BY THE ROADSIDE.**—An effort to do away with roadside fences—a movement which, with suitable planting and care, would render our country thoroughfares much more beautiful and attractive than they are at present—is now going on in Western New-York, as we learn from a correspondent, who says :

“Along the road leading from Victor Depot to the East Bloomfield railroad station, (about six miles,) many of the farmers have taken away the street fences, and the change for the better along the road is very striking. The highway line is marked only by a row of apple or other fruit trees, and the grass is cut from time to time along the track. All the stones and rubbish are kept away, and the ground is becoming constantly smoother, and to travel over it is like travelling over a continuous farm, with occasional houses and out-buildings. I noticed that some had just piled their rails, and I could see that it had commenced on one of the cross roads.

“One cannot help regarding the people as more civilized than in regions where the practice has not yet begun, and will it not have an improving liberalizing influence on all who come in contact with it? I am glad to see that a course that is so evident an improvement is extending, and commends itself to all within its influence.”

## DESIGNS FOR GROUNDS AND GARDENS.

THE PLAN for a small village door-yard is shown in fig. 78. The house stands about thirty feet back from the street, allowing space for small trees and shrubs, and, if desired, some flower beds. The space

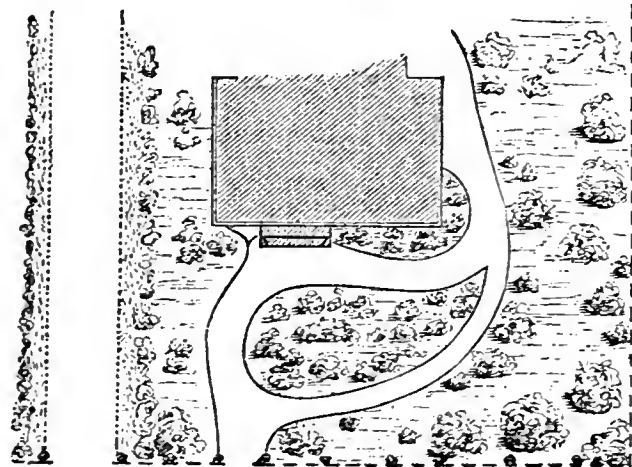


Fig. 78.—*Small Village Door-Yard.*

in front of the house is planted with roses and other small shrubs, but these might give place to bulbs, annuals and herbaceous perennials of the larger kinds, in which case great care should be taken to keep them in the neatest and most perfect order, as there is no excuse whatever for allowing so small a piece of ground to present a slovenly appearance. The principal walk is up to the front of the dwelling, but a side passage to the right allows a more secluded access to the rear. The track on the left admits coal and other wagons to the kitchen and back grounds; but if the lot should happen to be too narrow for this passage, it may be entirely omitted, and the hand-cart or wheelbarrow employed.

Fig. 79 shows the plan of a still smaller yard, the house standing within twelve or fifteen feet of the street. The passage on the left is for the wheelbarrow to the vegetable garden. The shrubbery in front must be of the most select kinds, and be symmetrical growers, so that the place may have a polished appearance.

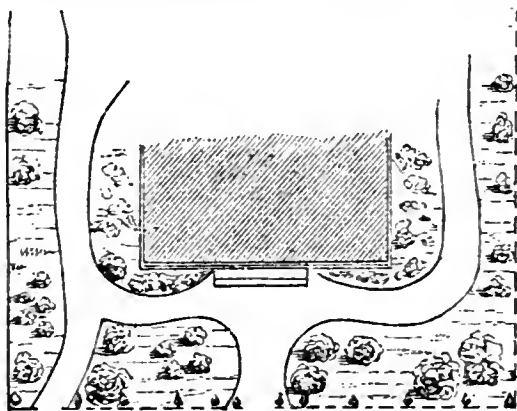


Fig. 79.—*Smaller Door-Yard.*

Fig. 80 represents the plan of grounds where one acre is occupied with the dwelling and the surrounding ornamental planting and flower garden. It is supposed to face the west, and the arrangement of some of the details is made in accordance with this position. With a slight alteration it may be varied to suit any other aspect. The kitchen and fruit garden may be extended back to any desired distance, so as to embrace one or two acres, or more.

But little explanation is required. The carriage and wagon entrance, on the left, separates on approaching the house, carriages taking the right,

and loaded wagons and carts the left, to the barn or rear grounds. Along the left boundary, and facing the south, are placed hot-beds, &c., the materials for which are easily obtained from the stable. The flower garden lies on the south side of the dwelling, the circular, elliptical and arabesque beds being cut in the smooth turf, and kept well cultivated with bulbs, annuals and herbaceous perennials. Similar beds may be occupied with the smaller shrubs; the larger shrubs and small trees, after they become well established, will grow in the turf. The nearer of the two seats or summer-houses, is placed where seclusion is desirable; and the rear one at a pleasant view of most of the grounds.

The walks need no explanation; the one beyond the rear summer-house passes along the fruit garden, and may or may not be flanked with or-

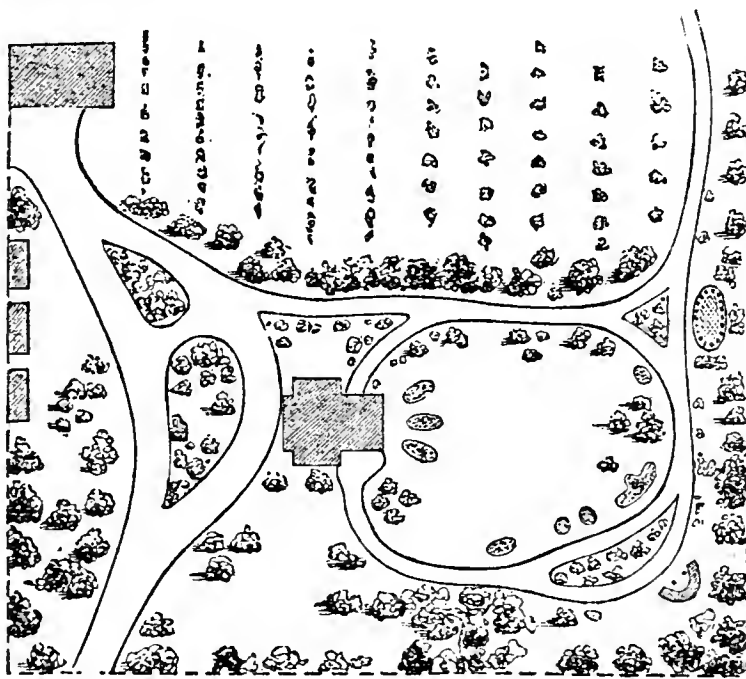


Fig. 80.—One Acre.

na-  
mental shrubbery, as the owner may desire. An irregular screen of small evergreen trees and shrubs, nearly excludes the view of the fruit and kitchen gardens, and along the rear of this screen is the space for the horse to turn in cultivating the rows.

The portion of the garden nearest the barn is devoted to vegetables, planted in drills between rows of currants,

gooseberries and raspberries, which thus obtain their share of good culture at little expense and trouble, and are too low to shade the annual crops.

On the right are the lines of dwarf apples, dwarf pears, grapes and other fruits requiring nearly exclusive possession of the ground, and like the smaller plants, kept cultivated by horses. A shallow plowing early in spring, before the buds swell, will mellow the soil and do no harm to the trees should a few roots be broken, while serious injury might result from tearing the roots after the leaves are out. The cultivation for the rest of the season is therefore done with the cultivator and harrow, the latter leaving the surface smooth to pass over in gathering the fruit in autumn.

One good gardener will keep such a place as this in finished order. The acre of ornamental ground should be mowed once a week in the early part of the season, requiring one day or more. Another day in the week will enable him to dress the walks and flower beds. The remainder may

be devoted to the rear gardens, and to various other or miscellaneous jobs, in connection with the grounds. More labor might be expended in keeping the whole in a highly finished condition, bedding out flowers as they bloom from propagating houses, &c.

A village lot, about four or five rods wide, is represented by fig. 81. The principal object is to obtain a small flower garden and shrubbery on an area of about one-tenth of an acre, and allow space for a kitchen garden and a few of the smaller sized fruit trees on nearly twice as much ground in the rear. If desired there may be a small horse or cow barn in the rear corner on the left—the “cart-way” otherwise being intended only for conveying coal and other heavy articles to the kitchen cellar. A small

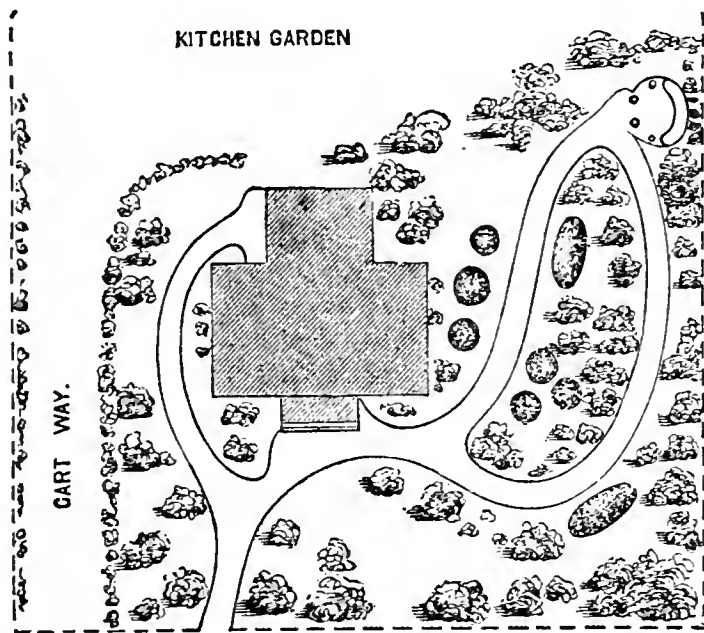


Fig. 81.—Lot Four Rods Wide.

screen of evergreen trees runs on the right of the cartway to separate it from the rest of the grounds, and the boundary on the left of this way may be planted with grapes, or with raspberries; the former being trained on the boundary fence, and the latter kept snugly within bounds by a slat running parallel with the fence, and about six or eight inches from it—the included space holding the canes spread out like a fan.

No large trees are planted on these grounds, as they would after a while occupy too much space and shade the smaller shrubbery and flower beds. Small trees may occupy the most remote corners, large shrubs the more open space, and small shrubs only be placed near the flower beds, where it is important to preserve an open space for full sunlight. A few plants will flourish in the more shaded spots. The flower beds are mostly circular, with two elliptical ones. The circular beds are most easily laid out and kept in exact shape, according to the mode described on page 153 of the fifth volume of RURAL AFFAIRS. On the same page the mode of drawing elliptical figures is also distinctly pointed out.

For the smaller trees and large shrubs, the following are among the best, hardiest and most common :

Chinese Magnolia, Soulange's Magnolia, Tartarian Honeysuckle, (red, white and pink striped,) the large Philadelphus, Hawthorn, (white, pink and crimson,) common and Siberian Lilacs, Cornelian Cherry, Silver Bell, Virgilia, Snowball, Purple Fringe, Cercis, &c. Among the finest hardy



evergreens of this size, are the Dwarf Norway Spruce, Dwarf Pine, the hardier Dwarf Arbor Vitæ, Cembrian Pine and Chinese Juniper.

Among the best of the medium and smaller shrubs may be named the Japan Quince, (pink and scarlet,) Dwarf Horse Chestnut, Sweet Scented Shrub, Japan Globe Flower, Wiegela, Dwarf Almond, Forsythia, Deutzia, the Spiræas, Tree Pæonies, and pre-eminently the Roses.

After such a place as this is well planted and under way, the ornamental part of the grounds may be kept in fair order by the owner if he has taste and zeal enough to get up at five o'clock and occupy an hour or two every morning before breakfast in dressing the grounds and conversing with the flowers, before he leaves for his workshop, office or counting room.

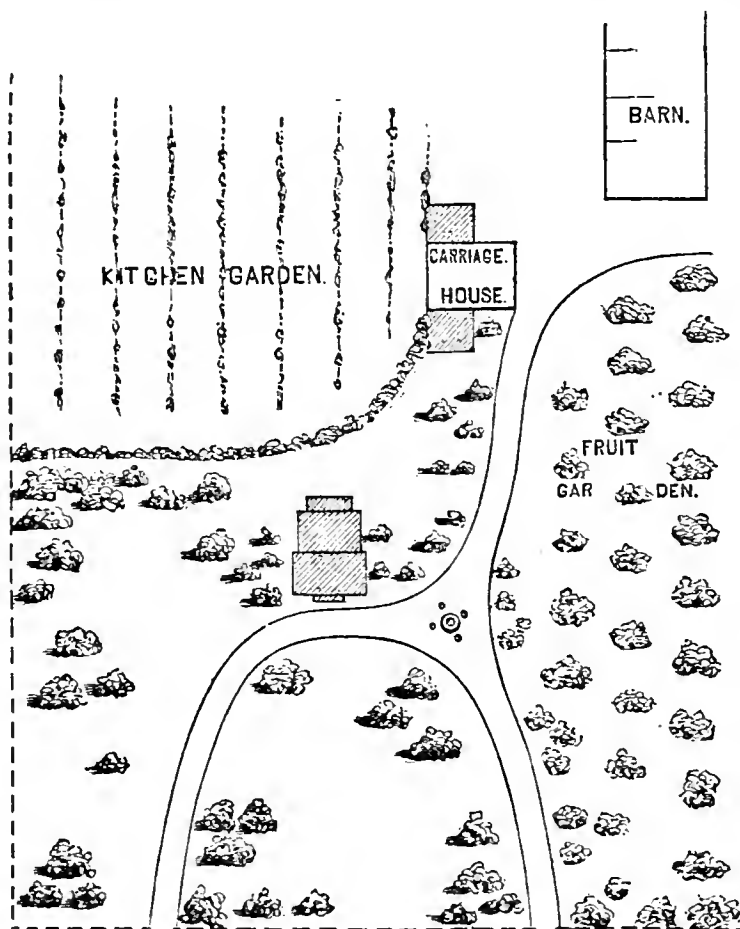


Fig. 82.—*Farm Grounds.*

The exercise and fresh air will give him health and appetite, and the beautiful forms with which he thus holds intercourse, will tend to increase the refinement of his mind. If he has children, they will like home better than other places, and become inspired with his taste.

Fig. 82 represents a comfortable farm residence, where the owner wishes to have everything neat and in good taste, but cannot expend much in ornamental gardening. The grounds are laid out in as simple a manner as practicable, so as to accord with good

taste. As represented in the plan, they comprise from two to three acres, including the lawn, half of the fruit garden, and most of the kitchen garden. The dwelling is approached by a good and well made gravel road, and the surrounding grounds are planted with handsome shade trees; those towards the rear may be the hardier, more vigorous and symmetrical fruit trees, such as will flourish in grass—as for example, the Buffum, Boussock and Howell pears, and the Elton, Rockport and Black Tartarian cherries. The lawn should be mown at least three or four times early in summer, or it may be kept short by turning in, a part of the time, a flock of sheep,



when they can be easily seen, and injury to the trees prevented. The fruit garden may be kept cultivated by a shallow plowing early in spring, and a few harrowings afterwards, and perhaps one or two rollings near the season of fruit, to keep it smooth to the pickers. The ice-house, hen-house, and other of the smaller buildings, may be placed near the carriage-house. An evergreen hedge or screen separates the kitchen garden from the front grounds. A water reservoir and hitching posts, are placed at the right of the house, at the intersection of roads.

By more expenditure of labor and attention, flower beds may be cut in a circular form near the dwelling, and the lawn may be kept in the best order by mowing every few days. The main object, however, is to present in this plan simple, neat and cheaply kept grounds for a farm residence, with little expense.

### A WIND-EXPOSURE AND LAKE-PROSPECT.

A FRIEND who had purchased a building lot of several acres on an elevated ridge commanding an extensive and beautiful prospect on one of the lakes of the western part of New-York State, found himself in

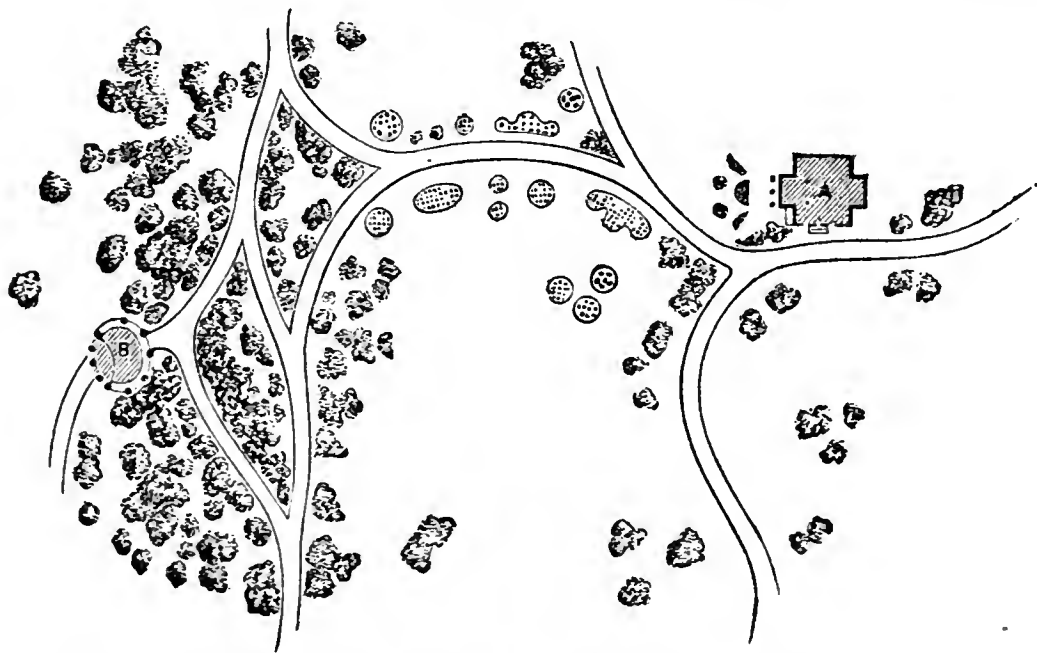


Fig. 83.—A., *Dwelling*—B., *Summer-House*—*Flower Garden between.* the dilemma of either shutting out this fine view by trees, or of exposing his house to the sweep of the prevailing westerly winds in winter. He applied to us for relief from the difficulty, and we accordingly proposed the plan shown in the accompanying engraving, (fig. 83.)

As it was impossible to have the lake prospect in full view, and at the same time to shut off the sweep of the winds from that direction, it was

proposed to relinuish the whole of the western landscape from the windows or verandahs of the dwelling, and to secure this view from other portions of the grounds. On this side of the house, and at a proper distance from it, and from the western boundary of the lot, irregular belts of trees were to be planted, mostly evergreen, with some deciduous intermixed, or rather skirting their sides. The evergreens would serve as a screen, and the deciduous trees soften the hard outline which they would otherwise present. Such hardy and strong growing evergreens were to be employed as Norway Spruce, Menzies' Spruce, Scotch Pine, White or Weymouth Pine, common Hemlock, Black Spruce, Austrian Pine, &c. The exterior or outer portions of these belts should be of the lighter or more airy species, as the Hemlock and Weymouth Pine, more loosely scattered, so as to blend properly with the deciduous plantings. These, when well grown, would entirely shut off the west winds in winter, and exclude the lake prospect in summer from the dwelling.

But by placing the ornamental garden, (see engraving,) with its flower beds cut in the smoothly shaven turf, in the direction of these belts, the walks might properly be made to pass into them,—where a summer-house or two was to be placed, entered on the wooded, eastern or screen side, and on looking out towards the west, the whole of the view would be at once presented in this direction—including the village spires below, the lake bordered with woods, green fields, distant blue hills beyond the water, and the western horizon. A sufficient portion of the grounds west of these dense plantings were to be reserved, and more sparingly set with trees, so as not to cut off the view, but to give a pleasant aspect to the whole picture.

There are many places where a difficulty similar to that here alluded to is found to occur; and by resorting to a like expedient, necessary shelter may be secured, greater variety given to the landscape effect, and everything of interest secured to the grounds.

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## FRUIT CULTURE.

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**S**TRAIGHTENING UP TREES.—If newly set trees of moderate size have been well dug up, with plenty of roots, and the roots well spread on every side, they will maintain a stiff, upright position, and need no additional staking or stiffening. But they have not always received such careful attention; and in this case they may need straightening up. Nothing can be much worse for a tree than the bending about in the earth by strong winds. They will sometimes stand well till the leaves come out, after which the winds have more purchase on them, and staking may be required.

**STRAWBERRY RUNNERS.**—The formation of runners by the stools or

hills of strawberries, exhausts and checks the plants more than a dense mass of weeds. If you wish them to become strong, and bear large, excellent fruit, and plenty of it, keep the runners cut off, and repeat the operation once a week through the summer. Begin the work as soon as the plants *begin* to form runners, and not after they have sent them out in profusion—which is usually immediately after bearing time. If intended for increase, and to form new beds, a small portion of the bed may be permitted to run and root.

**BLACK KNOT ON THE PLUM.**—Remember the old and well tried remedy of cutting off as fast as the first indications appear. Do not wait till the tree is covered with these excrescences and destroyed. The complaint sometimes made, that cutting does not cure the malady, when the remedy is applied months too late, is not more reasonable than to denounce water for putting out fire were the engine and hose companies to come on the ground and commence playing on the heap of ashes the year after the conflagration. The labor and attention needed to keep the plum thus clear of the knot are not half as great as to keep a potato or cabbage patch clear of weeds, which every one so willingly performs.

**THINNING APPLES.**—Remember that it is not more than one-fourth the labor to thin out the small, defective, scabby or stung apples, when they are quarter grown than to hand-pick and assort them the next autumn—and the selected specimens which are left have a better chance to grow, and sell at a higher price in market.

**GRAPES OVERBEARING.**—Do not allow grapevines to overbear. Many a young vineyard has been injured, if not ruined, by carrying too much fruit. Novices often delight to show how many grapes they have on their young vines, and to tell how many tons per acre their new vineyards have yielded. They might as well boast of making a young horse sick by hard driving. Thin out the bunches as soon as they have set, and let the crop be small. It will be all the better in quality, and the vines will preserve their health and vigor.

**GRAPE LAYERS.**—These may be easily made on a small scale by the amateur, or by the farmer who wishes to plant out an additional vine or two, by laying down a good strong shoot of this summer's growth, and burying it a few inches deep at the middle. Roots will be thrown out at the joints, and by taking up before winter, and cutting in two, two good plants will be made from each layer. If the laying down is done too soon, the shoot will be soft, and may rot; if left too late, there will not be time enough for the roots to form. The proper season is just when it is beginning to assume a little of the hardness of wood. The formation of layers exhausts a vine in the same way that runners exhaust strawberries; they should therefore be sparingly made from bearing vines. If the summer happens to be very dry, the soil at the buried part must be kept moist by mulching.

**CULTIVATING ORCHARDS.**—We see a successful experiment stated in some of the papers; performed by H. Dayton of Alden, Erie Co., N. Y.

His orchard of two and a half acres, in grass ten years, which had produced wormy and scabby fruit, and in small quantity, was plowed very shallow in autumn, and harrowed and cultivated a few times early the following year. The result was it bore four hundred and fifty barrels of fine apples last year, worth about six hundred dollars.

**FRUIT ROOMS.**—The best fruit rooms are built above ground. They admit of more perfect control of the temperature, and may be kept cooler through autumn—a matter of much importance. For such rooms the walls must of course be double, and filled in with powdered charcoal, ashes, tan, or similar substance, which is rather better than to have the enclosed space occupied only with air. The ceiling or roof must also be double, and well secured from the intrusion of frost from above. Such rooms may be made to open on the north side, so as to be kept cool till the advent of the freezing weather of winter. Fruit, in an apartment thus managed, will keep much better than otherwise. We have experimented fully on this point, and observed the difference between the keeping of winter apples taken directly from the trees and placed on the shelves in October, and others placed, when gathered, on the floor of an out-building fronting north, and allowed to remain there nearly till the first day of December. The latter, at a careful estimate, *did not furnish more than one-quarter the number of decayed specimens through the winter* as those placed at once in the warm cellar when gathered.

The walls of fruit houses above ground may be built of brick, with a hollow space between the two portions or walls, or of double wood siding filled in. The windows should of course be double, or the sash at least, with double glass. The entrance door should also be double, or made of two parts, with a space between.

**FRUIT LADDER.**—An improvement in the common tall step-ladder is

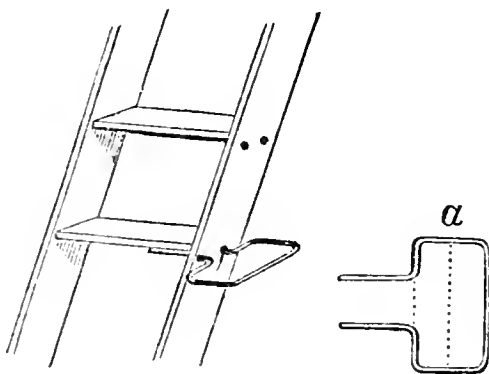


Fig. 84.—*Fruit Ladder.*

made by attaching a basket support to the right-hand board. This support is made of rod-iron, about half an inch in diameter, and bent when red hot in the shape shown at *a*. This is inserted in the two holes shown in the ladder, (fig. 84,) so that the two ends pass closely below the step, which holds them firmly. On this the basket is set, and both hands are then at liberty to work, which is a great advantage when the limbs must be held for picking. Smaller rod may be used if pieces are welded across at one or both places shown by the dotted lines.

**DRYING FRUIT.**—A correspondent in Illinois informs us that he has tried one of the small fruit drying houses figured and described in a former volume of the ANNUAL REGISTER—that it heats quick, with little wood, and needs constant watching. For small quantities and home use it does well, but is not

large enough for a market orchard, where wagon loads are in danger of rotting. He accordingly built four houses, each 6 by 12 feet, and 6 feet high. There were three tiers of drawers on each side, and six drawers to a tier. The studs were 2 feet apart, 2 by 3 inches; sleepers for drawers to run on, 2 inches square; stuff for drawer frames, 1 inch square; slats, half an inch by one inch—all cut to order at sawmill. Five days' labor built each house. A large stove is set under the drawers, and fresh air pours in at the bottom. A man and two children will gather, cut and dry nine bushels daily; the house may be refilled every day. Twenty-two thousand dollars of dried fruit were sold in 1867, at one station.

**THE TWO MOST POPULAR CHERRIES.**—At the Philadelphia meeting of the American Pomological Society, Coe's Transparent and Early Richmond had the largest votes—the former for the eastern and middle, and the latter for the western States.

**HIGH PRICE FOR STRAWBERRIES.**—The editor of the Gardeners' Monthly says that he made a journey of three thousand miles, and saw only one place where the hill system and constant clipping of runners was practiced in perfection—at Knox's, at Pittsburgh. The result was that while all through the region visited, strawberries sold at only about four dollars per bushel, Knox obtained as high as twelve dollars for his. The Jucundas were often large enough for twenty-five to fill a quart. These sold for one dollar a quart. The Fillmore and Agriculturist were nearly as fine.

**PEAR BLIGHT.**—Quin, in his "Pear Culture," says that out of twenty-nine cases of fire blight, (fourteen of which proved fatal,) there were 16 Glout Morceau, 4 Flemish Beauty, 4 Winkfield, 3 Belle Lucrative, and 2 Louise Bonne Jersey. This is additional proof of the liability of the Glout Morceau to the disease. He finds the old remedy best, of very promptly cutting off some distance below the disease, and burning the limbs—and re-grafting if cut very low down. Others have practiced successfully cutting down within a foot or two of the ground, and allowing a new low head to spring up from the stump.

**FRUIT IN OHIO.**—The Report of the Horticultural Society of Ohio says that the apple crop of the State in 1867, was 9,400,000 bushels—which, at 50 cents per bushel, would be more than four and a half million dollars. The peach crop was estimated at 1,400,000 bushels, worth more than three and a half millions.

**SOUND ADVICE.**—A. M. Purdy writes to the Rural New-Yorker, that no one must expect his strawberry plantation to pay on the "slip-shod" plan. "Don't wait till you *see* the weeds growing before you start the hoe or cultivator. Remember, you can go over a plantation four times, if done in season, where you can once if it gets weedy and surface-stiff."

**BLACK KNOT ON CHERRY TREES.**—A correspondent of the New-England Farmer says he has tested the old well-tried remedy of excision for thirteen years, and the trees continue handsome and vigorous, and bear abundantly every year, while all around him they are spoiled by the black

knot. He cuts the branch off *as soon as it is affected*, and if the limb is too large, the knot is shaved off clean. We have pursued this course for twenty-five years on the plum, and have been equally successful. The remedy is perfectly simple, very easy, and requires but little labor. All that is necessary is prompt attention at all times.

DEEP PLANTING.—The editor of the *Gardener's Monthly* says that "too deep" planting kills ninety-nine hundredths of all the strawberries that die in the year from transplanting.

FRUIT AND DRINK.—P. J. Quin says in his new work on Pear Culture: "If the time should ever come that one-half the amount now spent for alcoholic decoctions should go for choice fruit, what a difference there would be in the homes of many of our poorer classes, now rendered almost desolate by the use of intoxicating drinks!"

CURCULIO.—An acquaintance asked how we obtained uniformly such heavy crops of plums. We informed him of the manner of stretching sheets, driving a spike into each tree to pound on, and jarring down the insects for thumb-and-finger killing. "Ah! but he had tried this way." "What! every morning, regularly?" "Yes—quite a number of times—*nearly every morning.*" He, however, admitted that sometimes he omitted it for two or three days; and, on further questioning, it was found that he had performed the operation only "seven times—he was not quite sure,—perhaps it was six times." This is the way that the remedy proves a failure. Instead of trying it at least once a day, (twice a day when the insects are abundant,) without a single intermission, till the last insect is killed, it is done only occasionally or semi-occasionally. One might as well omit feeding his horse now and then for two or three days. "Neighbor Snoggs, my excellent old cow has dried up—what do you think is the matter?" "Do you milk her regularly?" "Oh, yes—or at least mostly so. I milked her yesterday,—and last Monday,—and, I believe, once the week before, but I'm not sure." This is the way in which many do their work on fruit trees, and wonder why they have such poor luck—and believe "these vaunted remedies are humbugs."

PROPAGATING BLACKBERRIES.—Purdy & Johnston's *Small-Fruit Recorder* gives compactly the following directions from their extensive practice: "Cut the roots of blackberries up in the fall; pack away in sand, and sow in *shallow drills* in the spring, like peas—scattering over the surface a little coarse manure."

CAPRICIOUS MARKETS.—A cultivator in Western New-York lately sent several half-barrels of selected Bartletts to his commission agent in New-York City, and although the market was overstocked, they sold for six, seven and nine dollars per half-barrel. Others contained very fine selected specimens of Doyenne Boussock, which many would regard as decidedly superior to Bartletts, and they could not be sold for more than three dollars and a half. So much for a fruit being popular and well known. Some of our readers may not have heard of the gentleman in the western part

of this State, who, in the palmy days of the Virgalieu, marked his barrels, (all containing specimens of uniform quality,) a part with the well known name of "Virgalieu," and a part with the more approved name of "Doyenne." The former sold at nine dollars per barrel, the latter for only five.

**SELECTING AND ASSORTING FRUIT.**—The truth cannot be too strongly impressed on fruit-raisers, that on nothing does success in marketing more depend than on selecting good specimens only. The work should be commenced by thinning on the trees, while the young fruit is yet small, and its importance should not be lost sight of at any subsequent period. Cases have occurred where owners, in their eagerness to sell everything, have put a few poor specimens in a barrel of fine market pears, and these poor ones have spoiled the sale of the whole. Very fine pears are often sold at twenty-five or fifty cents apiece; on the other hand, a few bad ones will so reduce the market value of the rest as to cost the owner not less than twenty-five or fifty cents each. The editor of the Horticulturist says that a peach-grower, having discovered that his men brought in many poor peaches, had them assorted carefully before shipping, and forty baskets of cullings taken out of every hundred. The sixty good ones were then sold for \$1.25 per basket, bringing \$75. The unsorted ones would bring only sixty cents per basket, or \$60 for the whole, while the freight on the forty baskets of poor ones, mixed with the good, would have greatly increased the freight and expenses.

**CULTIVATING PEAR ORCHARDS.**—Randolph Peters of Wilmington, Del., writes to Tilton's Journal of Horticulture that he has an orchard of sixteen thousand pear trees, half standards and half dwarfs, four, five and six years old. The Bartletts and Belle Lucratives are producing from half a peck up to a bushel per tree. A few were left without cultivation. These have not done half so well as the others, and the fruit averages only one-third size on these. He has scarcely lost a tree by fire blight in all.

**PROTECTING THE TRUNKS OF PEAR TREES.**—Orchardists are familiar with the disease that affects the bark on the bare trunks of standard pear trees, particularly at the south and west, where there is so much hot sun at mid-day. The Northwestern Farmer states that a fruit-grower has for several years protected his trees against the hot sun by adjusting a board to shield them from the two o'clock rays, with entire success—adding that "since he has tried it, he has lost no more trees, the bark on that side remaining as smooth and as soft as on any other part of the tree."

**CANKER WORMS.**—Robert Manning of Salem, Mass., gives the result of his experience and observations on this insect, in Tilton's Journal of Horticulture. Tar applied to a belt of coarse paper or cloth, placed around the tree, does well at first, but soon forms a crust, especially on cool nights, over which the worms pass. Mixed with oil, the tar is better, but the difficulty is not removed. Cheap printer's ink is still better. All



need frequent renewal, all harden by cold, and the surface must be often stirred with a brush. A large string around the lower edge prevents the tar from running down on the bark. Troughs made of tin, lead, &c., to hold the tar or oil, are better but more costly. If the insects are already in the tree, they may be jarred down, or brought down by throwing sand among them, and when down they are eaten in great numbers by young ducks, who, after gorging themselves with the worms, lie down to digest them, and in a quarter of an hour are ready to begin again. This insect is making great progress in some parts of the country, and we have latterly observed many of the fine orchards in Western New-York, between Geneva and Canandaigua, stripped of their leaves. They spread slowly but surely, unless checked.

**REGISTERING YOUNG ORCHARDS.**—Do not trust to memory or to perishable labels, to know how many trees or rows of Baldwins you set on this side, or how many of Greenings on that side of the orchard, or what kinds are placed in the different parts of the fruit garden. Register every tree carefully and accurately—first in a memorandum book, or on a slip of paper, to be copied afterwards into your account book or some other book which you will always readily have at hand; or, better, have a blank book expressly for a *Garden and Orchard Record*, where the place of every tree is noted, as well as your other plantings and experiments. Then, when the young trees begin to bear, you need not call in all your neighbors to ask them the name of this apple and that pear, with a very fair chance of half being named wrong, and endless confusion in sorts as a consequence.

**GRAFTS.**—Cut these in autumn if you have a good place to pack them. They have more vigor in spring than if exposed to all the cold of any severe winter—this is especially the case with plums, pears and cherries. Pack them in boxes of damp, not wet, moss; or in small boxes of damp, not wet, sawdust—large boxes of sawdust will heat. Mark every sort carefully and plainly. Another good way to keep scions through winter is to place them snugly in a box till it is more than half full; next nail in two or three cross-pieces to hold them, and then bury the box inverted with several inches of earth over it, on a dry spot or knoll. They will thus be kept from contact with the wet earth, and will receive enough moisture from below to keep them fresh and plump. Cuttings of currants, grapes, quinces, gooseberries, &c., are to be taken off soon, and they may be kept till early spring in the same way as grafts, or they may be set out at once, pressing the earth compactly against them, and covering well till spring with manure, litter, leaves or evergreen boughs.

**STRAWBERRIES** are injured in winter by severe winds, and by the successive heaving of freezing and thawing. They will always start earlier and fresher when covered. Sometimes snow will be an ample protection, but it must not be relied on. A thin coating of straw, evergreen boughs or even cornstalks, will shield and protect the surface of the ground, but it should not be applied till winter is close at hand, and after the ground is



frozen hard is not too late. Do not forget to loosen up this mulching very early the next spring, and stir and mellow the soil.

**HARDY GRAPES**—Which are pruned in autumn, should be laid down after the operation, as much cutting away always renders any plant more easily injured by frost. When it happens that the succeeding winter is quite severe, the vines will not only grow and bear better the following summer, but the crop will usually ripen several days earlier than if left fully exposed on the trellis to the winter's cold.

**KEEPING FRUITS**—The following rules for keeping fruits are from the proceedings of the Royal Horticultural Society of England :

1. As the flavor of fruit is so easily affected by heterogeneous odors, it is highly desirable that the apple and pear rooms should be distinct.

2. The walls and the floor should be annually washed with a solution of quicklime.

3. The room should be perfectly dry, kept at as uniform a temperature as practicable, and be well ventilated, but there should not be a thorough draught.

4. The utmost care should be taken in gathering the fruit, which should be handled as little as possible.

5. For present use, the fruit should be well ripened ; but if for long keeping, it is better, especially with pears, that it should not have arrived at complete maturity. This point, however, requires considerable judgment.

6. No imperfect fruit should be stored with that which is sound, and every more or less decayed specimen should be immediately removed.

7. If placed on shelves, the fruit should not lie more than two deep, and no straw should be used.

**PLANTING BLACK-CAP RASPBERRIES.**—A. M. Purdy of Palmyra, N. Y., whose experience is not excelled in raspberry culture, says he prefers to set raspberries, as well as gooseberries and currants, in autumn, and then throw a shovelful of coarse litter over or around each plant to prevent heaving by frost. The plants become settled in their places by spring, and receiving the early rains make a full growth the first season. In this way also the planter escapes the crowd of spring work which generally results from leaving all the planting till spring, and which is apt to make hurrying and superficial work. New raspberry plants, within a year old, are greatly preferred to two-year olds, which are of little value.

**KILLING INSECTS.**—The fruit-growers of Vineland have taken the business of killing destructive insects into their own hands, and among those who have competed for the premiums offered for killing the greatest number of curculios, we observe, from the reported results, that one man killed 4,400 ; another, 2,270 ; a third, 1,300 ; while no others came up to 1,000. The total was over 9,000. We think this a very moderate number for so extensive a fruit neighborhood, but they have made up on the rose-bugs, one owner having slain nearly 30,000, another 22,000, making in all over

100,000. This is the right way to take hold of these depredators. A few active, persevering *men* will do more than all the birds, repelling nostrums, &c., that the whole country can afford.

**SELECT STRAWBERRIES.**—Charles Downing, in the last edition of his work on Fruit, published in 1869, after describing 250 varieties of the strawberry, gives the following select list of sorts which have proved satisfactory within his own experience: Agriculturist, Charles Downing, Downer's Prolific, French, Green Prolific, Hovey's Seedling, Jucunda, Longworth's Prolific, Napoleon III, Royal Hautbois, Triomphe de Gand, Wilson's Albany.

**MOLES.**—The Small Fruit Recorder informs one of its readers, who has been troubled with moles working among his small fruits, that the use of strychnine, mixed with white sugar, and dropped into their burrows through small holes made with a quill, has been found by trial to be effectual in "fixing" them.

**EARLY STRAWBERRIES.**—The following method has been successfully tried in some places: Cover a good, well managed, clean bed of strawberries, the runners of which have been kept off, so as to form large vigorous stools, with dry forest leaves early in winter, three or four inches thick. Remove these leaves in February in the Middle States, and in March in the North, and place over the plants a frame with sash. Bank the sides with leaves, and cover the sash in severe weather. The plants will start early, and give ripe fruit at the usual blooming time. Airing and water must not be neglected.

**MICE REPELLERS.**—Generally a smooth, compact mound of mellow earth, free from grass, and made a foot high, late in autumn, is best. But sometimes a roll of sheet-iron or sheet tin is most convenient. Sheet tin is best, and will rust less than iron, unless the latter is well coated with gas tar. Roofing tin, fourteen by twenty inches, will make to each sheet four protectors, seven inches high and three inches in diameter, costing about five cents each. They last many years. They may be applied after some snow has fallen, with a little pressure and

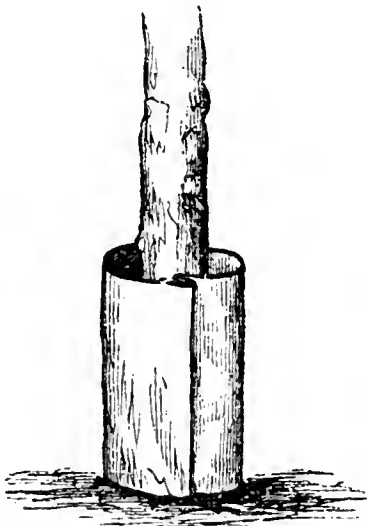


Fig. 85.



Fig. 86.

turning about. Fig. 85 represents one of these protectors, and fig. 86 several nested together.

**PEARS FOR KANSAS.**—The Kansas State Horticultural Society, as reported in the *Western Rural*, recommends the following pears for cultivation in that State: Bartlett, as best; Seckel, Flemish Beauty, White

Doyenne and Howell, as next in value; and Doyenne d'Ete, Howell, Easter Beurre and Sheldon for farther trial. For dwarfs, they put Belle Lucrative and Louise Bonne of Jersey first; next, Tyson, Swan's Orange or Onondaga, Beurre Diel and Duchess d'Angouleme. Rostiezer and Glout Morceau are recommended for farther trial.

**TOMATOES—TIME OF RIPENING.**—Peter Henderson of Bergen, N. J., gives, in the *American Agriculturist*, a statement of his experiments with twenty-five of the varieties of the tomato found in cultivation. He treated them all alike, transplanting three times as they advanced in growth. His observations brought him to the conclusion that the extreme point of earliness was reached some years ago; that the only improvement now to be made must be in size, smoothness or solidity; that the difference in the time of maturity, of all the different kinds, does not exceed ten days at the farthest; that while the fruit may ripen in Georgia in May, in Virginia in June, in Delaware in July, and in New-Jersey in August, a certain amount of heat is required to do the work.

**TIN LABELS FOR TREES.**—After many years' trial, we find nothing so cheap, simple, convenient and durable as strips of sheet tin for permanent labels on bearing fruit trees. They may be seven or eight inches long, an inch or so wide at the larger end, and tapering nearly to a point at the other. Neither the breadth nor the length requires accuracy. They are cut out of scrap tin, and may be made at the rate of a dollar per thousand, or at a less cost. To write the name, lay the label on a table or board, and make the letters with the point of an awl or of a file ground to a sharp point, pressing firmly while writing. Each label is placed on the side limb of the tree, by bending the smaller end once or once and a half around it. The work is then done—in less time than the reader has occupied in



Fig. 87.—*Label for Trees.*

reading these directions. Nothing further is necessary for many years. The point used for writing the letters scrapes away the tin coating, and admits the moisture of rain to the iron, rusting it and rendering the letters conspicuous. As the limb increases in size, the tin yields to the pressure, and never cuts the bark, and is at the same time stiff enough to hold on and prevent the label being moved by the wind, which so often defaces and wears out other labels. Out of some hundreds made and put on trees about eight years ago, all are now distinctly legible and in their places, and most of them appear likely to last at least eight or ten years more. The cut (fig. 87) is an accurate representation of one of these old labels.

**CORN FODDER FOR MULCHING.**—In the proceedings of the Montgomery County Horticultural Society of Ohio, published in the *Gardener's Monthly*, J. H. W. Mumma gave a statement of his mode of protecting plants for winter, by means of cut fodder. After trying many substances,

he prefers this. A machine both cuts the stalks and grinds them fine. Being used for his domestic animals, he easily obtains any desired quantity for winter mulching. He applies it after it is thrown out of the stalls. It is also used for flower beds in summer. One great advantage is that it is free from all foul seeds. A double handful is applied to each hill of strawberries, so as nearly to cover it. It is left on in spring, and the plants grow up through it, and the fruit stalks rest on the mulch.

**PRUNING CHISELS.**—A well managed orchard has the crooked or supernumerary branches removed before they become large, and an even, symmetrical head formed while the tree is comparatively small. Such branches may be easily and quickly cut off, while the operator is standing on the ground, by means of a suitable pruning chisel on a pole or rod. The form of the head may be seen to better advantage from the ground, and a cumbrous ladder is not required. A chisel is better than a pruning saw for such small limbs, working more rapidly, making a smoother cut, and preventing the annoying bending of the limb under the pressure of the saw.

There are some objections to the common square-edged chisel. A square cut is more difficult to make, and it often tears the bark. But if the edge is ground on the corner of a grindstone, as shown by fig. 88, or if the smith makes it in that shape, it cuts on both sides of the branch, pressing the opposite parts together, and makes a smooth, clear cut. It will also cut more easily by means of the sawing motion at the edge. With such a chisel, having a handle four or five feet long, and with a mallet to strike the lower end, a limb an inch or more in diameter is quickly taken off.

Another form is shown by fig. 89, where a piece of good saw plate or hoe blade is cut in the form represented, and screwed on the flat end of the long handle, which is used in the way just described.

A third mode of construction is shown in fig. 90, where the object is to give a

more perfect saw motion or draw-cut. The steel blade is made with but one long cutting edge; and after this is secured to the handle, a smooth steel rod is screwed to the left side, so as to bring the blade up against the limb, as it is thrust upward.

By unscrewing the steel rod, the blade is easily ground on a common grindstone.

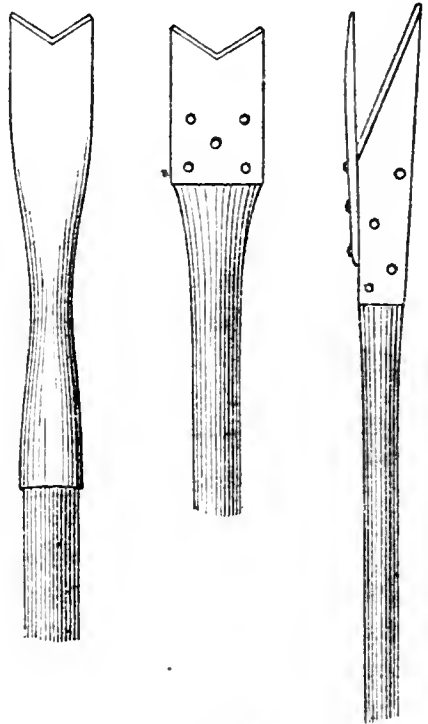


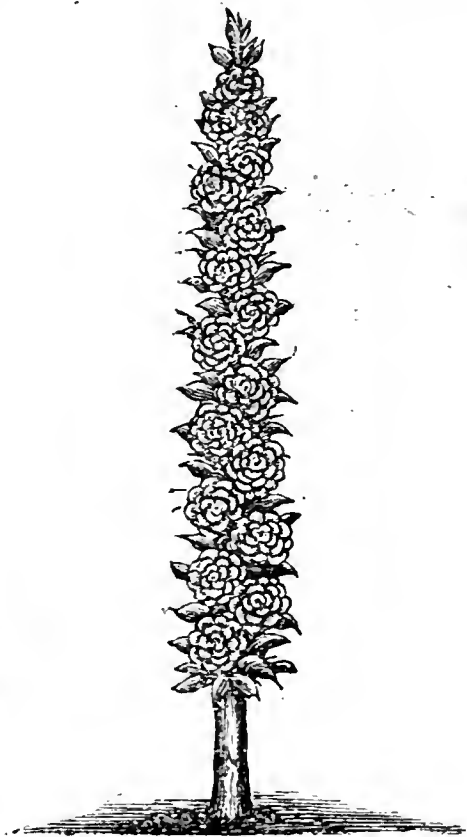
Fig. 88. Fig. 89. Fig. 90.  
*Pruning Chisels.*

## ANNUALS AND PERENNIALS—THEIR CULTIVATION.\*

BY MRS. SOPHIA O. JOHNSON.

**F**LORICULTURE has taken rapid strides in the past ten years. The florists of Europe and the United States have devoted themselves to their trade with praiseworthy emulation; each country has striven with the other—Germans, French, English and Americans, have all been engaged in the strife, and to-day we profit by their exertions. Our old-time garden flowers are utterly eclipsed by the floral belles of the season! Compare the *Asters*, *Balsams*, *Stocks*, *Pinks*, *Petunias*, etc., which amateur florists now cultivate, with those we raised in our childhood and the great improvement in each and all is seen at a glance.

The *Camellia-Flowered Balsam*, (fig. 91,) is a rival to its statuesque namesake. Many of its flowers are as purely red and white and as many petalled as the lovely *Camellia*. It is a gross feeder,

Fig. 91.—*Camellia-Flowered Balsam*.Fig. 92.—*Balsam—Single-Stem*.

requiring the richest of soils to bloom in perfection. The plants appear to better advantage if transplanted nearly a foot and a half apart, and tied to stakes. The side branches should be nipped off to make a perfectly shaped plant. When the buds are formed, water twice a week with manure water;

\* We are indebted to the Catalogues of B. K. BLISS & SON of New-York, and of JAMES VICK of Rochester, for the cuts contained in this article.

horse manure is the best for this purpose, but failing to procure that, one tablespoonful of guano mixed into one gallon of tepid water will prove a good substitute. Ten different colored flowers are found among this species of Annuals. If desired for in-door plants, the seeds can be sown late in July, and at Christmas their gorgeous flowers will be in perfection. They are not ranked among green-house plants, but they are very fine for window gardening. They can be trained to bloom as a single stem, (fig. 92,) with three branches, or with five, or left to wander at their own sweet will.



Fig. 93.—*Delphinium Hybridum Novum*.



Fig. 94.—*Lavatera Trimestris*.

*Delphinium* or *Perennial Larkspur*, is a plant well worthy of the attention of all amateur gardeners. It is a hardy species, will stand our coldest northern winters unprotected, and its perfect shades of blue, so rarely found among desirable flowers, render it an unrivaled addition to bouquets, vases and baskets of flowers.

*Delphinium Hybridum Novum*, (fig. 93,) is, as its name indicates, one of the recent results of the florist's care, and its flowers are rarely double and beautiful. The plants will often attain a growth of two feet in height, and are one mass of brilliant blue, purple or white tints. They will bloom well in any soil, but, like most other flowers, fully repay the care of the cultivator, and delight in a rich, loamy soil.

*Lavatera Trimestris*, (fig. 94,) is no novelty, but one of the flowers of our childhood, and though it may be considered an old fogey among plants, we cherish it tenderly for the sacred associations which hang around its rosy striped chalice. It is a hardy annual, once obtained, never lost, for it springs yearly from self-sown seeds, and its clusters of flowers are ever

ready to your hand for an effective back-ground for a large vase. There is a white variety which is also a joy to us. These plants require no care, are constant bloomers from late in June until King Frost cuts them down, and a paper of seeds costs but five cents.

The *Double Portulaca*, or *Portulaca Rose* as it is sometimes called, from its close resemblance to the queen of flowers, is a "novelty" of some years, but its claims upon our notice increase yearly. It is a great addition to every *parterre*. Its blossoms equal the single varieties in brilliancy of coloring, but are very double, and the leaves are gathered closely together. It is seen in yellow, scarlet, white, orange, crimson, rose, and all these



Fig. 95.—*Phacelia Congesta*.

colors striped with white. Like all double flowers, it is not always true to its name; single flowers will creep in unbidden; these can be uprooted as soon as the first flower appears, yet it is well to leave a few plants for seed, as the double varieties produce but very few seeds, but they are more to be relied on for double flowers, as plants, like men, are apt to degenerate.

*Phacelia Congesta*, (fig. 95,) is a curious plant, of a bright azure hue. It is a hardy annual, easily cultivated, and those who have a preference for blue flowers will be much pleased with it. It is not a profuse bloomer.

*Petunias* are classed in Bliss' Catalogue as half-hardy perennials, though most of our readers cultivate them as annuals, as they are quite tender. Thirty years or more ago the first small, single, deep purple *Petunia* was offered by Breck of Boston, as a great "novelty." A father who delighted in all rarities in the floral line, obtained a small packet of seeds, and though but a little child, I well remember his delight when the first bright consummate flower bloomed. How he would have gloried in a bed of *Petunias* like the group we annex! But many years ago he was called up higher, where flowers never fade. Buchanan's Hybrids, (fig. 96,) are beautifully blotched and marbled with rose, crimson, and all shades of purple, and the velvety texture of the leaves is unequalled by



any flower which grows. It is a plant of the easiest culture—any novice

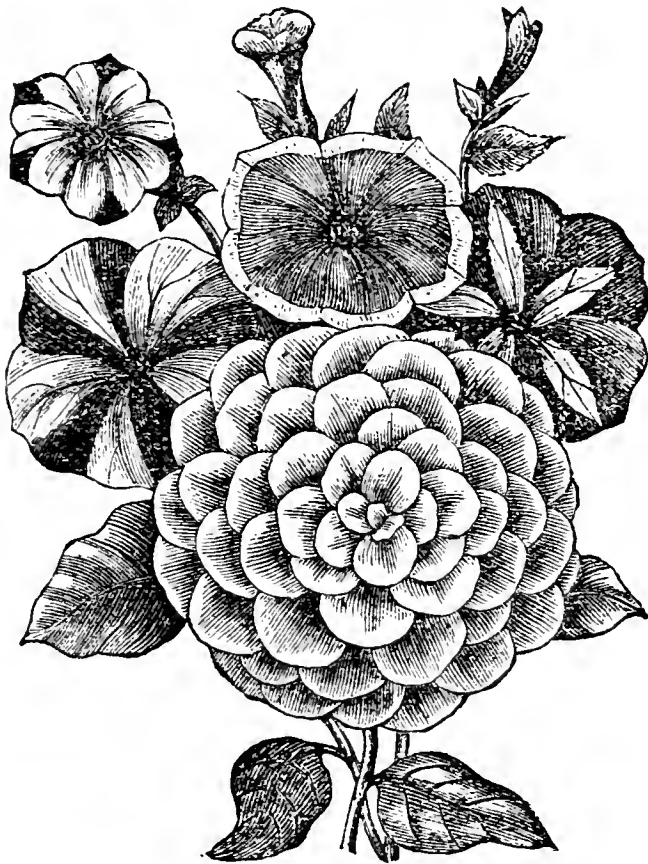


Fig. 96.—Group of Petunias.



Fig. 97.—Large Flowering German Ten Week Stock.

in gardening can grow it. It succeeds well as an indoor plant, and is desirable for window gardening, often blooming all winter with but little care. It is raised easily by cuttings—and the double varieties, which are highly esteemed, can be duplicated in this manner, as they do not seed readily.

This flower is very effective as a lawn bedder, and shows well when planted in initials of very large size, or in crescents, stars, or circles. It sows itself—at least the single kinds—and perpetuates the bed from year to year.

*German Ten Week Stocks*, (fig. 97,) are great favorites with us, their spicy fragrance rendering them far superior to any flower we have mentioned. They are unequalled as a garden favorite. We are indebted to the German florists for vast improvements in this line of flowers. Some of the varieties are called Hyacinth Flowered, and they are decided rivals of that far-famed bulb. The flowers are more double than those of the rarest Hyacinth that ever bloomed, and their fragrance is as delightful. No garden is complete without them. They blossom in the brightest colors, and the purest white and creamiest yellow tints are frequent. They

bloom much finer if weekly treated to a dose of liquid manure, and they delight



in a rich loamy soil, in which their fibrous roots can easily expand. We love the Stocks in all their branches, and heartily recommend their cultivation.

There is a decided demand at the present time for climbing or running plants for vases and hanging baskets. The fashion of the times demands these tasteful adjuncts to every town or country house; so we will present a few varieties worthy of culture.

*Adlumia Cirrhosa*, (fig. 98,) is a desirable climber, either for baskets, trellis work or pyramidal frames, such as our cut presents. Its common name is Mountain Fringe; its foliage is very graceful, and it will often grow fifteen feet in a season. It is a biennial and is found in quaint country gardens, where it has propagated itself for



Fig. 98.—*Adlumia Cirrhosa*.

years, and thrown its spiral arms lovingly around the dark green evergreens, making a charming contrast with its light traceries of bright emerald hue. It is a vine worthy of culture in every garden.

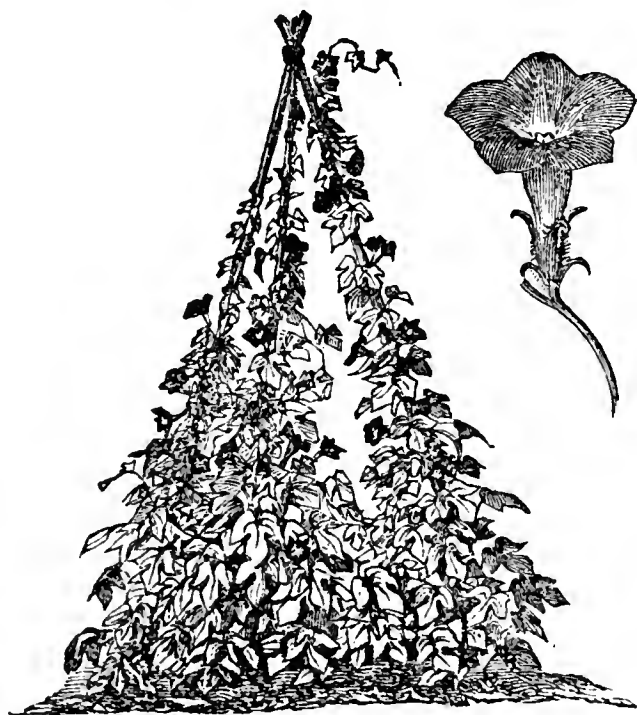


Fig. 99.—*Ipomea Hederacea Superba*.

color. Its habit is not equalled in grace or

*Ipomea Hederacea Superba*, (fig. 99,) is a recent "novelty," sometimes called Ivy-leaved Ipomea, from the form of its delicate leaves. It grows 8 feet high, is a tender annual, and its bright blue flowers margined with white bloom in great profusion. It is desirable to climb upon the supports of hanging baskets, and its flowers are welcomed everywhere for their exquisite beauty by any climber which

the florists' catalogues afford. It grows to perfection in a rich loamy soil, well watered with manure or guano. All these species of *Convolvulus* are desirable for in-door decorations.

*Cardiospermum* or *Balloon Vine*, is a very ornamental climber, beautiful for vases or hanging baskets, it grows four feet in height, and its seed vessels are inflated like a balloon—hence its name—when the seeds ripen the capsule bursts with a slight report. Its foliage is pretty, and though a tropical plant, it is desirable in every collection of flowers. It requires a sandy soil, and a sheltered situation from chilling winds, but delights in all the sunlight it can receive.

Last, but not least, upon our list comes the *Tropæolums*, (fig. 100,) the most profuse flowered and easily cultivated of all climbers. Their colors are un-

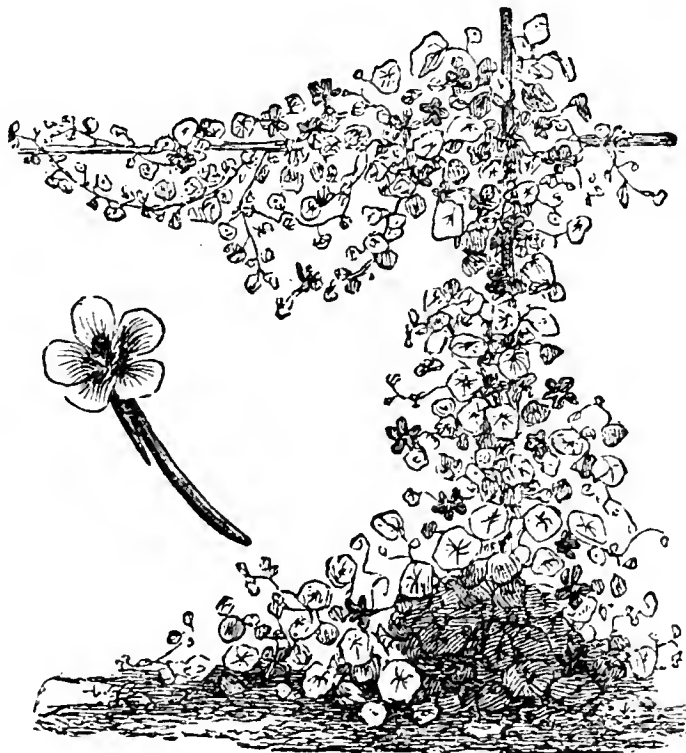


Fig. 100.—*Tropæolum Lobbianum*.

surpassed, and the flowers, amid the rich, dark foliage of the leaves, look like miniature tropical birds. There are many varieties of this species. B. K. Bliss offers no less than fourteen different colors, all vying with each other for our favor. Many of them will bloom through the winter months, so that they are unequalled for window gardens. They grow readily from seed, but in July or August will root rapidly from cuttings. No plant is more easily propagated, and none more fully repays the cultivation bestowed upon it. For vases, verandahs or summer-houses, no vine can compete with it. It does not require a rich soil, but desires a gravelly loam. To make ours bloom in perfection we take the trodden soil of the highways—mixed with sand and gravel—and our plants are always the admiration of the passer by. As a bedding-out plant the *Tropæolum* is very effective—the shoots should be fastened down with hair pins and not left to straggle.

*Momordica Balsamina* or *Balsam Apple*, is of the gourd family; the leaves are of a woolly texture, the flowers of golden hue; the fruit when ripe bursts at the touch, with a slight report, and discloses a brilliant cherry pod. It is decidedly ornamental, and is much cultivated at the southwest, whence we procured our seeds. It will climb ten feet in one season, but is a half-hardy annual. It will sow itself like Morning Glories, and spring up from year to year—is a native of the East Indies.

*Lophospermum Scandens*, (fig. 101,) is a very beautiful half-hardy perennial; the flowers are of a rich rosy purple, shaped like a Fox-glove, and are especially effective for hanging baskets and vases. It will bloom the first season if the seeds are planted early in April, and it can be kept through the winter in a cool, frost-proof cellar, but it is desirable for a bay window. Any light, rich soil, will produce a good growth.

*The Liliium Auratum or Golden-Rayed Queen of Lilies*, (fig. 102,) is perfectly hardy, enduring the coldest New-Hampshire winter with a slight protection of straw



Fig 101.—*Lophospermum Scandens*.

and leaves. It should rejoice the heart of every true lover of flowers. As a novelty its price has not brought it within the limits of all purses, but it is propagated so readily by offsets and seeds that soon the inhabitants of every little country village may behold its glories.

Six to twelve of these jewelled beauties are borne on one stem, and while it has no competition in beauty of coloring, it is unsurpassed in delicious fragrance.

Dr. Lindley of England, who introduced this rare plant into that country, says: "If ever a flower merited the title



Fig. 102.—*Liliium Auratum*.

of glorious, it is this, whether we regard its size, fragrance or exquisite arrangement of color."

The blossoms are from eight to twelve inches in diameter; they possess six ivory-white petals thickly bedewed with chocolate crimson drops, and a golden ray extends through the centre of each petal. It blooms splendidly in pots, in a light sandy loam—stable manure is death to it, but fibrous loam and peat, with a good mixture of sand, is a desirable compost. The plants should be tied to stakes, or they are liable to be broken down by wind and drenching showers. If planted where they are protected from the noon-day sun, the flowers will remain perfect much longer, but if placed in too damp a soil, the bulbs will decay. They have been made, by proper culture, to grow eight feet high, and produce from twenty to thirty blossoms upon one stalk.



Fig. 103.—*Convolvulus Tricolor*.

species of *Convolvulus*. They are very beautiful either in beds cut into the turf, or in mixed borders. The *Convolvulus Tricolor*, (fig. 103,) is an especially fine variety, of a rich purple hue, with a pure white centre. It is a half-hardy annual and in some sections of the United States will sow itself as readily as the *Petunia*, and thus give a brilliant flower-bed with only the trouble of thinning out the plants. It is of a trailing habit, and a few plants will fill a bed six feet in diameter.

*Dwarf Nasturtium*—(fig. 104.)—There are no annuals in all the florists' catalogues which have



Fig. 104.—*Dwarf Nasturtium*.

improved so much under hybrid cultivation as the above named variety. They rank now with the Verbena and Geranium; their rich colored and beautifully spotted flowers making them desirable in all gardens. They thrive in common garden soil, and blossom more freely if sand and fine gravel are mixed with the loam. Their colors are chiefly scarlet, spotted with yellow, deep maroon, rose tinted with maroon, crimson, yellow spotted with crimson, sulphur spotted with mauve, light yellow, nearly white. King Theodore is almost black, with very dark green foliage. No collection of annuals is complete without these charming varieties.

*Sedum*—(fig. 105.)—There are two species of this plant; one has a bright blue blossom; the other, a native of Kamtschatka, is of a brilliant orange hue. They grow



Fig. 105.—*Sedum*.

freely on rustic or rock work, and are pretty for hanging baskets; being hardy perennials, they bloom without much extra care or labor.



Fig. 106.—*Anagallis*.

freely on rustic or rock work, and are pretty for hanging baskets; being hardy perennials, they bloom without much extra care or labor.

*Anagallis*, (fig. 106,) are half-hardy annuals, chiefly blue in color. They are admirable for the edging of ribbon beds, as they grow only six inches in height, and are covered with a profusion of rich colored flowers. They are also desirable for window gardening, but for this purpose the seed should be sown in pots in June. Plants that have not blossomed can be potted in a rainy season, or after dark at night, and if shaded for a few days, will not lose their leaves, and will bloom all winter. *Anagallis Marmora Dell' Etna* is of a bright red; *Napoleon III* is a rich maroon.

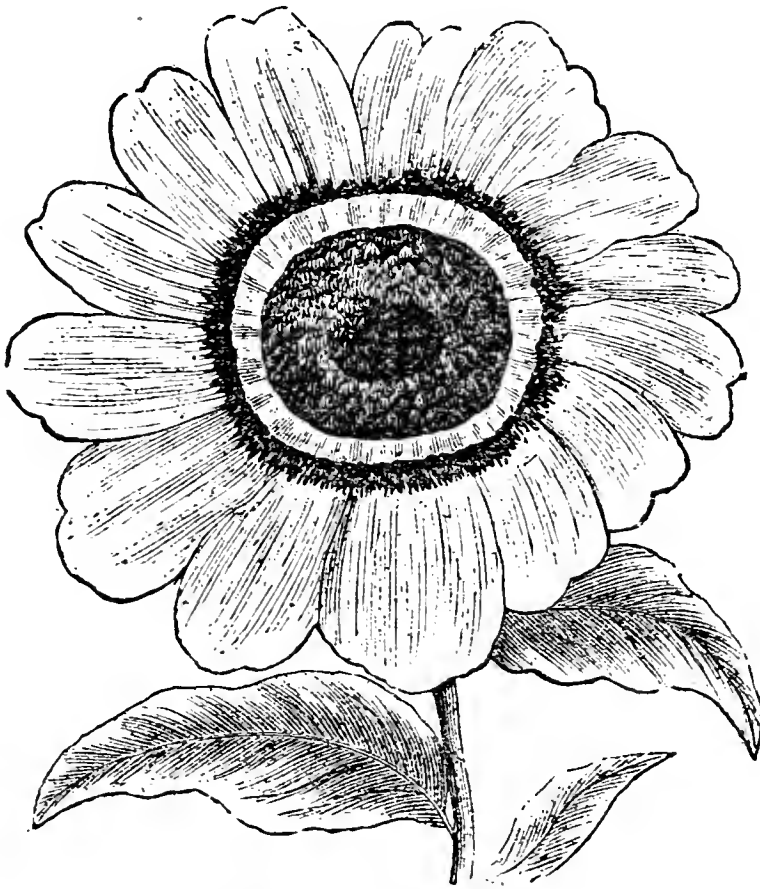


Fig. 107.—*Chrysanthemum*.

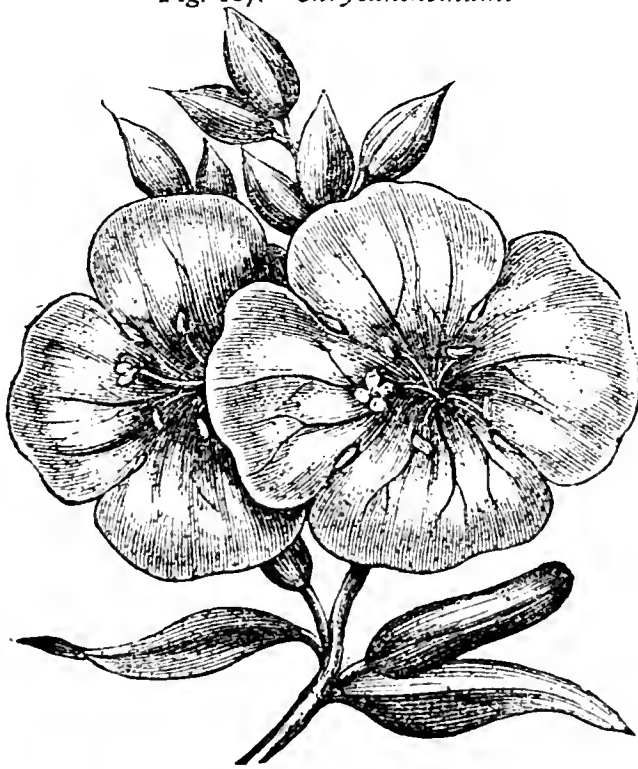


Fig. 108.—*Clarkia Integripetala*.  
are left on the stems, and will flower early the ensuing season.

*Chrysanthemum*—(fig. 107.)—This fine flower is of brilliant hues, crimson, yellow and white, and makes a fine display in borders or ribboned beds. It is a hardy annual, grows one foot high, and is effective in large vases; is also often grown as a lawn plant, but requires much room to produce its best effect. Plants should be set eighteen inches apart. It thrives in common garden soil, but its flowers are finer if watered with liquid manure, and this applies to all annuals and perennials.

*Clarkia Integripetala*—(fig. 108.)—The *Clarkia* is an old favorite, but of late it has undergone some transformations under the skillful hands of the florists.

The species above named is of a rich crimson, and the petals of its flowers are not as deeply serrated as the older varieties. It is a hardy annual, and with the new double white variety, makes agreeable additions to our gardens. It will sow itself if the seed pods



*Erysimum Peroffshianum*, (fig. 109,) is a very showy orange-flowered annual, brought from Palestine. There is no other flower possessed of the same color, and though it is not a graceful plant, if it is grown in thick masses it makes a fine display, and is a beautiful contrast to the Delphinium. In bouquets and vases its color is very effective. There is another variety, brought from Arkansas, of a pale sulphur yellow. These plants grow eighteen inches in height.

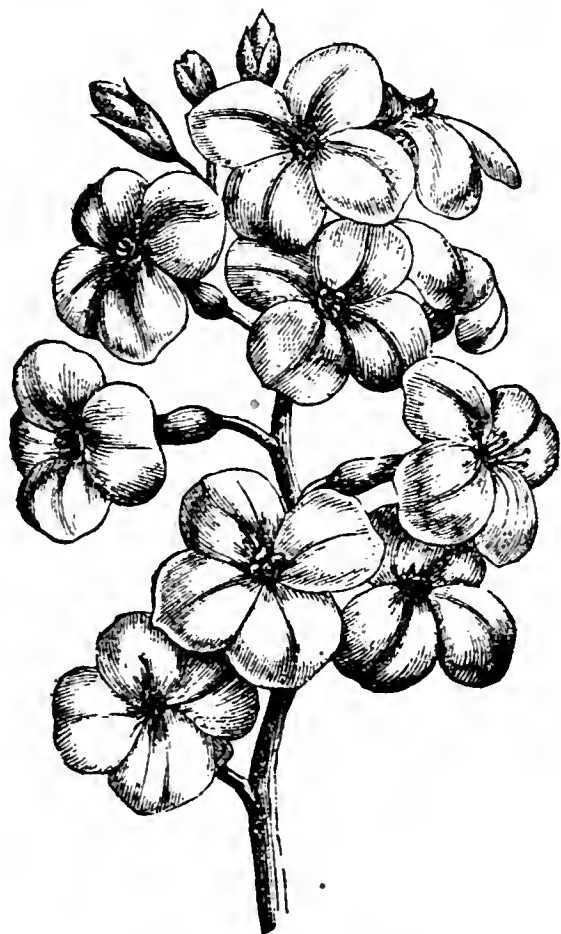


Fig. 109.—*Erysimum*.



Fig. 110.—*Gilia Tricolor*.

*Gilia Tricolor*—(fig. 110.)—This is a hardy annual from California, and will bloom in any soil. It is white, purple and lilac, of delicate form, and especially pretty in small bouquets. It blossoms finely in pots, and will reward the amateur gardener if it is transplanted early in the season and cultivated as a pot plant. There is a pure white variety, which blooms profusely, and is very useful as a bedding-out plant. Its delicate foliage adds much to its beauty.

We wish that every dweller among flocks and herds could understand how much pure delight is to be obtained by an investment of a few dollars in seeds, plants and bulbs. Many more daughters would remain contentedly at home if allowed to beautify their surroundings, and many more sons would not forsake the ways their fathers have trod if their tastes for the beautiful were allowed full play. We know a young farmer, bred

among New-Hampshire's granite hills, who yearly invests \$5 or \$6 in flower seeds and bulbs, and makes the little brown house of his parents a bower of beauty. His father sniffs and groans a little—"boys did not care for sich truck in his days"—but he throws no decided obstacle in his son's garden, so the flowers bloom sweetly, and nightly, after the cows are milked, the work done; the toil browned son weeds and hoes, stakes and trains, and in the autumn at cattle shows and camp meeting his jolly face is always seen aglow with pride and pleasure as the huge bouquets he has gathered and tastefully arranged, are praised and admired by the rustic belles of the adjoining villages.

The cultivation of plants from seed is a source of great pleasure to the amateur gardener—from the little tiny germ springs forth the two little leaves, then the stem and buds, and lastly the brilliant flower. The care bestowed upon such plants enhances their value to their possessor. A garden of bedding-out plants procured from a florist, cannot furnish half the delight which is to be obtained from a well cultivated bed of annuals. Try it ye sons and daughters throughout our land, and prove for yourselves the pure joys therein contained.

"There is a lesson in each flower,  
A story in each stream and bower;  
In every herb on which we tread,  
Are written words which, rightly read,  
Will lead us from earth's fragrant sod,  
To hope and holiness in God."

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## HOUSE-KEEPING ECONOMY.

BY A YOUNG LEARNER.

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MRS. NOVICE, a young housekeeper, appeared one pleasant afternoon at her neighbor Capable's kitchen door, and asked for a long promised lesson on domestic management.

Mrs. Capable met her with a bright smile. "I can give only odds and ends," she said, "gleanings from papers, cook-books, older housekeepers, and my own experience. Let us begin here first, and go from room to room, so that objects before our eyes may suggest the items to our memory."

### THE KITCHEN.

"Our first topic shall be the cook-stove. We have wood to burn; we boil our kettles on the stove, and bake in a brick oven. To-day, Tuesday, we iron. In this deep sheet-iron pan, which is set into the top of the stove, we put our smoothing-irons to heat; they are hot much sooner when placed so close over the fire, less wood is needed, less space for it left, less warmth is requisite. With a coal stove you would not need it.



But a small charcoal furnace, used out of doors or in an open wood-house to avoid danger from the gas, is a great convenience for heating irons and boiling the tea-kettle on warm summer afternoons when you want no kitchen fire. A hot-water tank and a tin oven for keeping warm food, are valuable appendages to a cook-stove. Mine has not the latter, but we found a patent cast-iron rack, which is fastened by screws to the stovepipe, at a suitable distance above the fire ; it is good for warming plates and keeping dinner hot.

“Lucy is making biscuits. Do not be surprised ; it is no great attainment for a little girl ; we sell more wheat, and buy occasionally the ‘self-raising flour,’ which needs only to be worked up with milk and butter, rolled, cut out and baked, to make a first-class biscuit ; or prepared with milk, butter and eggs, and cooked in rings, for delicious muffins ; no time is required for rising. The moulding-board on which Lucy works does not slip about. A cleat is nailed at one edge on the under side, so that it cannot be pushed back upon the table. Our large platters, which are too wide to lie upon the pantry shelves, are held nearly upright between them by cleats nailed a few inches from the wall ; the platters are slipped in behind them.”

“When I have unexpected company,” said Mrs. Novice, her mind recurring to the quickly made biscuits, “I never know how to provide the table.”

“A housekeeper ought always to keep on hand a supply of well prepared food for her own family. Private fasting and public feasting induce many difficulties. Guests should fare more plainly and the household more comfortably. There ought never to be any sour, heavy or doughy bread. Watch rising bread and it need not sour and require soda ; knead it thoroughly and it will be fine and white ; bake it instead of burning it, and it will not be raw and hollow hearted. Bread should be baked on the Tuesday and Friday of every week ; weekly is too seldom ; the old should be sufficient to last till the new has been one day baked. Previous calculation of the quantity is necessary to prevent borrowing and perplexity. In cold weather you can mould an extra supply of bread if you wish ; after forming it into a loaf it can be kept a week in the cellar ; when needed, you can make it into biscuits by adding a little shortening and working over ; or you can mould it again, let it rise, and bake it for bread.

“Cream that has stood long and become bitter, makes poor butter ; so does that which is skimmed from milk that has been heated to produce more cream. Some butter is spoiled by over or under salting. I always use an ounce of salt to a pound of butter. Laziness and bad butter are near relations. If I want a drink of buttermilk, I prefer to take it separate from the butter, and am warned of approaching rancidness whenever I see a roll of butter oozing milky drops.

“With good bread, good butter, and a supply of fruit, fresh, dried or canned, a woman need not tremble when she hears a carriage driving up.

In the spring, before apples are gone, I can them for table use ; after cutting up, I steam them to make them soft, pour over them hot syrup of sugar and water, and flavor with sliced lemon. Apple jelly is also good. I slice, very thin, thirteen apples, (without peeling them,) cover them with water, boil and strain them. (By the way, for squeezing jelly bags, we use something like a large nut-cracker, (fig. III,) two wooden paddles,

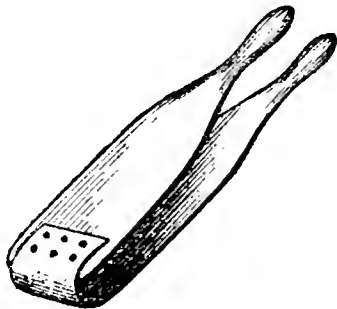


Fig. III.—*Jelly Squeezer.*

hinged together with a leather strip ; the bag is pressed between them and our hands are not burned.) To each pint of apple juice I add a quarter of a pound of loaf sugar ; boil to a jelly and add two sliced lemons. Let me here mention, lest I should forget it, though it is out of place, that *currant* jelly is much more easily made by boiling the strained juice about five minutes, pouring it boiling hot over the sugar rolled fine, and stirred till the sugar is dissolved, and then poured into moulds. It will be stiff when cold.

“I must tell you how to keep ham through summer, and have it ready for sudden emergencies. Cut the whole ham in slices, fry it till nearly done, and put it in a jar in layers filled in with lard. A little more cooking makes it ready for the table at any time. Nice little ways, Mrs. Novice, of preparing common dishes, potatoes, hashes, toast, &c., are worth as much more than rich material as ingenuity is than abundance.”

After some conversation, Mrs. Novice inquired if her friend always washed on Mondays.

“Always,” answered Mrs. Capable. “If it rains on Monday it is quite as likely to rain on Tuesday or Wednesday. We use a wringer and a revolving clothes-dryer, and have the clothes ready to sprinkle and fold by evening. We do not crowd the business of the first half of the week into the last, which makes Saturday a nuisance in some families.”

“What can be done with stains, mildews, &c.? There are some things that hot suds do not benefit.”

“A fresh fruit stain is readily removed by pouring on boiling water, but when a stain is ‘set’ by the soap of many washings, it can be taken out by exposure to sun and air a few days, after rubbing the spot with yellow soap and wetting it with thick cold starch. If one application does not succeed, ‘try, try again.’ I have heard that mildew can be thus removed : Put one-quarter of a pound of chloride of lime in a gallon of cold water ; let the mixture settle an hour, then drain off the water and soak the injured articles in it two hours, wash them and hang them in the sunshine. When anything spotted with grease is put into the wash it is well to mark around the places with white thread, so that they may not be overlooked and neglected. I have lately learned an easy way to bleach cotton. I leave the unbleached garment in a pan of sour milk for a few days, occasionally shaking it well, then wash and boil it and it becomes white.”

"Will anything take wheel-grease out of cloth? My only silk dress has a frightful spot of it."

"I will read you this prescription which lies among my scraps. I have no doubt of its efficacy: 'Lay the silk on a clean sheet, folded to eight thicknesses, rub the greased part with a soft cloth dipped in lard, moving the silk to a new spot frequently. After a time the wheel grease will all be through, leaving only clean lard. Clean this out in the same way by rubbing with nice soap and alcohol, using a clean cloth to rub with, and frequently changing to a new spot on the underlying sheet. Then lay the silk on a clean cloth and rub dry with a soft cloth. A friend cleaned a white Canton crape in this way, and you cannot find the spot where it was greased.' "

Mrs. Novice expressed her thanks for the receipt, and then began to look about the room. "You use a skirt-board and bosom-board for ironing, I see," she said, "but what is that black board for, hung on a nail by the fire?"

"For a very different purpose. We put it on the kitchen table when we cook, and when we take a kettle from the fire we set it on the black-board while mashing potatoes, draining vegetables, &c. It keeps the soot off from the table."

"And I observe another convenience, too, if I may speak of it. Those

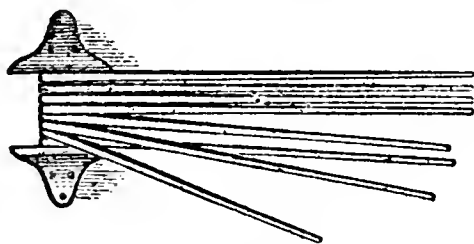


Fig. 112.—*Clothes Bars against the Wall.*

bars for drying small articles, (fig. 112,) which you can draw out one by one or push back against the wall, out of the way. There is a rod which runs through all of them, so that they can be turned on it. And your pumps are both in the kitchen; you have painted tables and an oiled floor that almost keeps clean

of itself, and opposite windows that make the room so airy and light; fuel under cover, and a door that opens into the wood-house instead of directly into the open air. How comfortable and pleasant everything is!"

### THE CELLAR.

It was large, dry, clean and well ventilated. When the ladies descended to it by an easy flight of stairs from the kitchen, they first observed the soap barrel.

"Soap is much softer and 'goes farther' after it has been made a year," remarked Mrs. Capable. "One gallon of old soap is worth a gallon and a half of new. Sometimes we make cold soap; we boil the grease in strong ley, put it hot in the soap barrel, fill it up with cold ley, and leave it all to turn to soap at its leisure."

"There is the vinegar cask," she continued. "I save many gallons a year by contributions to it of the odds and ends. The rinsings of molasses jugs when they are washed, the juice left from pre-

serves, are instances. Vinegar is much sharper the second year after making."

Mrs. Novice much admired the Zero refrigerator, but said that she could not afford to have one of her own, though ice could be conveniently procured.

"But ice can be kept in the house a great while without a refrigerator," answered Mrs. Capable.

"In a blanket?"

"For some time it can; but I am told it will not melt in less than a week in a case made in this manner: Make two woolen bags nearly equal in size, no matter how coarse, old or faded the material; put one inside of the other, and fill in the space between them with feathers; hen's feathers are as good as any; sew the tops together all around, and tie the ice within this double receptacle. When I mentioned this plan to Mr. Capable, he said that wool would make a better interlining than feathers, and it is as good a non-conductor."

Mrs. Novice said she intended to have a safe made like her friend's—a plain wooden cupboard fitted with shelves, the door to which mainly consisted of fine wire netting, which admitted air and excluded flies. She has already the "swing shelf," fastened by posts to the ceiling instead of the floor, which is indispensable to every milk-room.

### THE BED-ROOM.

After this Mrs. Capable took her friend to the spare bed-room, where she might get some kind of useful suggestion. The bed was neatly made over a sponge mattress. "Oh, I must tell you about that mattress," exclaimed Mrs. Capable; "it does very well for a bed that is seldom occupied; is soft and durable, but by constant use becomes damp and unhealthy. Those crocheted covers to the pillow cases keep them from dust and hide them when tumbled and creased. The spread is only a thick sheet, knotted with tufts of candle-wick. I have made several and arranged the knots in different patterns. They look well, cost little, and can be washed as

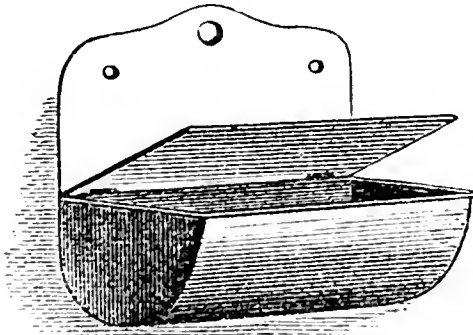


Fig. 113.—*Box for Combs and Brushes.* easily as a common sheet. The girls made that pasteboard box for combs and brushes before we had a toilet bureau for the room, and it is so convenient and pretty that we have left it yet. It is, you see, flat on the back and rounded on the bottom and front, and covered with fancy paper, (fig. 113.) A strip of cloth firmly pasted to the back and lid, forms a hinge between the two. I have an old cigar box covered with pretty calico and nailed on the inside to the wall for clippings and all sorts of refuse in my room. It saves me many a tramp from the bedroom to the kitchen stove."

"I wish we had our spare chamber furnished, for then my sister could stay with me through her vacation; but I suppose we must wait till we can afford it," said the younger lady despondently.

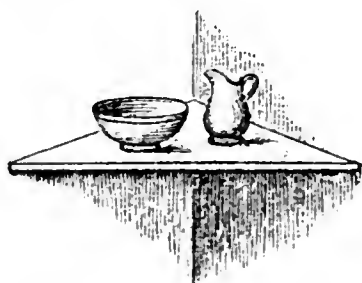
"If you have a bedstead and bedding, you can furnish it at once," answered her friend.

"Oh yes, we have an old-fashioned bed in it now, but there is no bureau, no wash stand, no chairs, no wardrobe—nothing. Mother says she will give me one of her carpets for it when we are ready to fit it up, but I can't tell when that will be."

"Send for the carpet to-day," was the prompt reply, "that is if you are willing to offer your guests a cozy, though not a fashionable sleeping place. Oh, the bad nights I have spent in some stylish chambers! I think a comfortable bed and pure air eclipse all the upholstery in the world. And now I will inform you how to have necessaries without money. That little old rocking chair that Freddy broke, can have the broken rockers taken off, be covered and made into a serviceable seat. You can have a beautiful toilet table by setting a deep box on end, fitting it with shelves and draping it with a white cover and curtains all around. There should be an opening at one side in the curtains, so that they can be drawn back upon the tape that shirs them, and give access to the shelves. Such a pretty table as my mother had in the days of our poverty, when I was a child! Her walnut and mahogany sets do not look half so handsome to me now; and yet it was only an old-fashioned oval table of grandmother's, with a bit of white Marseilles over a rounding cushion on the top, and a full flounce of barred muslin, neatly starched and ironed, concealing the slim, awkward legs, and giving the whole room a clean and fresh look."

"I will try, my kind adviser, to fit up the room. But what shall I do for window curtains? You don't like green paper shades any better than I do."

"White holland costs but a few shillings a yard, and keeps clean indefinitely. It can be nailed to the window head, rolled up by hand and held in place by home-made cord and tassels if you cannot purchase 'fixings.' Perhaps two of Freddy's out-grown baby frocks would make a prettier curtain, shirred at the top, parting each way and looped back with ties of ribbon."



"There—we forgot the wash stand! Surely that article cannot be improvised."

"Oh, yes—ask Mr. Novice to fasten cleats to the wall, in one corner of your room, and nail securely upon them a triangular shelf of good plank, (fig. 114.) You can lay a towel

over it, or make a tasteful cover purposely for it, and it will hold the washing apparatus. But now let us step in to see Cousin Dora."

## AN INVALID'S ROOM.

Dora's disease was incurable. She occupied, in her cousin's house, a room which was the focus of the cheerfulness, tidiness and order which prevailed that dwelling.

"Neighbor Novice has come for *information*," said Mrs. Capable pleasantly; "can you describe to her, Dora, some of your little contrivances?"

"Oh, you must see my new easy chair. Arm-chairs are costly, you

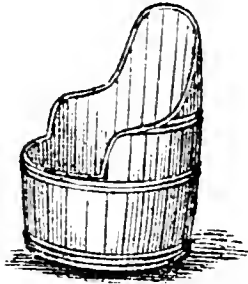


Fig. 115.—*Barrel Cut for Chair.*

know. But mine is made of a cask; some of the upper part is cut away to form a back and arms, and a seat fitted in, (fig. 115.) The staves and hoops are very thoroughly nailed together, so that it will not drop to pieces. Cousin Edward

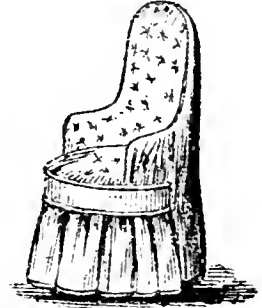


Fig. 116.—*Barrel Chair Complete.*

made it the week that his ankle was sprained. Then the girls made stuffed cushions, and covered it all over with an old French calico I used to wear, (fig. 116.) But when they had got it done they had to take off the arm cushions—the staves were too sharp to rest elbows on—and nail on flat strips of boards over them to make the arms comfortable. I have a wide board, like the leaf



Fig. 117.—*Work-Board.*

of a table, with long prongs attached, which run through these sockets on my chair, (fig. 117.) This holds my work or writing desk when I am able to sit up. This chair-back is also a great convenience—an old chair-back with legs behind it instead of below it, which holds it firm in its place, as they cannot slide back farther than the headboard of the bedstead. It is more comfortable than a pile of supporting pillows when one wishes to sit up in bed; and I have lent it to several sick persons, who have all considered it a very useful article."

"Do you take no medicine, Miss Dora? I see none about the room."

"My bottles need not always be in sight." She opened the door of a small closet with her right hand. "I keep them in this square basket. Half way up in it there is a piece of pasteboard tightly fitted in; this has holes of the right size cut in it, and the vials stand up in it as if they were in stocks. Do you know how to wash a high and narrow bottle? Put in a good many carpet tacks, fill up with suds, shake well, and it will be clean. Do you see my hyacinths there? They are blossoming in certain old cast-off, wide mouthed bottles of mine. The bulbs are set on the tops of the bottles, which are filled with water and a little charcoal. The roots soon strike down and look very pretty and white through the transparent glass. The water needs no changing, but occasionally a little more must be poured in to make up for what the plant absorbs."

"Dora is the more cheerful because she is generally occupied with planning or performing some useful work. Cousin, please to show your knitting work to Mrs. Novice."

The mittens were knit of Saxony yarn, and Dora had sold many of them at 75 cents a pair. Some were scarlet, with white lined cuffs, and some were drab, with blue, but all were alike in pattern, warm, durable and handsome, (fig. 118.) They were knit plain on both sides, which made them slightly elastic, the rows running lengthwise, the thumb-piece made separately and sewed in. The shape is shown in the figure. They were finished with cuffs crocheted in plain rows, beginning at the top and widening at the beginning of each row. The stitches of

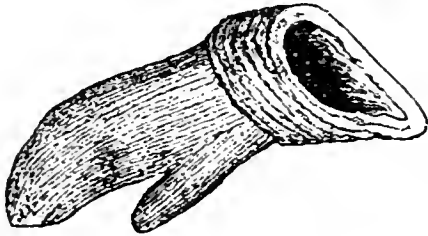


Fig. 118.—Mitten.

each row were taken through the back side only of the top stitches of the preceding row, which made a ribbing. When the cuff was deep enough, a zephyr of another color was fastened on, and a piece of the same shape crocheted, narrowing where the other half was widened. Then the whole strip was doubled together, sewed up at the side and set on to the mitten.

"The slippers which Dora makes for us reduce our shoe bill very much; they are so comfortable and convenient for house wear." Dora exhibited a pair; they were made of single zephyr—coarse yarn perhaps would have answered—crocheted in plain rows, beginning at the toe, and forming the shape of a canvas-worked slipper before it is made up. Each row rose from the back of the preceding row, like the mitten-cuffs. Widening was done from the toe to the top, along the instep, to fit the foot. A shell border surrounded the top of the slipper and a crocheted rosette was set on. The work was bound around the bottom, and sewed over-and-over on the wrong side to a cork sole, also bound. An elastic cord was run into the top. Mrs. Capable mentioned that she covered the soles with cloth on the outside when they began to get worn. She thought the soles of old gaiters might do instead of cork.

As the two friends were passing to the sitting room, Mrs. Novice observed, "You have oilcloth on your hall floor. Is that better than a carpet for halls?"

"I think so," was the reply. "It is much more easily kept clean and is more durable. We wash ours weekly with milk and warm water, which brightens the colors. If you ever put one down, let me beg you to lay several thicknesses of paper under it. When we had our first oilcloth, I did not know the importance of this, and when it wore out and we tried to take it from the floor, it refused to come. Where feet had trodden most, it stuck so to the floor that it could not be wholly removed."

### THE SITTING-ROOM.

"Now you shall see my arrangements for sewing. A large work-basket gets over-laden and disordered. I keep the implements, and nothing else, in a small basket; clothes to be made or mended are laid in this drawer.



When I go from home I take this bronze morocco case with me, (fig. 119;) it was a Christmas gift, and has proved most useful. It is lined with blue silk; has a needlebook, pincushion, and a place for scissors; a pocket for work; a receptacle for combs and brushes lined with oiled silk; and here you slip in

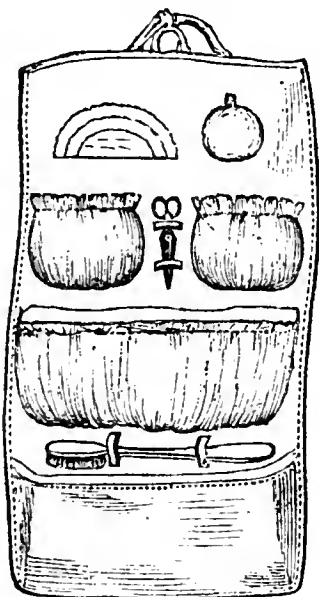


Fig. 119.—*Folding Morocco Case.*

a tooth brush—I always carry mine in a little oiled silk bag, so that it dampens nothing. This cutting board (fig. 120) is a great favorite; it goes to all the sewing circles, for the ladies find it very convenient to sit when they cut out work the whole afternoon. I can sew on dress facings without bending over a table when I have the board in my lap. It is hollowed in on one side so as to fit close up against one; and as it is marked with feet and inches on the edge, I can measure without going after a tape line. I have been making skirts lately. You can wear a white skirt twice as long by making it a little short, and putting on a full border with buttons and button holes; the border should come down a little longer than the skirt, and will be soiled first; then it can be unbuttoned and taken off, to leave the fresh edge of the skirt. We do not wear many white cotton skirts; it is better to change the underclothing twice a week than to fill up the clothes basket with skirts; white serge skirts can be worn under any but the thinnest dresses, and seldom require cleansing. A very good balmoral and hoop skirt, all in one, for winter wear, is easily made of red flannel, closely gores, with half a dozen tape shirrs at intervals on the under side, into which the springs of an old ‘skeleton’ are stitched.”

“I am very grateful for your instructions in economy to-day, and hope I shall remember half of them. Until our farm is all paid for, I expect to be poor, and I must learn to save.”

“My husband owes no debts; the last cent is paid up on the old place, and he lays up a little every year. But, my young friend, when you have lived as long as I, you will see that there is never a time when economy ceases to be a duty. I am glad to find you a believer in small and well-applied expenditure. At the same time I hope that Mr. Novice and you will see that cash is not the only kind of capital; that the domestic resources are of four kinds: Money, time, strength, and thought; that time and strength are to be husbanded, because, once lost, they cannot be

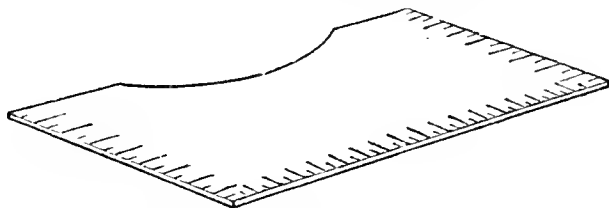


Fig. 120.—*Gradulated Cutting Board.*



regained; and thought, being the cheapest, must be made to save the other three.

“If you think yourself worth the least of all your husband’s possessions, you can start out a drudge and end your career in broken health or early death. You can be the one to jump when anything is wanted. You can wait on the ‘men folks’ so obsequiously that they will grow very particular as to the time and quality of dinner, and will never be able to hang up their hats or find a candle. You can train your little boy to selfishness by attending yourself to his personal wants and excusing him from every disagreeable duty—as many fond mothers have done, with one invariable result.

“Do you see my two youngest boys out there in the back kitchen?”

“Knitting! knitting there by the fire, like a couple of old grandmothers.”

“I never talk about them in their presence—it would harm them; but they are too far off to hear now. My sons all know how to knit, and have made many stockings, and mittens, and scarfs. They enjoy it as an amusement in long winter evenings. If a button comes off from their clothing, they do what it would be unpardonable laziness for their mother and sisters not to do for themselves, however busy—they sew it on again. While they are small they do my errands, wipe the dishes, help churn, and such like jobs; and when they are older and have men’s work to do, they do not ridicule my young helpers, for they know something of the magnitude of household tasks, and still assist me when hardiness and strength are requisite. I never milk; never whitewash; never put down carpets. I did not spend my honeymoon in teaching my husband to depend on me for what it was better for him that he should do. And he has been more than self-reliant; he has been unselfish and helpful; many times hanging out the washing for me when I was not well, and helping me at night to care for wakeful babies. So now, after twenty years, he has a healthy wife, as good as new, and healthy children, full of life and good humor. And the best of all is, that while the woman and the family are in some instances degraded into mere dollar-making machines, the direct aim of all our economy has been to promote and leave room for the social, mental, moral and religious.”

The sun was getting low, and Mrs. Novice put on her pink sun-bonnet, and hastened home to meet the time for supper.

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HOW TO PEEL PEACHES.—As the time for putting up peaches is at hand, we have procured from a lady friend the following recipe for peeling peaches, which we confidently recommend to our lady readers: Take a kettle of very strong lye, and heat to boiling; take a wire cage—similar to a corn-popper—fill it with peaches and dip into the lye for a moment; then into cold water. With a coarse towel wipe each peach, and the rind will peel off smoothly; then drop into fresh cold water, and the operation is complete. You need have no fear of injuring the flavor of the peach.

## DOMESTIC AND RURAL ECONOMY.

**P**RESERVING HARNESS AND BOOTS.—A correspondent of the COUNTRY GENTLEMAN thinks the following preservative will make boots last twice as long as without it, keep dry feet and preserve health. Take two pounds beef tallow, half a pound of rosin, quarter of a pound of beeswax, and four ounces of castor oil. Melt slowly, adding and mixing well a heaped tablespoon of lampblack. Do not let it boil. When thoroughly melted and mixed, it is set aside for future use; when wanted for use, put a small quantity in a tin basin and melt it, but do not let it boil. Apply to the leather quite warm, with a stout piece of cotton cloth, folded tightly and sewed strongly together, so as to be about two and a half inches long. Hold this in the fingers, and rub the composition well into the leather, holding the latter frequently over a hot stove. Apply both to soles and upper leather. In applying to harness, add about as much neat's foot oil, to be applied warm near a stove.

**OILING HARNESS.**—Well kept harness will last many years; neglected, allowed to be dirty, dry and unoiled, it often wears out in two years. It should be washed once a month with castile soap, using a good sponge, and oiled at least twice a year. Take the harness apart, soak it in water only blood warm for a longer or shorter period, according to its dryness and stiffness, from one to three hours. Wash with castile soap, work till soft and pliant, and hang up to dry moderately. When half dry, oil the pieces, and let them dry a day longer; then rub with a coarse cloth.

The following mode of making the best neat's foot oil is given by a correspondent:

Take the feet of a beef, crush the bones well with a sledge or axe, and boil them in a large pot of water for twelve hours. Make two quarts of tallow from fresh beef or mutton suet, and pour it into a four-quart can, (which should have a lid to keep out mice,) and place it on a stove. Add a lump of pure yellow wax as large as a hen's egg, stirring as it melts. Then fill up the can with neat's foot oil, and, removing it from the fire, continue to stir until the intermixture is thoroughly complete. This, when cold, will be of about the same consistence as hog's lard. Keep in the can a bit of sponge always ready for use. It ought to be damp when it first goes into the grease, as it will remain more flexible always afterwards than if greased when dry.

F. P. LeFevre, Lancaster Co., Pa., adopts the following mode, which he thinks has great advantages, being quickly done, without waiting to dry, making the leather soft, and preventing the penetration of water: Apply one or two coats of lampblack and castor oil, warmed enough to penetrate freely; then wash with soapsuds, with a sponge. The previous oiling will keep the water out and loosen the dirt. When dry rub with a mixture of oil and tallow, equal parts, with lampblack or Prussian blue, to give it color.

TRAVELING—PACKING THE SACHEL.—Nearly every person takes frequent journeys, and it often happens that something is forgotten in the hurry of packing the traveling-bag. A business acquaintance in New-York keeps a satchel constantly packed for a journey, and he is always ready at a minute's notice. We have adopted another mode, which, on the whole, we like better. It is this :—Take a card and write on it, at leisure, in a clear, distinct column, the name of every article which you will want while from home. This may be done by taking a list of everything in your bag, and adding to it as any omission is discovered. Then, whenever you are about starting on a journey, glance along down this list, and see what you want this time. You may thus pack a bag and get ready at any time in five minutes, and never forget an article. As a sample of such a list, we give the following, from which anything wanted is at once selected :

Watch,	R. R. Guide or Map,	Shaving Tools,
Match Box,	Lunch,	Money,
Pocket Compass,	Collars,	Tracts, Cards, &c.,
Spy Glass,	Cravats,	Paper,
Door Fastener,	Shirts,	Ink,
Thread and Needle,	Stockings,	Pencils,
Hair-Brush,	Gloves,	Envelopes,
Drinking Cup,	Overshoes,	Postage Stamps, &c.

Then, in starting or in changing cars, remember the three words, “*Overcoat, Satchel, Umbrella.*”

THE VIRTUES OF OIL.—A lady came to me with a new pair of scissors—they were screwed too tightly together, as she thought, but she could not unscrew them. I suggested a slight touch of oil, which was obtained from the sewing-machine feeder. The tenth of a drop was placed on the finger tip, and drawn along the edge or side of each blade. “Oh,” she exclaimed, “they work like a perfect charm! There is nothing like having a doctor!”

A neighbor was sick of a fever, and at every turn of the door, the sharp creak of the hinge annoyed him severely. No one thought of the simple remedy—which was applied by first touching a feather to the kerosene wick, and then drawing it between the joints. The creak ceased instantly, and the patient fell into a refreshing sleep.

The front door had to be slammed hard in order to make the latch shut. A single drop of oil made it catch without the least noise, and with perfect ease.

The hired man was conveying manure to the garden in a wheelbarrow. At every revolution the wheel went “skreech-y-shriek, skreech-y-creak!” I examined the axle, and found it fast wearing out. A little oil stopped the harsh music at once.

“What makes this sewing machine run so hard?” asked Mrs. — anxiously. “Don’t you hear that soft creak?” “Why yes, but I didn’t think that would make any difference.” “Put a drop of oil on that pivot,

and see." She did so, and exclaimed, "I declare! how nice it runs now."

A farmer was sowing grass seed with a hand Cahoon machine. He said it did the work well, but went "plaguey hard." "Put a little oil," said I, "on those pivots." He oiled them, and then said, on trying it, "Why this beats all! Why it goes as easy as open and shut—I would not believe it's the same machine!" X. X.

**CUTTING CORN-FODDER.**—Cutting corn-fodder an inch or more long, is not good for cattle. A farmer, who had some thirty or forty head of cattle, cut enough stalks in half a day to last them a week, by means of an eight horse power attached to a cutting machine, adjusted to cut scarcely an eighth of an inch in length. The stalks were thus reduced nearly as fine as chaff, and were eaten without difficulty. A large part of the sweet portions of the stalks, that are usually rejected and wasted, were thus consumed, and about double the amount of food thus obtained from them. Sweet, well-dried stalks, gave a great deal of the best feed. Water-soaked, half-fermented stalks, were not good for much, in whatever shape they might be fed. This mode of cutting admitted the mixture of meal without difficulty. Cutting by hand is laborious, and does not pay.

**CUTTING FEED FOR HORSES.**—An accurate farmer has furnished the COUNTRY GENTLEMAN a statement of his experiments with feeding cut feed and meal to his horses, accompanied with weighing and measuring. He cuts oat straw about an inch long, with a rawhide cylinder machine, and this chopped straw is then treated with corn meal and bran, mixed in about equal quantities as to weight, so that each horse has about a bushel of cut feed, and three quarts of the meal and bran, twice in each day. Sometimes hay is cut instead of oat straw, or both are mixed. It is found that two hundred pounds per week of this mixture of corn meal and bran, added to the cut feed, will keep a pair of working horses in the best condition. This he is satisfied from experiment is *less than two-thirds the cost of keeping them on uncut dry hay and whole grain*. The corn meal alone is not so good for horses, as when diluted with bran. An excellent meal is made of ground oats. The fodder is cut by horse power on stormy or spare days, and stored in large bins, so as to furnish always a surplus on hand.

**SHYING HORSES.**—L. A. D., in the Scientific American, says that a horseman should never "shy" himself when the horse shies, or show the least nervousness, nor notice it in the horse, and far less punish him for it, and adds: Allow me, having had a great deal of experience in managing horses, to add another bit of advice to nervous horsemen. Whenever they notice their horse directing his ears to any point whatever, or indicating the slightest disposition to become afraid, let them, instead of pulling the rein to bring the horse towards the object causing its nervousness, pull it on the other side. This will instantly divert the attention of the horse from the object exciting his suspicion, and in ninety-nine cases

out of a hundred the horse will pay no more attention to the object, from which he will fly away if forcibly driven to it by pulling the wrong rein.

**PRICE OF CORN AND PORK.**—The best pork raisers whom we have met with, make a pound of pork from five pounds of corn meal. When pork is five cents a pound they consequently get one dollar a bushel for their corn. Everything was done in the best manner—good breed, cleanliness, regularity, corn ground and scalded with three pails hot water to one pail of meal, standing twelve to eighteen hours. With what is termed ordinary good management, it requires about twice as much corn, or 10 lbs.; to make a pound of pork—and the common rule is, corn at 50 cents, makes pork at \$5; corn at one dollar makes pork at \$10; and so on. Scalded meal is worth double corn in ear.

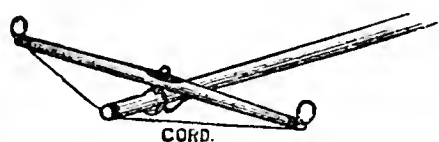


Fig. 121.—*Rein Protector.*

**REIN PROTECTOR.**—Annexed is a contrivance, (fig. 121,) to keep the reins from getting under the end of the wagon tongue while teaming. The cord passes through the ring in the end of the tongue.

**ECONOMICAL PAINT.**—We have tried many kinds of cheap paint, some nearly worthless, and others of considerable value. But the best, by far, yet employed, is first a coat of crude petroleum, and then one or two coats of the Averill or some equally good paint, if there is such to be found. We have tried this mode of protecting wood, on several tenant houses. These houses were made of rough pine plank outside, neatly battened, studded or battened on the joints inside, and lathed and plastered on the studding. The roofs were covered with slate laid on felt. When the painting was completed, the exterior had a handsome appearance—better than if painted on a planed surface. We would recommend painting on the rough surface for any battened or vertically boarded house, even if a large and handsome dwelling.

These houses are 16 by 24 feet, with a kitchen wing 12 feet square. The eaves are 14 feet high, making good chamber rooms. A common laborer applied the petroleum with a whitewash brush—half a barrel, costing \$6, being required for each house. The cost of applying was two dollars and a half—eight dollars and a half for the petroleum coat. Twelve dollars' worth of the Averill paint, (which is furnished by the company in New-York, in kegs ready for the brush, and tinted, and sent in this shape by railroad,) was sufficient for each house, three dollars more for painting—making twenty-three and a half dollars for the oiling and painting complete. The rough surface takes the crude oil better, and retains more paint. Hence one coat of the Averill mixture on the oiled surface will answer well for a long time, when another may be added at less expense. This paint is particularly recommended for *adhering*—a few weeks only being required for the petroleum to dry in before the paint is applied.

One of the houses was sided with good hemlock, making it much cheaper than the pine houses; but more time was required in painting the rough

surface. It makes, however, as neat an appearance as any, and forms a handsome cottage when surrounded by flowering shrubs and embroidered with climbers.

**RULES FOR LABORERS.**—Employers commonly give *verbal* rules for the government of laborers, which are soon forgotten, or irregularly observed. A much better way is to fix on certain leading directions, have them printed in large letters on stiff pasteboard, and nail them up in the barn, workshop, shed or stable. If any infraction occurs, it is much easier and more effective to point silently to the rules than to be compelled to go into a lecture.

*Every agricultural warehouse or store should have such rules suitably printed and for sale for the use of farmers.* Fifty cents paid for such a card would be worth as much as ten dollars paid for a plow.

The following is a specimen of such rules as may be adopted, which may doubtless be improved in some particulars.

1. Be regular and uniform in hours of labor.
2. Do every operation in the best manner.
3. Finish one job before beginning another.
4. Clean every tool at night or sooner when done with.
5. Bring in all tools and machines at night.
6. Treat all animals kindly and gently.
7. Never talk loudly to oxen or horses.
8. Study neatness in everything you do.
9. Never enter the house with muddy boots.
10. Never use profane language or get in a passion.
11. Take a general interest in the success of the farm.
12. Study to improve constantly in knowledge and skill in farming.

**PORTABLE REVOLVING LEVER.**—A correspondent of the *Prairie Farmer* gives the accompanying figure of a lever, (fig. 122,) answering the purpose

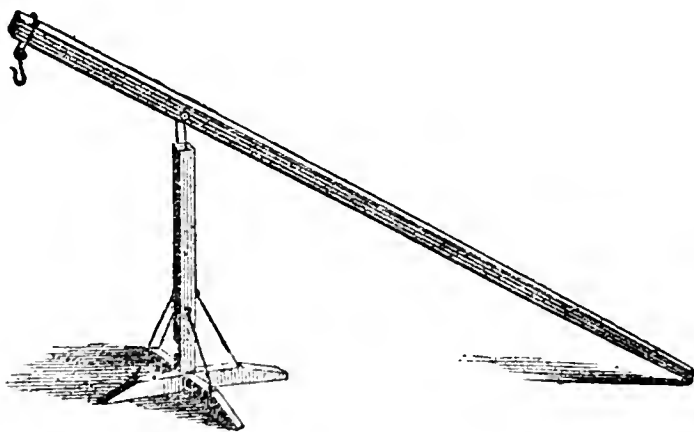


Fig. 122.—*Portable Revolving Lever.*

of a crane, to save labor in scalding hogs, and for other purposes. It needs but little explanation. Its size may be obviously varied to suit its intended purposes, but the dimensions given are—pole 22 feet long, (of *light* wood,) foundation, two pieces, 6 by 6 inches, and 6 feet long; hard wood post 6 feet long, and braces 2 feet long of  $\frac{1}{2}$  inch iron. The post has a tenon on the bottom fitting a two-inch auger hole; a clevis on the top with a pivot entering a hole, and washer at top of post, and a clevis, hook and bolt on the end of the pole.

A small rope may be attached to the small end of the pole. It will be obvious that the pole should be much the strongest at the pivot, and taper moderately to the shorter end, and much more towards the longer end.

**SPOUTS FOR MAPLE TREES.**—I would say to all who are using wooden sap spouts, to throw them away, and get some of sheet-iron—galvanized sheet-iron is the best. They should be  $1\frac{1}{4}$  inches at the small end, and 2 inches at the large end, and from 6 to 10 inches long; but if hooks are used to hang up the buckets, they need not be more than 5 inches long. My spouts cost  $12\frac{1}{2}$  cents per pound. I bent them myself, by cutting a groove in a block with a gouge, and then taking a round iron and pressing the spout into the groove. Tin will do for spouts, but they have to be bent smaller. I have some made out of old tin pails, which have been in use 18 years. The spouts will pay for themselves in one year, to anybody that uses spouts driven after a gouge; all you have to do is to hew off the outer bark of the tree, and drive the spout into the inside bark with a mallet or axe. I use hooks for hanging up about one-third of my tubes, made of nail rods, and costing  $1\frac{1}{4}$  cents each.—L. H. K., in COUNTRY GENTLEMAN.

**HOW TO KEEP BACON.**—In answer to an inquiry, several correspondents have given the following different modes for keeping hams, either of which may be employed according to circumstances, or the facilities possessed or at hand:

Mix equal parts of slacked lime and wood ashes; spread three inches of the mixture on the bottom of a box, then a layer of bacon; cover with lime and ashes, lay a few laths on, then a layer of bacon, and continue until the boxes are full. Set in a dry, cool place. All ashes will answer, if no lime near by. For a few pieces for a family, cover each piece of bacon or ham with paper, and pack in a salt barrel, with ashes between each piece, and fill the barrel up with ashes. The meat will be as good at the end of the year as when put in. I have tried it thirty years and never failed. D.

Do not pack it down in anything, but take each piece and hang it in a loose bag; stuff the bag tight with cut hay, and your hams will keep sound and fresh for an indefinite time. I have hams two and three years old, perfectly sound, and retaining their juices, and they improve in quality like old wine. J. S.

If he will pack his hams, shoulders and dried beef in barrels, and cover them with powdered charcoal, his meat will keep sweet, and will not be touched by flies, mice or rats. E. B.

Malt screenings will keep bacon better than bran. G. G.

I have always been opposed to "packing," but if a man will pack, ashes are better than bran, and sticks laid in between it to let it have air, are better than either; then cover it with what you please, to keep the flies off. If you want good, fine flavored bacon, *give it air and keep it dry.* A dry atmosphere is a *sine qua non* to good bacon. The prime necessity of fire

under meat is the drying process, and *not* the smoke. Bacon hung up in a dark, dry place, is not likely to be disturbed by flies. Whenever the atmosphere is sufficiently damp to settle upon the meat and, (as some say,) *cause it to sweat*, drive out the dampness with fire, and burn a little brimstone in it. Thus you will drive out the flies and, "save your bacon." AMATEUR.

Nice sweet timothy hay, cut fine, is the best thing extant for packing bacon, as it imparts a pleasant aromatic taste to the meat. Bran will sour and spoil the bacon. J. M. E.

A WASHING FLUID.—We have lately tried a washing fluid which has proved very successful in extracting the dirt from cotton and linen, and the proportions are such that they cannot injure the clothes :

- Five pounds of sal-soda.
- One pound of borax.
- Half a pound of fresh unslacked lime.
- Four ounces salts of tartar.
- Three ounces liquid ammonia.

Dissolve the soda and borax in one gallon of boiling water ; when well mixed, pour in the liquid ammonia and salts of tartar. Boil the half pound of lime for five minutes in one gallon of water ; set it aside to settle, and when clear pour it off carefully, not allowing any sediment to mingle with it. Pour the two gallons of solution together, and turn upon them eight gallons of cold water. Put into a cask or jugs.

The night before washing, take six tablespoonfuls to a tub filled with clothes, mixing it with four pails of warm water. Soak them over night ; next morning add hot water enough to wash the clothes with good soap-suds. Boil the clothes. Wash out another tub full of clothes in the same water used for the first boiler.

One trial of this fluid will show its good effects.

An excellent soft soap can be manufactured from this compound. Take one quart of the fluid ; slice into it three pounds of yellow bar soap, and add to it two pounds of sal-soda. Boil it in three gallons of water for ten minutes, and it will make four gallons of soft soap which will prove unequalled for all purposes wherein soap is needed.

In using these receipts for washing, the clothes do not need to boil more than half an hour, and in many cases persons prefer to pour boiling water upon them, and let them stand until it is cool enough to wring out. By thus doing it is thought the clothes are whiter.

These receipts have been sold through the country at high prices, and a good deal of money has been made from their manufacture.

WATER-PROOF BLACKING.—A correspondent of the COUNTRY GENTLEMAN gives the following mode of making a thoroughly water-proof blacking. We can vouch for its efficacy, having seen and tried substantially the same :

Take an old pair of India rubber shoes (boots or any old India rubber ;)



cut them up and pull off the cloth lining ; put the rubber in about a pint of neat's foot oil, and set it on the stove until the rubber is entirely melted, stirring it once in a while, and don't let it boil or burn. It will take about two days to melt the rubber. As soon as the rubber is melted, stir in one-half pound of beef or mutton tallow, and one-half pound of bees-wax. If it is not black enough, you may add a little lamp-black, but I don't see any use in it.

Now to apply to the boots : Wash them clean of mud and blacking ; when they are nearly dry apply the water-proof all over them—if the weather is cold, work near the stove. The best thing to use in applying this blacking, is one's hands and considerable elbow grease, to rub it well into the leather.

RULES FOR MAKING BUTTER.—1. For making good butter, the first thing is to have good sweet pasture, free from weeds or any growth that will give a bad taste to the milk. Good upland grass is better than coarse grass growing on wet places. Some dairymen think that limed is better than unlimed land, but this is a matter of minor importance. Others regard the practice of sowing plaster in spring, and repeating it early in autumn, as tending to sweeten grass.

2. Good, well selected cows, are the next requisite.

3. Perfect cleanliness, from beginning to end, is indispensable—the most so, perhaps, of any one thing. No dirt or dust must drop into the milk, for which reason the animals should have a clean place to lie on, and never be allowed to stand in mud or manure ; vessels all thoroughly washed—scalded whenever necessary to preserve perfect sweetness—including pails, pans, pots, churns, workers, and tubs or firkins. They must be first washed clean with *cold* water ; for if hot water is used first, it will curdle the milk in the cracks or corners, and prevent its washing out.

4. A perfectly pure *air* is of great importance. Bad odors will taint butter. The dairy house should therefore be far away from manure yards and everything else of the kind. Keep tobacco smoke off the premises.

5. Let the butter be well worked, so as to press out all the buttermilk. It is impossible to have a good article if this is not done. Perhaps this is the most common cause of failure. If much milk is left in, it soon ferments and makes rancid and worthless butter.

6. In laying down for winter, use *new* firkins—never use them a second time ; and pots or jars must not be used, if they have ever had had butter in them, or pickles, or anything else that will taint them—the taint can never be wholly removed.

7. The best dairy salt is important. Butter in hot weather must be covered and excluded from the air with saturated brine.

SAGGING OF POSTS.—Every farmer in the country has witnessed the inconvenience of a sagging gate. New ones are well constructed and well secured to firmly set posts, by stout hinges. The owner takes special pains to make a good self-fastening latch, and the whole contrivance being in

perfect order, he promises himself much satisfaction from these convenient and permanent entrances to his yards and fields. All goes well the first summer. But he finds after the next spring that the latch strikes too low, and will not catch the socket. The soft earth has given a little, and the constant pressure of the heavy gate has caused the post to yield, a hair's breadth at a time, till it has varied a little from the true perpendicular. Being now often left unfastened, it beats against the post, and the latch is broken. The subsequent hard usage it receives makes the post settle away still more. Subsequently the gate rests on the ground, over which it is laboriously dragged day after day and year after year, until the hinges are broken.

Some of our readers can figure with approximate accuracy what the damages are likely to be from cattle breaking through this unshut gate into the wheat and corn fields. It is obvious that a firm, erect post to

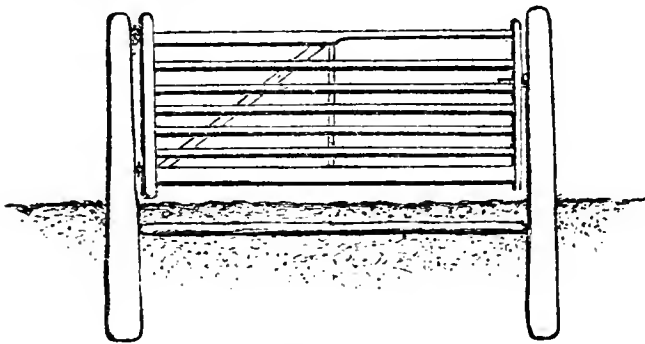


Fig. 123.

every gate contributes greatly to successful and satisfactory farming. A commonly recommended mode of obviating the difficulty is shown in fig. 123, a trench being cut between the posts directly under the gate, and a piece of durable timber, (such as a white oak

rail, a locust pole, or a cedar scantling,) laid in and compactly covered with earth. The nearer it is to the surface, the better will be the bracing which it will afford; the deeper it is buried, the longer it will last. It is therefore best to procure the most durable wood and place it near the surface. This mode of bracing accomplishes the desired purpose partially. Unless the earth is very hard and firm at the lower part of the post, it will slowly yield to the outward pressure, and in process of time the bottom will be thrown out, as shown in fig. 124, and the gate will settle on the ground. A more thorough

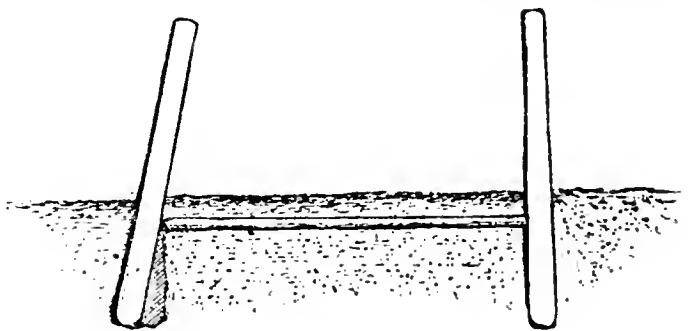


Fig. 124.

mode therefore is to dig a deep trench and lay in two connecting pieces, as shown in fig. 125. The bottom one must be dove-tailed into the bottom of the posts, to prevent spreading, and a pin or a few spikes in addition will render the connection firmer. This lower timber, being excluded from air and changes of moisture, will last an age, and the upper one only being likely to decay, will need replacing. By this mode the gate will be sure to keep its place. But it is attended with considerable

labor, and an easier mode, shown in fig. 126, will answer nearly or quite as well. Take two pieces of durable timber, (short posts, or an oak or

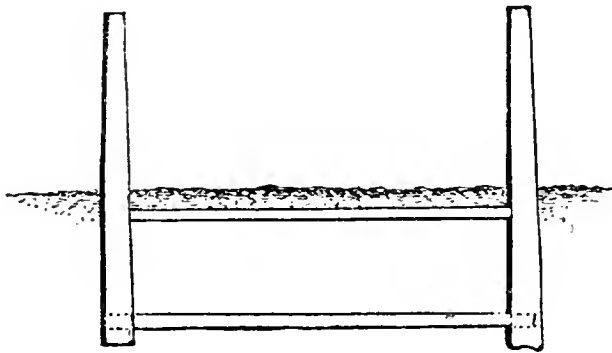


Fig. 125.

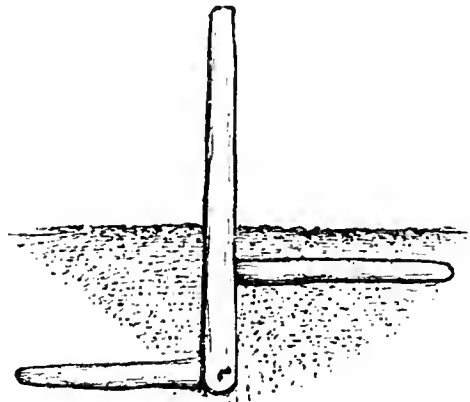


Fig. 126.

chestnut rail sawed in two,) and place the *ends* against the post in the manner represented, beating the earth firmly about them. If only three or four feet long, they can never be moved a hair's breadth by sliding endwise in the soil when firmly placed. Some would prefer to place them *across* the post, but this is quite a mistake, as earth will thus yield by hard and continued pressure; while no practicable force could move them in the slightest degree endwise. It often happens that such pieces of durable timber are found on every farm, and a moderate degree of labor will cut a short, deep trench on the outer side, and a shallow one on the inner, and firmly place them in position.

**LAMBREQUINS.**—In answer to inquiries concerning lambrequins, a correspondent of the COUNTRY GENTLEMAN says that material, quantity and

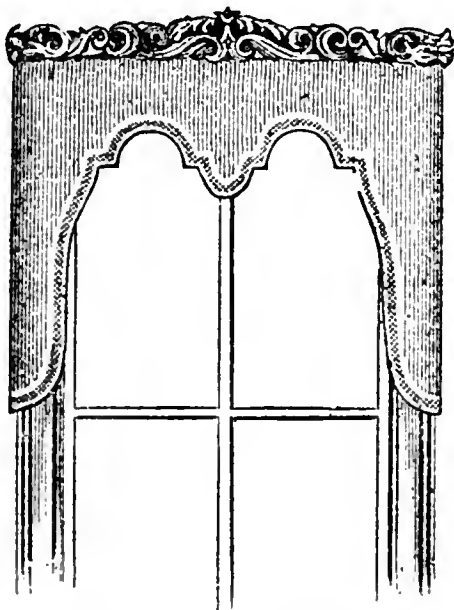


Fig. 127.—Lambrequin.

pattern must depend entirely upon one's purse, taste and size of the window. They are made to drape over under curtains, either shades or drapery. If desired cheaply, they can be cut out of green, blue or crimson empress cloth, into deep points, scollops or battlemented squares; they must be lined with stiff cambric, and trimmed either with worsted fringe or wide gimp. They are nailed to fixtures of black walnut, gilding, or plain pine wood covered with the same material as the lambrequins. They are very tasteful when made of chintz, edged with bright blue, green or turkey red for bordering; also of plain cotton, starched stiffly and trimmed with home-made crochet or netted fringe. The depth of them must be regulated by the height of the windows. If they are twelve feet high, the lambrequins can be made

a yard in length at the sides of the window, and cut up in a graceful half scallop, with a very large scallop in the centre, which is laid in a deep fold in the middle, at the top of the lambrequin, and hangs gracefully from the fixture. Any woman possessing taste and ingenuity can produce a fine effect at a small expenditure, and add greatly to the adornment of parlor or chamber. The material, if not of sufficient width, can be easily pieced out so as not to mar its effect. Merino or thibet cloth will look nearly as well as empress cloth or reps.

We add an illustration, (fig. 127,) showing a simple pattern often used.

**HOW TO DESTROY RED ANTS.**—Take a *white china plate*, and spread a *thin covering* of common *lard* over it, and place it on the floor or shelf infested by the troublesome insects, and you will be pleased with the result. Stirring them up every morning is all that is necessary to set the trap again. A young bachelor sends this receipt, having used it with perfect success in his aunt's closet.

**CHEAP BIRD HOUSES.**—One of my neighbors uses tin cans which have been emptied of fruit, for houses for the birds. The smaller insectivorous birds can easily build in them. He fastens them by a band of tin, which is placed around the can and nailed through the ends. Better do this than allow the cans to litter up the yard, and besides it *pays* to protect the birds.

**BUTTER-WORKERS.**—Two principal forms are adopted for butter-workers, variously preferred by different manufacturers. One consists of a brake or lever, fastened at one end by a swivel joint, so that the face of the brake may be brought down with force on the butter, which rests on a trough-table, which is best if with a marble top.

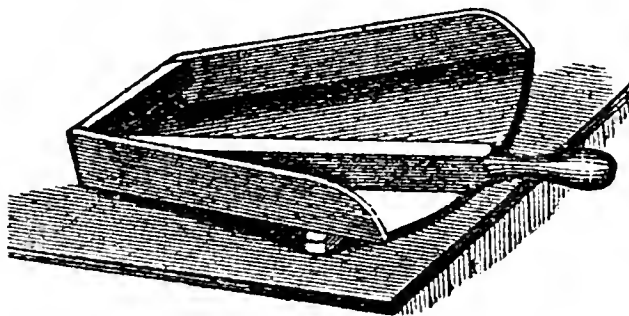


Fig. 128.

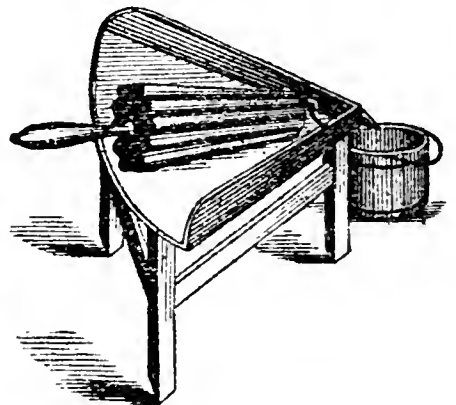


Fig. 129.

Another form has a grooved roller, similarly attached, which is used by rolling and pressing the butter at one operation. The former is represented by fig. 128, and the latter by fig. 129, which also shows the pail into which the buttermilk flows.

**FARM ACCOUNTS.**—H. H. Walter states in the *Boston Cultivator*, that since he has kept farm accounts he has cleared double the money which he had done before, as it enabled him to see just where he could obtain the largest profits.

## THE FARMER'S REGISTER.

THE FOLLOWING LISTS are chiefly made up from the advertising columns of the COUNTRY GENTLEMAN during the year preceding Oct. 1, 1870:

## BREEDERS OF IMPROVED STOCK.

## AYRSHIRE CATTLE.

Abbott, J J C..... Montreal, Can  
 Allen, Thomas..... Pittsfield, Mass  
 Appleton, Francis H... .. Linnfield, Mass  
 Ashcroft, J E..... Seneca Falls, N Y  
 Ball, A P..... Derby Line, Vt  
 Birnie, William..... Springfield, Mass  
 Brown, Henry T..... Providence, R I  
 Bradley, G C..... Watertown, N Y  
 Brodie, James..... Rural Hill, N Y  
 Burleigh, B W..... Ticonderoga, N Y  
 Byrne, Patrick..... St. Joseph, Pa  
 Chapman, C S..... Malone, N Y  
 Collins, H S..... Collinsville, Ct  
 Coy, E L..... West Hebron, N Y  
 Codman, Ogden..... Lincoln, Mass  
 Cragin, G D..... Rye, N Y  
 Crozier, William..... Northport, N Y  
 Curtis, F D..... Charlton, N Y  
 Fitch, Thomas..... New London, Ct  
 Freeman, J W..... Troy, N Y  
 Gardner, J H..... West Killingly, Ct  
 Gibb, John L..... Compton, Can  
 Hammond, G E..... New-London, Ct  
 Hungerford, S D..... Adams, N Y  
 King, W S. . . . . Minneapolis, Minn  
 Landon, S . . . . . Eden, N Y  
 Lester, C S..... Saratoga Springs, N Y  
 Loring, Harrison..... Boston, Mass  
 Morgan, J H..... Ogdensburg, N Y  
 Myers, M E..... Charlton, N Y  
 Odell, D H..... Brant, N Y  
 Pond, C M . . . . . Hartford, Ct  
 Rumsey, H M..... Salem, N J  
 Seney, Robt..... Mamaroneck, N Y  
 Sheffield, Dr. W W. . . . . New London, Ct  
 Smith, E W... .. New-London, Ct  
 Stark, W..... Manchester, N H  
 Stewart, H L..... Middle Haddam, Ct  
 Stiles, W H..... Mamaroneck, N Y  
 Stimson, S J... .. Linden, N J  
 Sturtevant, Messrs. . . . . S. Framingham, Mass  
 Tilton, H W..... Walpole, Mass  
 Thompson, S N..... Southboro, Mass  
 Walcott & Campbell.... N Y Mills, N Y  
 Walling, Nelson, . . . . . Millbury, Mass  
 Watson, Wm..... West Farms, N Y  
 Wells, S M & D..... Wethersfield, Ct  
 Whitney, N S. . . . . Montreal, Can

## BRETON CATTLE.

Maitland, Robert L..... New-York

## DEVON CATTLE.

Buckingham, J..... Zanesville, O  
 Cole, Walter,..... Batavia, N Y

Hilton, Joseph,..... New-Scotland, N Y  
 Howard, A C..... Zanesville, O  
 McHenry, J H..... Pikesville, Md  
 Morris, Dr J C..... Westchester, Pa  
 Olmstead, H M.... . . . . Morristown, N J  
 Rockwell, J M..... Butternuts, N Y  
 Sessions, H M..... S. Wilbraham, Mass  
 Wainwright, C S..... Rhinebeck N Y

## HEREFORD CATTLE.

Corning, E Jr..... Albany, N Y  
 Gibb, John L..... Compton, Can  
 Stone, Fred. Wm..... Guelph, Can

## HOLSTEIN OR DUTCH CATTLE.

Baker, Thos.,..... Barton, Vt  
 Ball, A P..... Derby Line, Vt  
 Chenery, W W..... Belmont, Mass

## JERSEY OR ALDERNEY CATTLE.

Allen, Thomas,..... Pittsfield, Mass  
 Alexander, A J..... Spring Station, Ky  
 Anderson, W P..... Cincinnati, O  
 Aspinwall, J L..... Barrytown, N Y  
 Austin, E H..... Gaylordsville, Ct  
 Bagby Farm,..... Tiffin, O  
 Barnes, Wallace..... Bristol, Ct  
 Barstow, J S..... Newport, R I  
 Bassett, H W..... Derby, Ct  
 Beach, C M..... Hartford, Ct  
 Biddle, Clement,..... Philadelphia, Pa  
 Bowditch, E F..... Framingham, Mass  
 Bradley, G W..... Hamden, Ct  
 Bradley, J H..... Woodbury, N J  
 Brown, E B..... Mystic, Ct  
 Brooks, John,..... Princeton, Mass  
 Buck, M E..... Poquonnock, Ct  
 Bush, F T..... Auburndale, Mass  
 Bush, James P. .... . Boston, Mass  
 Churchman, F M..... Indianapolis, Ind  
 Codman, Ogden..... Lincoln, Mass  
 Collamore, Davis..... Orange, N J  
 Colt, Samuel C. . . . . Hartford, Ct  
 Converse & Flagler,.... Arlington, Mass  
 Converse J C..... Southboro, Mass  
 Cragin, George D..... Rye, N Y  
 Crozier, Wm..... Northport, N Y  
 Curtis, F D..... Charlton, N Y  
 Curwen, G F..... W. Haverford, Pa  
 Darlington, R S.... . . West Chester, Pa  
 Davis, D E..... Salem, N J  
 Day, R L..... Boston, Mass  
 Delano, Chas.,..... Northampton, Mass  
 Dike, Lyman,..... Stoneham, Mass  
 Dillon, J C..... Weston, Mass  
 Dinsmore, W B..... Staatsburgh, N Y  
 Dunlop, J S..... Indianapolis, Ind

- Estes, J J ..... East Abington, Mass  
 Farlee, G W ..... Cresskill, N J  
 Fearing, D B ..... Newport, R I  
 Fenner, H ..... S. Orange, N J  
 Fitch, Thomas, ..... New-London, Ct  
 Frost, George, ..... West Newton, Mass  
 Giles, John, ..... Putnam, Ct  
 George, Thomas, ..... Newburgh, N Y  
 Glasgow, W H ..... St. Louis, Mo  
 Goodman, R ..... Lenox, Mass  
 Gould, Thomas, ..... Aurora, N Y  
 Greene, J W ..... Sayville, N Y  
 Gridley, S R ..... Bristol, Ct  
 Hadwen, O B ..... Worcester, Mass  
 Halsted, J M ..... Rye, N Y  
 Hand, Thomas J ..... Sing Sing, N Y  
 Harwood, J A ..... Littleton, Mass  
 Haven, John, ..... Fort Washington, N Y  
 Hayes, Francis B ..... Boston, Mass  
 Hoffman, J A ..... Leicester, Mass  
 Howe, Edward, ..... Princeton, N J  
 Howell, Dr. B P ..... Woodbury, N J  
 Hubbell, O S ..... Philadelphia, Pa  
 Hughes, W. H. T., *Importer*, New-York  
 Ide, L N ..... Claremont, N H  
 Jenkins, J. Stricker, ..... Baltimore, Md  
 Jewett, P A ..... New-Haven, Ct  
 Johnson, C S ..... Uncasville, Ct  
 Johnson, W R ..... Warwick, R I  
 Kearney, J. Watts, ..... Lexington, Ky  
 Kelsey, H C ..... Newton, N J  
 Kinney, J D ..... Cincinnati, O  
 Kittredge, B ..... Peekskill, N Y  
 Large, S P ..... West Elizabeth, Pa  
 Leavens, K H ..... Plainfield, Ct  
 Mackie, J M ..... Great Barrington, Mass  
 Maitland, Robert L ..... New-York  
 Mallory, Joel, ..... Troy, N Y  
 McCulloh, J W ..... New-York  
 McHenry, J. Howard, ..... Pikesville, Md  
 Morrell, Robert, ..... Manhasset, N Y  
 Newell, Dr. A D ..... New-Brunswick, N J  
 Ogdon, William B ..... New-York  
 Osgood, H B ..... Whitinsville, Mass  
 Page, Joseph F ..... Philadelphia, Pa  
 Park, H S ..... Bayside, N Y  
 Parsons, S B ..... Flushing, N Y  
 Powell, James B ..... Hartford, Ct  
 Powers, A E ..... Lansingburgh, N Y  
 Powers, Joseph, ..... No. Haverhill, N H  
 Proudfit, E ..... Troy, N Y  
 Redmond, William, ..... New-York  
 Reynolds, I W H ..... Frankfort, Ky  
 Robbins, S W ..... Wethersfield, Ct  
 Rockwell, J T ..... W. Winsted, Ct  
 Root, L B ..... New-Hartford, N Y  
 Rumsey, H M ..... Salem, N J  
 Scudder, M S ..... Boston, Mass  
 Seney, G I ..... New-York  
 Sharpless, Charles L ..... Philadelphia, Pa  
 Sharpless, Samuel I ..... Philadelphia, Pa  
 Sheldon, A J ..... St. Joseph, Pa  
 Stark, W ..... Manchester, N H  
 Stephens, S. Sheldon, ..... Montreal, Can  
 Sturtevant, Jos. E., So. Framingham, Mass  
 Stuart, Edwin, ..... Hamorton, Pa  
 Swain, J B ..... Brouxville, N Y  
 Tatum, George M ..... Woodbury, N J  
 Thompson, James, ..... Worcester, Mass  
 Tilden, M Y ..... New-Lebanon, N Y  
 Torrey, J W ..... Philadelphia, Pa  
 Twaddell, Dr. L H ..... Philadelphia, Pa  
 Underhill, A A ..... Clinton Corners, N Y  
 Walcott & Campbell, ..... N Y Mills, N Y  
 Ware, J B ..... Townshend, Vt  
 Waring, G. E., Jr., ..... Newport, R I  
 Wellington, C ..... East Lexington, Mass  
 Wellington, H M ..... Jamaica Plain, Mass  
 Wells, E L ..... Pittsfield, Mass  
 Wells, Phil. .... Ameniam, N Y  
 Wheeler, A D ..... Providence, R I  
 Whitehead, Joseph, ..... Trenton, N J  
 Wilmerding, G G ..... Islip, N Y  
 Wing, John D ..... Washington, N Y
- KERRY CATTLE.
- Appleton, D F ..... Ipswich, Mass  
 Green, Andrew H ..... New-York  
 Perry, E B ..... Providence, R I  
 Sinclair, Samuel, ..... New-York
- SHORT-HORN CATTLE.
- Alexander, A J ..... Spring Station, Ky  
 Alverd, C T ..... Wilmington, Vt  
 Ashworth, John, ..... Ottawa, Can  
 Beach, C M ..... Hartford, Ct  
 Bedford, G M ..... Paris, Ky  
 Bedford, Edwin G ..... Paris, Ky  
 Blanchard, W F ..... Manlius, N Y  
 Blanshard, Wm ..... Penn Yan, N Y  
 Brace, A G ..... West Winfield, N Y  
 Bradley, A ..... Lee, Mass  
 Brockway, E P ..... Ripon, Wis  
 Brown, Warren, ..... Hampton Falls, N H  
 Brown, James N.'s Sons, ..... Berlin, Ill  
 Butts, George, ..... Manlius, N Y  
 Cameron, R W ..... New-York  
 Campbell, J G J ..... Lawrenceville, N J  
 Cass, A J ..... Holliston, Mass  
 Charles, R S ..... Belvidere, N Y  
 Christie, David, ..... Paris, C W  
 Cochrane, M H ..... Montreal, Can  
 Coffin, Charles E ..... Muirkirk, Md  
 Coffin, R G ..... Washington N Y  
 Conger, A B ..... Haverstraw, N Y  
 Cornell, Ezra, ..... Ithaca, N Y  
 Davis, D E ..... Salem, N J  
 Dunning, E J ..... Lenox, Mass  
 Dodge, Wm B ..... Waukegan, Ill  
 Dun, R G ..... London, O  
 Duncan, W R ..... Towanda, Ill  
 Fitch, G N ..... Logansport, Ind  
 Goodell, D H ..... Antrim, N H  
 Goodman, R ..... Lenox, Mass  
 Goe, J S ..... Brownsville, Pa  
 Graff, H C ..... Maysville, O  
 Greene, J W ..... Sayville N Y  
 Griswold, A W ..... Morrisville, Vt  
 Groom, B B ..... Winchester, Ky  
 Haight, D B ..... Dover Plains N Y  
 Hampton, Lewis, ..... Winchester, Ky  
 Harison, T L ..... Morley, N Y  
 Harwood, James A ..... Littleton, Mass  
 Hayward, S ..... Cummington, Mass  
 Hills, C ..... Delaware, O

Hostetter, A..... Mt Carroll, Ill  
 Hoyle, George V..... Champlain, N Y  
 Hubbard, A C..... Danbury, Ct  
 Hubbard, C H..... Springfield, Vt  
 Jones, T C..... Delaware, O  
 Juliard, J..... Bainbridge, N Y  
 King, William S..... Minneapolis, Minn  
 Kinkead, F P..... Midway, Ky  
 Kinnaird, J G..... Lexington, Ky  
 Markham, W G..... Avon, N Y  
 Merwin, W M..... Milford, Ct  
 Milne, R..... Lockport, Ill  
 Murray, George..... Racine, Wis  
 Neeley & Bro..... Ottawa, Ill  
 Page, John R..... Sennett, N Y  
 Parsous, C Jr..... Conway, Mass  
 Perry, W N..... Rushville, N Y  
 Phelps, E A..... Avon, Ct  
 Pickrell, J H..... Harristown, Ill  
 Plunkett, G T..... Hinsdale, Mass  
 Pond, N G..... Milford, Ct  
 Robbins, George L..... Worcester, Mass  
 Rosenberger, G W..... New-Market, Va  
 Schieffelin, W H..... New York  
 Scott, M T..... Lexington, Ky  
 Shedd & Van Sicklen..... Burlington, Vt  
 Simpson, W Jr..... West Farms, N Y  
 Skidmore, P A..... Beekman, N Y  
 Skinner, H H..... Silver Lake, Pa  
 Snell, John..... Edmonton, Can  
 Stone, F W..... Guelph, Can  
 Streeter, S R..... E Cleveland, O  
 Talbutt, J H..... Lexington, Ky  
 Talcott, Jonathan..... Rome, N Y  
 Thornton, John, *Exporter*,... London, Eng  
 Trabue, A E..... Hannibal, Mo  
 Underhill, A A..... Clinton Corners, N Y  
 Van Meter, J M..... Midway, Ky  
 Walcott & Campbell,.... N Y Mills, N Y  
 Ward, C K..... Leroy, N Y  
 Warfield, William, ... Lexington, Ky  
 Whitman, A..... Fitchburg, Mass  
 Wilber, M J..... Quaker Street, N Y  
 Winslow, A M & Sons,.... Putney, Vt  
 Wells, C L..... New-Hartford, N Y  
 Wentworth, John,..... Chicago, Ill  
 Young, W W..... Louisville, Ky

## HORSES.

Alexander, A J..... Spring Station, Ky  
 Backman, Charles,.... Stony Ford, N Y  
 Bagby Farm, ..... Tiffin, O  
 Battell, R..... Norfolk, Ct  
 Cameron, R W..... New-York  
 Case, W H..... Delaware, O  
 Chenery, W W..... Belmont, Mass  
 Cochrane, M H..... Montreal, Can  
 Conger, A B..... Haverstraw, N Y  
 Crozier, William, ..... Northport, N Y  
 Gibb, John L..... Compton, Can  
 Goe, J S..... Brownsville, Pa  
 Haight, D B..... Dover Plains, N Y  
 Hitchcock, G C..... New-Preston, Ct  
 Hungerford & White,.... Adams, N Y  
 Irwin, D B..... Middletown, N Y  
 Kinkead, F P..... Midway, Ky  
 Leffingwell, W A..... Coldenham, N Y

Morris, Lewis G..... Fordham, N Y  
 Ogden, G W..... Paris, Ky  
 Ogden Farm,..... Newport, R I  
 Parker, J J..... West Chester, Pa  
 Parks, C C & R H..... Waukegan, Ill  
 Phillips, E T..... Plainfield, N J  
 Pickrell, J H..... Harristown, Ill  
 Reynolds, I W H..... Frankfort, Ky  
 Russell, H S..... Boston, Mass  
 Stevens, G C..... Milwaukee, Wis  
 Taber, George, ..... East Aurora, N Y  
 Thorne, Edwin, Washington Hollow, N Y

## SHETLAND PONIES.

Alexander, A J..... Spring Station, Ky  
 Anderson, W P..... Cincinnati, O  
 Watson, William,..... West Farms, N Y

## COTSWOLD SHEEP.

Albright, J..... Etna, N Y  
 Armstrong, E C..... Florida, N Y  
 Banks, Thad..... Hollidaysburg, Pa  
 Barbee, G L..... Georgetown, Ky  
 Bedford, E G..... Paris, Ky  
 Burroughs, H K..... Roxbury, N Y  
 Chase, L A..... New-York  
 Cochrane, M H..... Montreal, Can  
 Coffin, H T..... Poughkeepsie, N Y  
 Crozier, William, ..... Northport, N Y  
 Deuel, S T..... Little Rest, N Y  
 Hall, John,..... Catharine, N Y  
 Harris, Jos..... Rochester, N Y  
 Hartwell, S..... Washington, Ct  
 Hester, C E..... West Chester, Pa  
 Hoyle, George V..... Champlain, N Y  
 Jackson, George,.... Wilmington, Del  
 Johnson, W R..... Warwick, R I  
 Loomis, Burdett,.... Windsor Locks, Ct  
 Loomis, Byron,..... Suffield, Ct  
 McFerran, J C..... Louisville, Ky  
 Osborn, B L..... Oswego Village, N Y  
 Phelps, C C..... Vernon, N Y  
 Phillips, E T..... Plainfield, N J  
 Perry, W N..... Rushville, N Y  
 Rockwell, J M..... Butternuts, N Y  
 Sayre, Cooper,.... Oaks Corners, N Y  
 Snell, John, ..... Edmonton, Can  
 Stone, Fred. Wm..... Guelph, Can  
 Tabor, A..... Aurora, N Y  
 Tatum, G M..... Woodbury, N J  
 Underhill, A A..... Clinton Corners, N Y

## LEICESTER SHEEP.

Curtis, F D..... Charlton, N Y  
 Edgerton, Jas..... Barnesville, O  
 Hills, C..... Delaware, O  
 Hoyle, George V..... Champlain, N Y  
 Kirby, Joseph, ... Milton, Can  
 Redmond, William, ..... New-York  
 Snell, John, ..... Edmonton, Can  
 Stewart, Henry, ..... Stroudsburg, Pa  
 Wergart, F P..... Delaware, O  
 Winne, Jurian,..... Bethlehem, N Y  
 Walcott & Campbell, .... N Y Mills, N Y

## LINCOLN SHEEP.

Chapman, J R..... Oneida Lake, N Y  
 Chenery, W W..... Belmont, Mass



Cochrane, M H..... Montreal, Can  
Hallett, A J..... Waterville, Me  
Walcott & Campbell, .... N Y Mills, N Y

## MERINO SHEEP.

Baker & Harrigan, Comstock's Landing, NY  
Baldwin, Theo. E..... Litchfield, Ct  
Bottum, N..... Shaftsbury, Vt  
Chamberlain, Wm..... Red Hook, N Y  
Cole, Walter, ..... Batavia, N Y  
Hubbard, C H..... Springfield, Vt  
Pettibone, J S..... Manchester, Vt

## HAMPSHIRE-DOWN SHEEP.

Ashworth, J..... Ottawa, Can  
Morrell, Robert,..... Manhasset, N Y  
Newell, Dr. A D... New-Brunswick, N J

## SHROPSHIRE SHEEP.

Conger, A B..... Haverstraw, N Y

## SOUTH-DOWN SHEEP.

Alexander, A J..... Spring Station, Ky  
Brown, Geo. H., Washington Hollow, N Y  
Buffum, Thomas B..... Newport, R I  
Giles, John,..... Putnam, Ct  
Harison, T L..... Morley, N Y  
Hills, C..... Delaware, O  
Hornbrook, R S & Co., New-Harmony, Ind  
Jenkins, J. Stricker,..... Baltimore, Md  
Jones, T C..... Delaware, O  
Moore, Edwin,..... Port Kennedy, Pa  
Morris, Dr. J C... West Chester, Pa  
Pickrell, J H..... Harristown, Ill  
Plunkett, G T..... Hinsdale, Mass  
Reeder, E..... New-Hope, Pa  
Reynolds, I W H..... Frankfort, Ky  
Sharpless, Samuel J.... Philadelphia, Pa  
Sinclair, S..... New-York  
Stewart, H L... Middle Haddam, Ct  
Stone, Fred. Wm... Guelph, Can  
Taylor, W J C..... Holmdel, N J  
Underhill, A A.... Clinton Corners, N Y  
Wainwright, C S..... Rhinebeck, N Y  
Worth, Francis,..... Marshallton, Pa

## BERKSHIRE SWINE.

Abbott, J J C.... Montreal, Can  
Barbee, W H..... Shelbyville, Ky  
Barbee, G L..... Georgetown, Ky  
Bedford, E G..... Paris, Ky  
Bennett, W A..... Dover, Ky  
Brown, Dr. L E..... Eminence, Ky  
Cass, J F..... L'Original, Can  
Cochrane, M H .. Montreal, Can  
Coffin, C E..... Muirkirk Md  
Crozier, William, ... Northport, N Y  
Crutcher, T G..... Shelbyville, Ky  
Deuel, S T..... Little Rest, N Y  
Graff, H C..... Maysville, O  
Greene, John W..... Sayville, N Y  
Morris, Dr. J C..... West Chester, Pa  
McCully, Cyrus,..... Hubbard, O  
Pettee, W J..... Lakeville, Ct  
Pickrell, J H..... Harristown, Ill  
Riehl, E A..... Alton, Ill  
Snell, John, ..... Edmonton, Can  
Stone, F W..... Guelph, Can  
Ticknor, E..... St. Louis, Mo

## ESSEX SWINE.

Anderson, W P..... Cincinnati, O  
Plunkett, G T..... Hinsdale, Mass

## CHESHIRE SWINE.

Battles, A..... Girard, Pa  
Dickerman, John H..... Mt. Carmel, Ct  
Perry, W N..... Rushville, N Y  
Rockwell, J M..... Butternuts, N Y

## SUFFOLK SWINE.

Battles, A..... Girard, Pa  
Giles, John,..... Putnam, Ct  
Howard, A B..... Belchertown, Mass  
Hyde, Alex..... Lee, Mass  
McCully, Cyrus,..... Hubbard, O  
Nason, H..... Montclair, N J  
Ticknor, E..... St. Louis, Mo

## YORKSHIRE SWINE.

Chenery, W W..... Belmont, Mass  
Landon, Stephen,..... Eden, N Y

## CHESTER COUNTY SWINE.

Battles, A..... Girard, Pa  
Beal, N T..... Rogersville, Tenn  
Bidwell, B J..... Tecumseh, Mich  
Bruce, B F..... Lenox, N Y  
Coffin, C E..... Muirkirk, Md  
Cook, Henry,..... Alexandria, Va  
Cooper, C E..... Toughkenamon, Pa  
Darlington, R S..... West Chester, Pa  
Early, J A..... Youngstown, O  
Edgerton, James,..... Barnesville, O  
Fouk, S A..... Urbana, O  
Gould, Thos..... Aurora, N Y  
Hickman, G B..... West Chester, Pa  
Horton, E W..... Muscatine, Iowa  
Irwin, J W & M..... Penningtonville, Pa  
Jamison, And..... Alexandria, Va  
Knight, J H..... Monroe, N Y  
Lewis, P G..... Monroe, N Y  
Mackie, J M..... Great Barrington, Mass  
Maitland, R. L., Jr.,..... Red Bank, N J  
McCully, Cyrus,..... Hubbard, O  
Perry, A..... Monroe, N Y  
Perry, W N..... Rushville, N Y  
Roberts, J C..... West Chester, Pa  
Russell, S B..... Nottingham, Pa  
Silver, L B..... Salem, O  
Smith, Isaac C..... Milford, Ct  
Sinclair, S..... New-York  
Thompson, G W..... New-Brunswick, N J  
Tilton, H W..... Walpole, Mass  
Van Winkle, J. Jr.,..... Rockaway, N J  
Whitehead, M..... Middlebush, N J  
Wood, Thomas,..... Doe Run, Pa  
Worth, Francis,..... Marshallton, Pa  
Young, James, Jr., & Co., Marshallton, Pa

## POULTRY FANCIERS.

Acton, C B..... Salem, N J  
Allen, A B..... Tom's River, N J  
Allen, J..... Conneaut, O  
Anderson, H S..... Geneva, N Y  
Avery, R A..... Gloversville, N Y  
Bailey, Harry L..... Washington, D C  
Ball, H S..... Shrewsbury, Mass  
Barry, T F..... Rochester, N Y

Bassett, G W. . . . . Barre, Vt  
 Bateman, H B. . . . . Ripon, Wis  
 Betts, C H. . . . . Baltimore, Md  
 Bicknell, J Y & Co. . . . . Westmoreland, N Y  
 Billings, E K. . . . . Framingham, Mass  
 Bissell, E N. . . . . Richville, Vt  
 Blanchard, Chas. . . . . Newton, N J  
 Bradley, G W. . . . . Hamden, Ct  
 Burgess, Edward, . . . . . Poughkeepsie, N Y  
 Bush, W C & W M. . . . . Auburndale, Mass  
 Bush, A P. . . . . Milton, Mass  
 Butts, George, . . . . . Manlius, N Y  
 Cameron, R W. . . . . New-York  
 Carpenter, F & W. . . . . Rye, N Y  
 Cary, Willard, . . . . . Milford, N H  
 Chapman, J. . . . . Newport, Ky  
 Champney, G F. . . . . Taunton, Mass  
 Clark, John L. . . . . Waterloo, N Y  
 Coffin, C E. . . . . Muirkirk, Md  
 Cooper, T C. . . . . Limerick, Ireland  
 Cox, J B. . . . . Zanesville, O  
 Crozier, Wm. . . . . Northport, N Y  
 Daffus, William, . . . . . Halifax, N S  
 Darlington, R S. . . . . West Chester, Pa  
 Deuel, S T. . . . . Little Rest, N Y  
 Dewey, T H. . . . . Pomfret Landing, Conn  
 Dewey, G B. . . . . Hartford, Conn  
 Dibble, E B. . . . . New-Haven, Ct  
 Dounce, W J. . . . . Elmira, N Y  
 Dudley Bros. . . . . Augusta, N Y  
 Dunbar, E B. . . . . Bristol, Ct  
 Early, J A. . . . . Youngstown, O  
 Elben, C B. . . . . Pittsburgh, Pa  
 Elliott & Burgess, . . . . . Pittsburgh, Pa  
 Ellis, Robert, . . . . . Schenectady, N Y  
 Estabrook, G W. . . . . Grafton, Mass  
 Estes, J J. . . . . East Abington, Mass  
 Ferry, S. . . . . Tivoli, N Y  
 Frazier, E R. . . . . Plattsburgh, N Y  
 Fry, J H & Co. . . . . New Brighton, N Y  
 Gates, G H. . . . . Schoharie, N Y  
 Gibson, R. . . . . N Y Mills, N Y  
 Giles, John, . . . . . Putnam, Ct  
 Green, Richard, . . . . . Montclair, N J  
 Goodell, D H. . . . . Antrim, N H  
 Gould, Thomas, . . . . . Aurora, N Y  
 Hadwen, O B. . . . . Worcester, Mass  
 Haines, J C. . . . . Clarksboro, N J  
 Hall, John H. . . . . Catharine, N Y  
 Hamilton & Kirkham, . . . . . New-York  
 Hand, T J. . . . . Sing Sing, N Y  
 Hanks, W. . . . . Middle Granville, N Y  
 Harwood, H J. . . . . Littleton, Mass  
 Hayward, E R. . . . . Easton, Mass  
 Hicks, Benj. . . . . Roslyn, N Y  
 Hills, W R. . . . . Albany, N Y  
 Hills, Henry N. . . . . Delaware, O  
 Hills, J W. . . . . Delaware, O  
 Herstine, D W. . . . . Philadelphia, Pa  
 Hollingworth & Bro. . . . . Utica, N Y  
 Homer, G W. . . . . Framingham, Mass  
 Horton, E W. . . . . Muscatine, Iowa  
 Howard, A McL., . . . . . Toronto, Can  
 Howlett, E P. . . . . Syracuse, N Y  
 Hull, W H. . . . . Wells, Vt  
 Hunt, W M. . . . . Waterloo, N Y  
 Ives, John S. . . . . Salem, Mass

King, Henry, . . . . . Galesburg, Mich  
 King, T D. . . . . Orsikany Falls, N Y  
 Lapham, M D. . . . . Paris, N Y  
 Large, S P. . . . . West Elizabeth, Pa  
 Long, J C Jr. . . . . Ravenna, O  
 Loring, C Carroll . . . . . Boston, Mass  
 Maitland, Robert L Jr. . . . . Red Bank, N J  
 McCully, Cyrus, . . . . . Hubbard, O  
 McIntosh, S J. . . . . Sterling, Mass  
 Miles, F W. . . . . Plainfield, N J  
 Merriam, C H. . . . . Locust Grove, N Y  
 Morrell, Robt . . . . . Manhasset, N Y  
 Morris, Paschall, . . . . . Philadelphia, Pa  
 Murdoch, G B. . . . . Meriden, Ct  
 Nettleton, C P. . . . . Birmingham, Ct  
 Nicholls, Burr H. . . . . Lockport, N Y  
 Parks, C C & R H. . . . . Waukegan, Ill  
 Paulding, D C. . . . . Tarrytown, N Y  
 Perry, W N. . . . . Rushville, N Y  
 Phillips, E T. . . . . Plainfield, N J  
 Pitman, Mark, . . . . . Salem, Mass  
 Roberts, J A. . . . . Paoli, Pa  
 Rockwell, J M. . . . . Butternuts, N Y  
 Rodman, Rev. W. . . . . West Farms, N Y  
 Rowe, John M. . . . . Norristown, Pa  
 Scudder, M S. . . . . Grantville, Mass  
 Schuyler, P. . . . . West Troy, N Y  
 Sharpless, Saml J. . . . . Philadelphia, Pa  
 Shelton, J D. . . . . Jamaica, N Y  
 Simpson, W Jr. . . . . West Farms, N Y  
 Smith, G Morgan. . . . . South Hadley, Mass  
 Snow, H H. . . . . New-Haven, Ct  
 Spaulding, L A. . . . . Lockport, N Y  
 Stephens, Sheldon, . . . . . Montreal, Can  
 Stickney, E. . . . . Burton, O  
 Strout, Charles, . . . . . Framingham, Mass  
 Studley, E G. . . . . Claverack, N Y  
 Stuyvesant, J R. . . . . Poughkeepsie, N Y  
 Tatum, G M. . . . . Woodbury, N J  
 Taylor, E J. . . . . Waterloo, N Y  
 Thorne, Edwin, . . . . . Washington, N Y  
 Townsend, C H. . . . . Utica, N Y  
 Treadwell, C W. . . . . Exeter, N H  
 Upham, D A. . . . . Wilsonville, Ct  
 Van Keuren, C. . . . . Rondout, N Y  
 Walcott, B D. . . . . N Y Mills, N Y  
 Warner, G H. . . . . N Y Mills, N Y  
 Wheaton, C C. . . . . Orange, Mass  
 Whitney, E H. . . . . Cambridgeport, Mass  
 Williams, P. . . . . Taunton, Mass  
 Willard, F H. . . . . Little Falls, N Y  
 Welles, J C. . . . . Athens, Pa  
 Wentworth, John, . . . . . Chicago, Ill  
 Wolcott, R P. . . . . Holland Patent, N Y  
 Wood, Thomas. . . . . Doe Run, Pa  
 Woodward, H. . . . . Worcester, Mass  
 Worth, Francis, . . . . . Marshallton, Pa

AMERICAN DEER.

Maitland, Robt L. . . . . New-York

BEEES.

Baldwin Bros . . . . . Sandusky, N Y  
 Bradley, A. . . . . Lee, Mass  
 Hazen, Jasper, . . . . . Albany, N Y  
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 Quinby, M. . . . . St. Johnsville, N Y  
 Stratton, W M. . . . . West Troy, N Y

## ANGORA GOATS.

Chenery, W W . . . . . Belmont, Mass  
 Dinsmore, W B . . . . . Staatsburgh, N Y  
 Goe, J S . . . . . Brownsville, Pa  
 Peters, Richard, . . . . . Atlanta, Ga

## FISH AND SPAWN.

Clift, W . . . . . Mystic Bridge, Ct

## FERRETS.

Osgoodby, J H . . . . . Pittsford, N Y

## DOGS.

Betts, C H . . . . . Baltimore, Md  
 Bradley, G W . . . . . Hamden, Ct  
 Butler, W B . . . . . Toronto, Can  
 Early, J A . . . . . Youngstown, O  
 Estes, J J . . . . . East Abingdon, Mass  
 Hail, John, . . . . . Catharine, N Y  
 Hallock, S P . . . . . Oriskany, N Y  
 Ives, J S . . . . . Salem, Mass  
 Rice, Geo. E . . . . . Boston, Mass  
 Stephens, S Sheldon, . . . . . Montreal, Can

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*(for P. & E. Transon, Orleans, France.)*

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 Allen, John M. . . . . Hightstown, N J  
 Andrews, C. . . . . Marengo, Ill  
 Baker, George, . . . . . Toledo, O  
 Bailey, J W . . . . . Plattsburg, N Y  
 Battles, A . . . . . Girard, Pa  
 Berst & Bro . . . . . Erie, Pa  
 Buist, R. . . . . Darby Road, Philadelphia, Pa  
 Caldwell, Joseph, . . . . . Troy, N Y  
 Chapman, J F & Co. . . . . Fayetteville, N Y  
 Cooney, P H . . . . . Erie, Pa  
 Duffell, S . . . . . Yardville, N J  
 Eilwanger & Barry, . . . . . Rochester, N Y  
 Evans, E J & Co . . . . . York, Pa  
 Ferris, W L . . . . . Throgg's Neck, N Y  
 Frost & Co . . . . . Rochester, N Y  
 Frost, E C . . . . . Watkins, N Y  
 Foster, Suel, . . . . . Muscatine, Iowa  
 Graves, Selover, Willard & Co., Geneva, N Y  
 Goodale, S L . . . . . Saco, Me  
 Hadwen, O B . . . . . Worcester, Mass  
 Hance & Son, A . . . . . Red Bank, N J  
 Hanford, R G . . . . . Columbus, O  
 Harrington, E W & Co. . . . . Geneva, N Y  
 Heikes, W F . . . . . Dayton, O  
 Herendeen & Co. . . . . Geneva, N Y  
 Hooker & Bro., H E. . . . . Rochester, N Y  
 Hoopes, Bro. & Thomas, West Chester, Pa  
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 How, H K . . . . . New-Brunswick, N J  
 Hoyt & Sons, S. . . . . New-Canaan, Ct  
 Hubbard, T S & Co. . . . . Fredonia, N Y  
 Kendig R P . . . . . Waterloo, N Y  
 Lacon Nursery Co. . . . . Lacon, Ill  
 Lenk & Co. . . . . Toledo, O  
 Lewis, M H . . . . . Sandusky, O  
 Little, W S . . . . . Rochester, N Y  
 Love, J W . . . . . Geneva, N Y  
 Manning, J W . . . . . Reading, Mass  
 Marshall, S B . . . . . Cleveland, O  
 Maxwell & Bros., T C. . . . . Geneva, N Y  
 McCullough, Drake & Co. . . . . Sharpsburg, O  
 Meehan, Thomas, . . . . . Germantown, Pa  
 Merrell & Coleman, . . . . . Geneva, N Y  
 Moody & Sons, E. . . . . Lockport, N Y

Moon, Mahlon, . . . . . Morrisville, Pa  
 Murdoch, J R & A. . . . . Pittsburg, Pa  
 Parry, William, . . . . . Cinnaminson, N J  
 Parsons & Co. . . . . Flushing, N Y  
 Pearse & Thompson, . . . . . Bloomington, Ill  
 Pearson, W L . . . . . Schenectady, N Y  
 Perry, F L . . . . . Canandaigua, N Y  
 Peters, C P . . . . . Concordville, Pa  
 Peters, Randolph, . . . . . Wilmington, Del  
 Phoenix, F K . . . . . Bloomington, Ill  
 Pratt & Co. . . . . Geneva, N Y  
 Pullen, T J . . . . . Hightstown, N J  
 Rakestraw & Pyle . . . . . Willowdale, Pa  
 Reagles & Son, C. . . . . Schenectady, N Y  
 Riehl, E A . . . . . Alton, Ill  
 Roberts, Josiah A. . . . . Paoli, Pa  
 Root, James A. . . . . Skaneateles, N Y  
 Saul, John, . . . . . Washington, D C  
 Sloan, John, . . . . . Albany, N Y  
 Smith, Clark & Powell. . . . . Syracuse, N Y  
 Southwick & Co., T T. . . . . Dansville, N Y  
 Storrs, Harrison & Co. . . . . Painesville, O  
 Studley, E G . . . . . Claverack, N Y  
 Swasey, H A & Co. . . . . Canton, Miss  
 Sylvester, E. Ware . . . . . Lyons, N Y  
 Teas, E Y . . . . . Richmond, Ind  
 Van Dusen, C L . . . . . Macedon, N Y  
 Wampler, John, . . . . . Trotwood, O  
 Watson, B M . . . . . Plymouth, Mass  
 Wickersham, Josiah, . . . . . Bendersville, Pa  
 Will & Clark, . . . . . Fayetteville, N Y  
 Willson, M D . . . . . Rochester, N Y  
 Wilson, G W & Co. . . . . Bendersville, Pa  
 Wood & Hall, . . . . . Geneva, N Y

## SMALL FRUITS AND GRAPES.

Allen, C M . . . . . Beverly, N J  
 Andrews, T C . . . . . Moorestown, N J  
 Babcock & Co., I H . . . . . Lockport, N Y  
 Bailey, J W . . . . . Plattsburg, N Y  
 Barnett, W N . . . . . West Haven, Ct  
 Bassett, Lyman, . . . . . North Haven, Ct  
 Bateham, M B . . . . . Painesville, O  
 Boyce, W C . . . . . Lockport, N Y  
 Briggs, I W . . . . . West Macedon, N Y  
 Brown, D H . . . . . New-Brunswick, N J  
 Burgess, Edw., . . . . . Poughkeepsie, N Y  
 Bush & Son, Isidor . . . . . Bushburg, Mo  
 Cadwallader, M. . . . . Fallsington, Pa  
 Campbell, G W . . . . . Delaware, O  
 Carpenter, W S . . . . . Rye, N Y  
 Chinnick, W J . . . . . Trenton, N J  
 Collins, Charles, . . . . . Moorestown, N J

Collins, John S..... Moorestown, N J  
 Cone, J W..... Vineland, N J  
 Cooney, P H..... Erie, Pa  
 Conover & Son,..... Freehold, N J  
 Craine, J..... East Lockport, N Y  
 Davis, S C..... Medina, N Y  
 Dingwall, John,..... Albany, N Y  
 Dodge, U E..... Fredonia, N Y  
 Donaldson, J A... St Joseph, Mich  
 Duffell, S..... Yardville, N J  
 Ellwanger & Barry,..... Rochester, N Y  
 Griffith & Griffith,..... North East, Pa  
 Hall, Isaac,..... Frazer, Pa  
 Harris, T L..... Brocton, N Y  
 Hasbrouck & Bushnell,.... Peekskill, N Y  
 Hathaway, B... Little Prairie Ronde, Mich  
 Haynes, J H.... Delphi, Ind  
 Hendricks, H..... Kingston, N Y  
 Herstine, D W. . . Philadelphia, Pa  
 Hoag & Co., C L..... Lockport, N Y  
 Hubbard & Co., T S..... Fredonia, N Y  
 Johnson, H. C..... Berlin Heights, O  
 Kinsey & Gaines,..... Dayton, O  
 Knox, J... . . . . Pittsburg, Pa  
 Lambert, George H., New-Brunswick, N J  
 Leeds, N..... Cinnaminson, N J  
 Lindley, N H..... Bridgeport, Ct  
 Mallory & Downs..... South Norwalk, Ct  
 Martin, James F..... Mt Washington, O  
 Massey, W F..... Chestertown, Md  
 McCullough & Sons, J M... Cincinnati, O  
 McLaurry, D.... New Brunswick, N J  
 Merceron, F F... Cattawissa, Pa  
 Merriman, A..... Granville, O  
 Moon, Mahlon..... Morrisville, Pa  
 Moore, A J..... Berlin Heights, O  
 Oneida Community,.... Oneida, N Y  
 Palmer & Risley, *Hops*,... Waterville, N Y  
 Parry, William..... Cinnaminson, N J  
 Parsons & Co..... Flushing, N Y  
 Patterson, J S..... Berlin Heights, O  
 Peck T R..... Waterloo, N Y  
 Perry, F L..... Canandaigua, N Y  
 Potter & Co., E J..... Knowlesville, N Y  
 Puilen, J. Madison..... Hightstown, N J  
 Purdy, A. M..... Palmyra, N Y  
 Purdy & Hance,..... South Bend, Ind  
 Reisig & Hexamer..... New-Castle, N Y  
 Reynolds, P C..... Rochester, N Y  
 Ringneberg, J..... Lockport, N Y  
 Ritz, Louis,..... Plainville, O  
 Robinson, E D..... Howlett Hill, N Y  
 Salter, H H..... Lima, N Y  
 Shaw, C W..... Carver, Mass  
 Shuler, Mrs J D... Lockport, N Y  
 Smith, J T B..... Kingston, N Y  
 Strong, W C..... Brighton, Mass  
 Sutvan, Stokes..... Haddonfield, N J  
 Sylvester, E W..... Lyons, N Y  
 Tatum, J C... . . . . Woodbury, N J  
 Thompson, G W... New-Brunswick, N J  
 Tilson, O J..... Highland, N Y  
 Todd, L U..... Vermillion, O  
 Travis & Fields,..... Dobb's Ferry, N Y  
 Tucker, F D.... Ithaca, N Y  
 Van Dusen, C L..... Macedon, N Y  
 Walton, Silas,..... Moorestown, N J

Williams, J G..... Moorestown, N J  
 Wilson, M N..... Macedon, N Y

## SEEDSMEN, FLORISTS, &amp;c.

Acker, H E..... Woodbridge, N J  
 Allen, R H & Co..... New-York  
 Allen, C L & Co..... Brooklyn, N Y  
 Ashley, A D..... Milton Depot, Vt  
 Babcock, Mrs. L D..... Clarkson, N Y  
 Barler & Condon,..... Upper Alton, Ill  
 Barnum & Bro..... St. Louis, Mo  
 Barry, W C..... Rochester, N Y  
 Bissett, James, *Roses*,... Philadelphia, Pa  
 Bliss, B K., & Sons,..... New-York  
 Breck, Jos., & Sons,..... Boston, Mass  
 Buist, R... Darby Road, Philadelphia, Pa  
 Buist, R., Jr.,..... Philadelphia, Pa  
 Burras, O..... North Fairfield, O  
 Collins, Alderson & Co.. Philadelphia, Pa  
 Curtis & Cobb..... Boston, Mass  
 DeGross, Nelson & Co.. Fort Wayne, Ind  
 Deitz, G W..... Chambersburg, Pa  
 Dingee & Conard,..... West Grove, Pa  
 Douw, V P..... Albany, N Y  
 Dreer, Henry A..... Philadelphia, Pa  
 Fancher, F B..... Lansingburgh, N Y  
 Fanning, S B..... Jamesport, N Y  
 Ferre, Batchelder & Co.. Springfield, Mass  
 Foote, J A... . . . . Terre Haute, Ind  
 Gregory, J J H... . . . . Marblehead, Mass  
 Hacker, Wetherill & Co.. Philadelphia, Pa  
 Hawley, R D..... Hartford, Ct  
 Henderson & Fleming,..... New-York  
 Herendeen & Co..... Geneva, N Y  
 Hovey & Co..... Boston, Mass  
 Ives, John S..... Salem, Mass  
 Knox, W W..... Pittsburg, Pa  
 Landreth, David, & Son, Philadelphia, Pa  
 Massey, W F..... Chestertown, Md  
 McCullough, J M & Sons, . Cincinnati, O  
 Meserole, P S..... Chicago, Ill  
 Murdoch, J R & A..... Pittsburg, Pa  
 Oim Brothers,..... Springfield, Mass  
 Philipps, Henry..... Toledo, O  
 Peck, H S & Co..... Melrose, Mass  
 Ramsay, Wilfred,..... Albany, N Y  
 Reeser, C A..... Pittsfield, Mass  
 Reeves, E A..... New-York  
 Rogers, C B..... Philadelphia, Pa  
 Rumsey, H M..... Salem, N J  
 Sanders, Edgar,.... Chicago, Ill  
 Stoms & Sons, Wm,..... Cincinnati, O  
 Strong, W C..... Brighton, Mass  
 Such, George,..... South Amboy, N J  
 Scott, L D & Co..... Huron, O  
 Schwill, A & Co..... Cincinnati, O  
 Stevens, G M..... Danbury, Ct  
 Thorburn, J M & Co..... New-York  
 Teas, E Y..... Richmond, Ind  
 Vick, James,..... Rochester, N Y  
 Vanderbilt, John, & Bros..... New-York  
 Wardwell & Co... . . . . West Dresden, N Y  
 Waring, Jr., G E..... Newport, R I  
 Washburn & Co..... Boston, Mass  
 Watson, B M..... Plymouth, Mass  
 Wells, S M & D... . . . . Wethersfield, Ct  
 Wood & Hall,..... Geneva, N Y

## CRANBERRIES.

Makepeace, A D ..... Hyannis, Mass  
Trowbridge, F... .. Milford, Ct

## SEED GRAINS.

Battles, A ..... Girard, Pa  
Buttles, A B..... Columbus, O  
Bryan, E T ..... Marshall, Mich  
Dickerman, J H ..... Mt. Carmel, Ct  
Fanning, S B..... Jamesport, N Y  
Hazard, J F..... Mendon Centre, N Y  
Jenison, D..... Lock Berlin, N Y  
Kelsey, H C..... Newton, N J  
Kennedy, S..... Evansville, Ind  
Large, S P..... West Elizabeth, Pa  
Masker, Aaron..... Perth Amboy, N J  
Pearsall, Wm ..... Moorestown, N J  
Phelps, C C..... Vernon, N Y  
Small & Fisher..... Woodstock, N B  
Talcott, Jona,... .. Rome, N Y  
Van Dusen, C L..... Macedon, N Y  
Wayne, W G..... Seneca Falls, N Y

## SEED POTATOES.

Bates, W E... .. Colchester, Vt  
Beers, S N..... Sandy Hook, Ct  
Berst & Bro.... .. Erie, Pa  
Bliss & Sons, B K..... New-York  
Briggs, D B..... West Winfield, N Y  
Briggs, I W..... West Macedon, N Y  
Burgess, Edw..... Poughkeepsie, N Y  
Burras, O..... North Fairfield, O  
Clark, John L..... Waterloo, N Y  
Clark, A C..... Tyre, N Y  
Cummins, D..... Conneaut, O  
Dimon, Chas..... New-York  
Eaton, L P..... Dublin, N H  
Edgerton, James..... Barnesville, O

Ellwanger & Barry, ..... Rochester, N Y  
Fanning, S B..... Jamesport, N Y  
Fassett, F E..... Ashtabula, O  
Fowler, J W ..... Peekskill, N Y  
Goodale, H S..... South Egremont, Mass  
Gibson, J..... N Y Mills, N Y  
Gray, S..... Norwalk, O  
Gregory, J J H..... Marblehead, Mass  
Griscom, W W ..... Woodbury, N J  
Hicks & Sons, Isaac,.. Old Westbury, N Y  
Ives, J S..... Salem, Mass  
Jackson, G E & Co ..... Cincinnati, O  
Johnson, S B..... Alton, Ill  
Lapham, M D..... Paris, N Y  
Murdock, J R & A..... Pittsburgh, Pa  
Merwin, W M..... Milford, Ct  
Peters, C P..... Concordville, Pa  
Potter, R..... Oswego Village, N Y  
Potter, E J & Co..... Knowlesville, N Y  
Pringle Bros..... Charlotte, Vt  
Pullen, J M..... Hightstown, N J  
Perry, W N..... Rushville, N Y  
Qua, Frank..... North Granville, N Y  
Reisig & Hexamer,... New-Castle, N Y  
Reynolds, P..... Argyle, N Y  
Sampson, Jas... .. Miles Grove, Pa  
Talcott, J ..... Rome, N Y  
Thompson, G W ... New-Brunswick, N J  
Weld, W H ..... Lockport, N Y

## SWEET POTATOES.

Allen, J..... Conneaut, O  
Barrows, C H ..... Willimantic, Ct  
Chadwick, W W..... Mt. Healthy, O  
Cummins, D..... Conneaut, O  
Gray, S..... Norwalk, O  
Murray, M M ..... Foster's Crossings, O  
Stoms, W., & Sons, ..... Cincinnati, O  
Whitall, Clement,... .. Woodbury, N J

## IMPLEMENTS, MACHINES, FERTILIZERS, &amp;C.

## AGRICULTURAL WAREHOUSES.

Allen & Co., R H.... Box 376, New-York  
Ames Plow Company,..... Boston, Mass  
Barrett, W E., & Co..... Providence, R I  
Bartholomew, C..... Etna, N Y  
Beardslee, H W..... Syracuse, N Y  
Blymyer, Norton & Co.... Cincinnati, O  
Blymyer, Day & Co... .. Mansfield, O  
Boyer, W L., & Co..... Philadelphia, Pa  
Brearley, A L., & Co..... Trenton, N J  
Decatur, J R., & Co ..... New-York  
DeGross, Nelson & Co.. Fort Wayne, Ind  
Dow, V P..... Albany, N Y  
Gill, J L., & Son,..... Columbus, O  
Griffing & Co ..... New-York  
Hawley, R D..... Hartford, Ct  
Holbrook & Co ..... Boston, Mass  
Meserole, P S ..... Chicago, Ill  
Nash, Duane H., Agent,..... New-York  
Plant Bros., Pratt & Co.... St. Louis, Mo  
Peekskill Plow Works,..... Peekskill, N Y  
Reeves, E H., & Co..... New-York  
Remington Ag. Works,..... Ilion, N Y  
Shaw & Wells, ..... Buffalo, N Y  
Titus & Bostwick ..... Ithaca, N Y

Welch, F G., & Co..... Chicago, Ill  
Younglove, Massey & Co.... Cleveland, O  
HORSE-POWERS, THRESHERS AND OTHER  
MACHINES.

Albany Agricultural Works,.. Albany, N Y  
Dow & Fowler,..... Fowlerville, N Y  
Geiser Threshing Machine Co., Racine, Wis  
Gray, A W ..... Middletown, Vt  
Harder, M... .. Cobleskill, N Y  
Shaw & Wells, ... .. Buffalo, N Y  
Westinghouse, G & Co., Schenectady, N Y  
Wheeler, Melick & Co..... Albany, N Y

## MOWERS AND REAPERS.

Adriance, Platt & Co..... New-York  
Allen, R H & Co..... New-York  
Ball, E & Co..... Canton, O  
Bradley, C C & Son,..... Syracuse, N Y  
Clipper Mower and Reaper Co., New-York  
Dodge & Stevenson Mft'g Co., Auburn, N Y  
Nash, Duane H., Agent,..... New-York  
Osborne, D M & Co ..... Auburn, N Y  
Warrior Mower Co..... Little Falls, N Y  
Wilber, Stevens & Co ... Po'keepsie, N Y  
Wood, Walter A..... Hoosick Falls, N Y  
Warder, Mitchell & Co..... Springfield, O

## STEAM ENGINES FOR FARMS.

Clute Brothers, . . . . . Schenectady, N Y  
 Wood, Taber & Morse, . . . . . Eaton, N Y  
 Wood & Mann Engine Co. . . . . Utica, N Y

## DAIRY APPARATUS.

Cooper, H & E F. . . . . Watertown, N Y  
 DeCordova, G., *Annatto*, . . . . . New-York  
 Holmes, A., *Milk Cooler*, . . . . . Cortland, N Y  
 Millar & Son, C. . . . . Utica, N Y  
 O'Neil, O., & Co. . . . . Utica, N Y  
 Ralph, W., & Co. . . . . Utica, N Y  
 Ward, Southerland & Co., *Annatto*,  
 New-York

## TILE AND TILE MACHINES.

Bender, W M . . . . . Albany, N Y  
 Boynton, C. W., & Co. . . . . Woodbridge, N J  
 Jackson, George, . . . . . Albany, N Y  
 Lodge, N . . . . . Albany, N Y

## OTHER SPECIALTIES.

Allen, S L., *Seed Planter*, Cinnaminson, N J  
 Barnes, W., *Slicer and Corer*, Bristol, Ct  
 Bartholomew, C., *Ditching Plow*, Etna, N Y  
 Bowne & Schanck, *Potato Digger*,  
 Freehold, N J  
 Buell, J. S., *Cider Mill*, . . . . . Buffalo, N Y  
 Buckingham, W. L., *Drill*, Baltimore, Md  
 Butterworth, R., *Cider Mill*, Trenton, N J  
 Church, C. A., *Stump Puller*,  
 New-Berlin, N Y  
 Collins & Co., *Steel Plows*, . . . . . New-York  
 Conover & Son, *Potato Digger*,  
 Freehold, N J  
 Cowing & Co., *Pumps, &c.*, Seneca Falls, N Y  
 Dederick & Co., *Hay Press*, Albany, N Y  
 Dismukes, Paul, *Clover Seed Gatherer*,  
 Gailatin, Tenn  
 Fairbanks & Co., *Scales*, . . . . . New-York  
 Fitch & Co., *Hay Elevator*, Lithgow, N Y  
 Fords & Howe, *Cultivator*, Oneonta, N Y  
 Fulton Manufacturing Co., *Feed Cutter*,  
 Fulton, N Y  
 Goodell, D. H., *Sower*, . . . . . Antrim, N H  
 Hickok, W. O., *Cider Mill*, Harrisburg, Pa  
 Henry, J. T., *Sheep Shears*, Hamden, Ct  
 Herring, S. C., *Hay Tedder*, . . . . . New-York  
 Jones, E. F., *Hay Scales*, Binghamton, N Y  
 Landers, Frary & Clark, *Lawn Mower*,  
 New-York  
 Mayne, J., *Door Rollers*, Butternuts, N Y  
 Osborne, Foster & Co., *Seed Sower*,  
 Palmyra, N Y  
 Paddock, Dean & Co., *Bone Mill*,  
 St. Johnsbury, Vt  
 Paris Furnace Co., *Hay Elevator*,  
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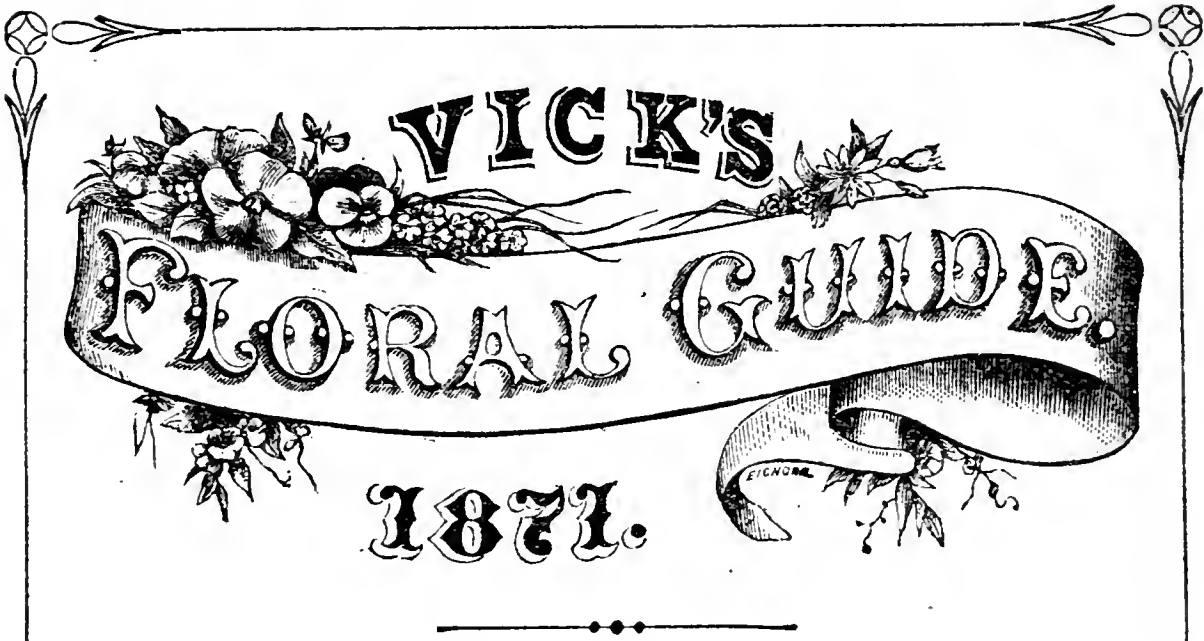
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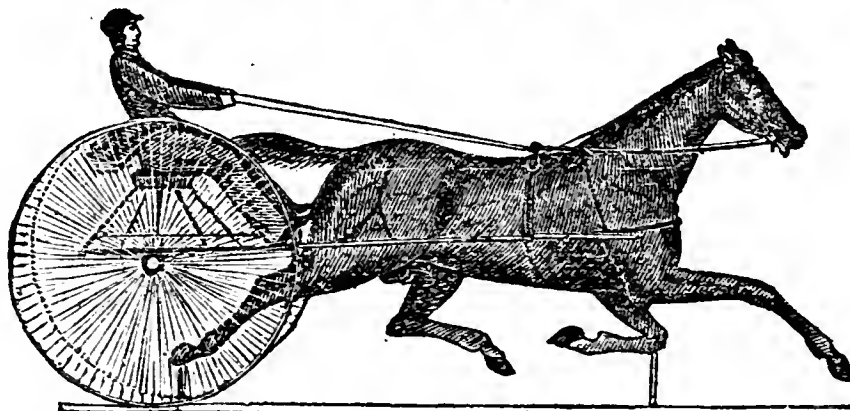
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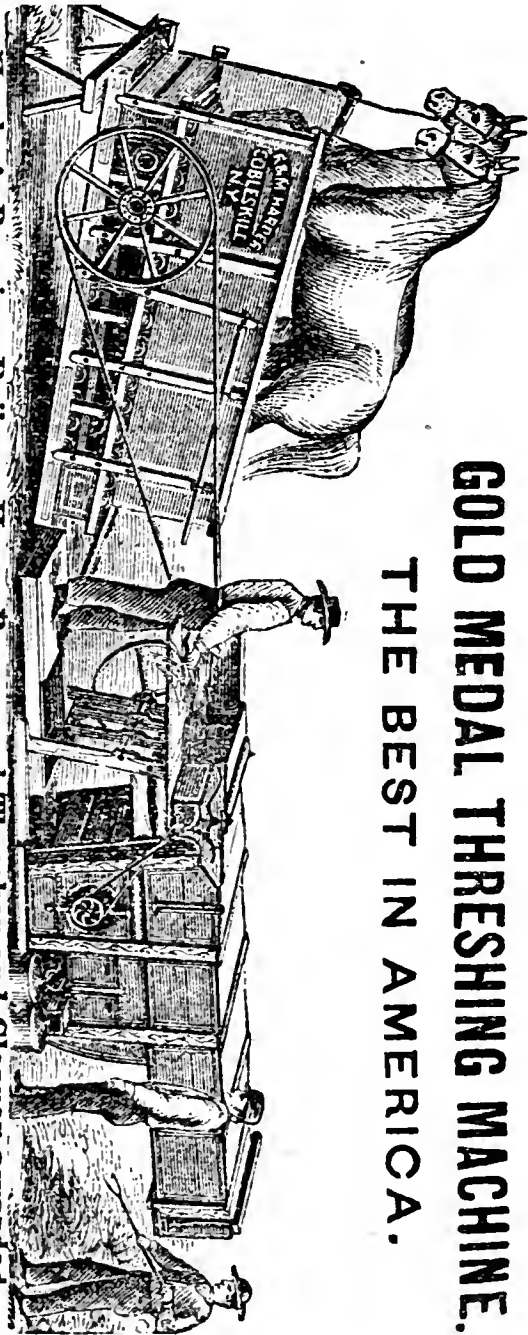
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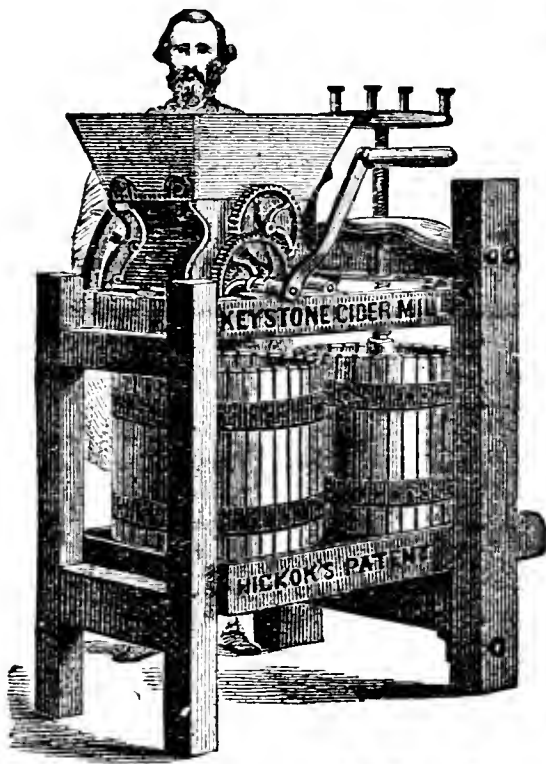
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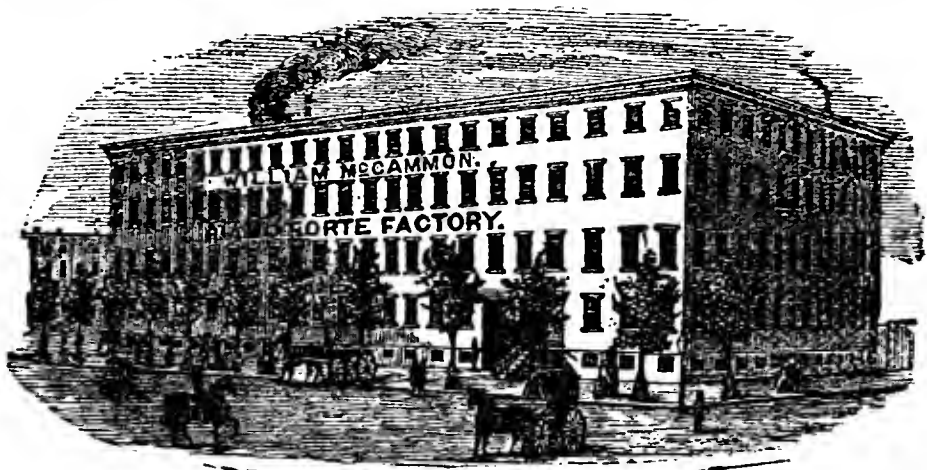
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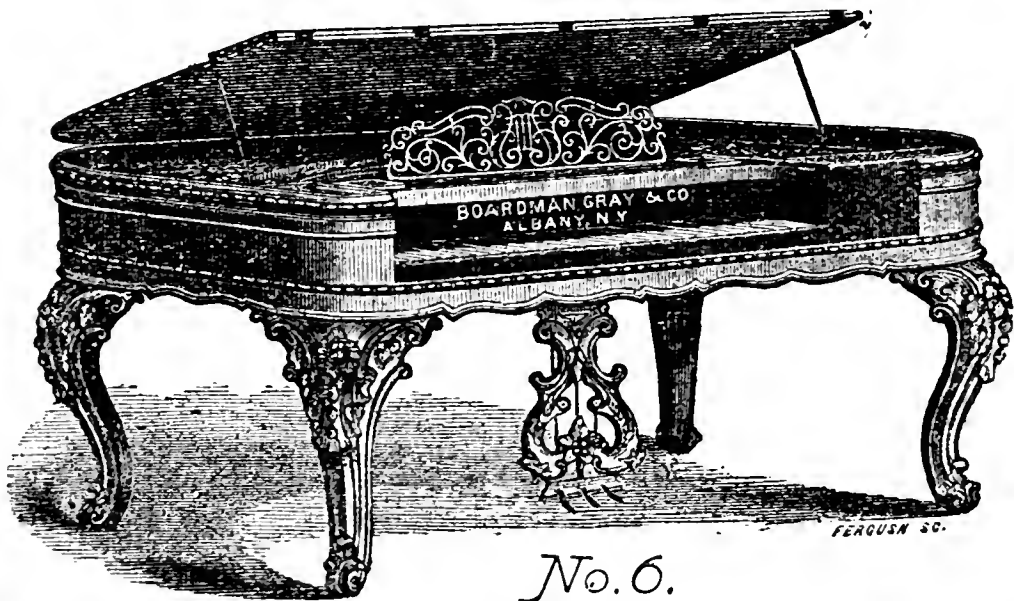
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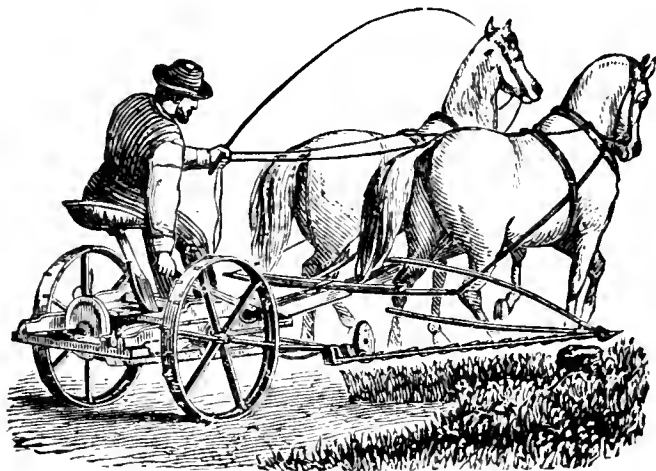
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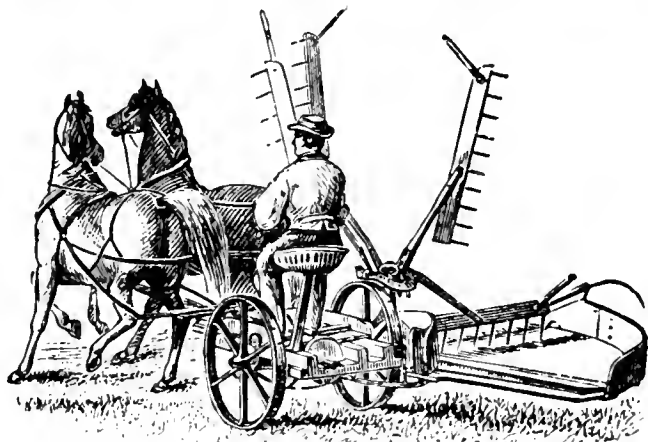
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