THE ILLUSTRATED ANNUAL REGISTER OF RURAL AFFAIRS FOR 1866.

130 ENGRAVINGS.

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NEW-YORK:
ORANGE JUDD & CO.

1866.

Number Twelve—Price, 30 Cents.

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THE

ILLUSTRATED ANNUAL

REGISTER OF RURAL AFFAIRS

AND

CULTIVATOR ALMANAC,

FOR THE YEAR 1866,

CONTAINING PRACTICAL

SUGGESTIONS FOR THE FARMER AND HORTICULTURIST

EMBELLISHED WITH ABOUT

One Hundred and Thirty Beautiful Engravings.

By J. J. THOMAS,

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

ALBANY, N. Y.: LUTHER TUCKER & SON.

NEW-YORK CITY: ORANGE JUDD & CO.

1866.

Publishers' Advertisement.

In presenting the Twelfth Number of the ILLUSTRATED ANNUAL REGISTER OF RURAL AFFAIRS, the Publishers may appropriately acknowledge their indebtedness to the Author, by whose experienced pen and tasteful sketches the interest and value of the series have been so well sustained. In the following pages, a Monthly Calendar is given for the Kitchen Garden, Flower Garden and Green-House, in continuation of those for the labors of the Farm and Orchard in the Numbers for 1864 and 1865. Other leading articles are devoted to the preservation and culture of our Woodlands, to the Breeding and Fattening of Mutton Sheep, and to a large variety of Horticultural subjects. The shorter papers embrace many concise and useful suggestions in matters of Farming and Rural Economy at large—the whole accompanied by the usual number of original and attractive Engravings.

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Farm Buildings.—Barns, Carriage Houses, Stables, the Piggery, Smoke-House, Poultry House—Cisterns, Erecting Lightning Rods, &c.

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The Poultry Yard.—A Complete Chapter, by C. N. Bement, with 33 Engravings of Fowls Poultry Houses, &c., &c.

Also—Filters and Filtering Cisterns, five Engravings—Lightning Rods, 13—Useful Tables of Weights and Measures, &c.—Maple Sugar Making. To these and many other subjects more or less space is devoted.

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Farm Work.—A calendar of Suggestions for each month in the Year, with Fifty-six Engravings—including Ice-Houses and storing ice—making Stone Wall, and many other incidental points often omitted—a very valuable article.

Orchard and Nursery Work.—Calendar for the Year, with many useful hints and Twenty-two Engravings.

Kitchen and Flower Garden and Green-House.—The Labors of each successive month reviewed, with notes on varieties of different Vegetables, &c., &c., and Fifty Engravings.

Road Making.—With numerous Illustrations and complete directions.

Cheese Dairying.—A description of the Cheese Factories and System of Manufacture—also Design for private Dairy-House, and Miscellaneous Hints for Dairy Farmers.

Entomology.—A full Chapter on Collecting and Preserving Insects, particularly Interesting to beginners in this important science

Country Homes.—An article with Eight Designs, accompanied by ground plans, &c.

Pruning.—The principles and practice fully described, with over Thirty illustrations.

Poultry.—Treatise on the Turkey—Poultry Houses and their Arrangement with Designs.

Fruits and Flowers.—Training Grapes—the Leading new Pears—New and Desirable Flowers—with a very large number of condensed hints, and select lists according to the latest authorities—fully illustrated.

Domestic Economy.—Full Directions for Canning Fruits and Vegetables—a large number of useful recipes, &c., &c.

Domestic Animals.—A full article on Mutton Sheep—The Management of Swine—also hints for the Bee-Keeper, &c., &c.

Implements and Inventions.—Mechanical Contrivances for various purposes—the Implements of Horticulture—new Machines—largely illustrated.

Woodlands.—Planting Timber for Screens—the care and Culture of the Timber Crop.

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ILLUSTRATIONS.

THE

CULTIVATOR ALMANAC,

FOR 1866.

ASTRONOMICAL CALCULATIONS IN EQUAL OR CLOCK TIME.

ECLIPSES FOR THE YEAR 1866.

I. A partial eclipse of the Sun March 16th. Invisible in the United States. Visible in Siberia, Behrings Straits, and the north Polar region.

II. A total eclipse of the Moon in the evening of March 30th and morning of March 31st. Visible throughout the American continent—beginning at New-York at 9.41 P. M., March 30, and ending 1.33 A. M., March 31. Size of eclipse, 17.04 digits.

III. A partial eclipse of the Sun April 15th. Invisible in America, but visible in the Indian Ocean and southern Australia.

IV. A total eclipse of the Moon September 24th, early in the morning. Invisible in the United States except along its western boundary. Size, 19.404 digits. At San Francisco it begins at 4 o'clock 9m. morning. It becomes total at 5h. 9m. Middle of total eclipse at 5h. 57m. The moon sets totally eclipsed about sunrise.

V. A partial eclipse of the Sun October 8th, in the morning, at the time of new moon. This will be visible in British America and New-England, and in New-York state except its south-western portion, but its size will be very small. Its southern limit of visibility will be a line running from the straits of Mackinaw to Toronto, Owego, Port Jarvis and Fire Island. Along this line the eclipse will be a mere contact of limbs, and in New England it will be from $\frac{1}{4}$ to $\frac{7}{8}$ of a digit in size. At Boston it begins at 11h. 19m. morning, and ends at 0h. 22m. P. M. At Porttand it begins at 11h. 17m., and ends at 0h. 27m. At Quebec it begins at 11h. 3m.- and ends at 0h. 23m. P. M.

MORNING AND EVENING STARS.

VENUS.—Venus will be morniag star until February 25th, then evening star until December 11th, at which time it passes the inferior conjunction with the Sun, and becomes invisible. Just before this time it exhibits a long slender crescent, always *convex* towards the Sun, its horns being turned back, and towards the east; but when seen again, it appears in the east before sunrise, with its long crescent bowing back towards the west. On the 5th of November it will be brightest, being then about 40° east of the Sun.

MARS.—Mars will be morning star until October 8th, when it is 90° west of the Sun; theu evening star the rest of the year. On the 2d of December it begins to retrograde, or move westward past the stars. It will be in the southern signs until May 7th, when it passes the equator northward. On the 28th of March it will be about 10° south of the central stars in the Urn; on the 20th of July it will be 5° south of the "Seven Stars;" on the 6th of August it will be 5° north of Aldebaran; on the 29th of August it will be 2° north of ζ Tauri; September 14th it will be between and 1° north of

η and μ Geminorum; October 18th it will be $9\frac{1}{4}°$ south of Castor, and on the 25th, 5° 37′ south of Pollux. When a planet is *north* or *south* of a star, a straight line drawn from the North Star runs *through both*, whether they be in the meridian or not.

Jupiter.—Jupiter will be morning star until April 21st, when it is 90° west of the Sun; then evening star the rest of the year. It is in the southern signs yet, but is moving northward.

Saturn.—Saturn will be morning star until January 31st, being then 90° west of the Sun; evening star until November 7th, when it is in conjuction with the Sun, and invisible; then morning star the rest of the year. It will be in Libra this year.

Mercury.—Mercury will be visible in the west soon after sunset, about March 23d, July 20th, and November 15; also in the east just before sunrise, about January 16th, May 14th, September 9th, and December 30th, being at those times at its greatest brilliancy.

EQUINOXES AND SOLSTICES.

	D.	H.	M.		D.	H.	M.
Vernal Equinox,	March 20	2	46 eve.	Autumnal Equinox,	Sept. 23	1	43 mo.
Summer Solstice,	June 21	11	26 mo.	Winter Solstice,	Dec. 21	7	42 eve.

THE CYCLES, ETC.

The year 1866 is the second after leap-year, and the latter part of the 90th, and beginning of the 91st year of American Independence: the 6,579 of the Julian Period; the 5,626–7th of the Jewish era; the 2,619th of Rome; the 2,642d of the Olympiads; the 2,178th of the Seleucidæ; the 1,283d of Mohammed, which begins May 16th. The Jewish year 5,627 begins September 10. Dominical Letter, G; Epact, 14; Golden Number, 5; Solar Cycle, 27; Roman Indiction, 9; Dionysian Period, 195.

SHOOTING STARS.

Of shooting stars, there is an average of from five to seven visible every hour on a clear night. They are stray visitants in contradistinction to the prodigious swarms of November and August, which observation during 25 years has decided to be accurately returning phenomena. They are much more numerous during the latter half of the year, when the earth is passing from summer to winter, from aphelion to perihelion. The same increase of number in the last six months of the year is observable in the appearance of fire-balls and aerolites. Now by what theory can we account for this uniform return of meteors in each year? The theory generally accepted is, that there is a ring or annulus of small bodies revolving with planetary velocity about the sun; that the bodies in question are distributed very unevenly in the ring, there being a small section of the ring where the bodies are numerous, with a few stragglers scattered along the rest of its circuit; that the earth passes through the ring every year, and each year in a new place; and that it passes through that part of the ring in which the planets are most numerous once in about 33 years. We have reason to expect a shower in 1866, since the cycle of 32.25 years is probably to be reckoned from some date between November in 1832 and in 1833.

MOON'S PHASES.	Boston.	New-York.	Washington	Sun on Merid. or noon mark.
	D. H. M.	H. M.	H. M.	D. H. M. S.
FULL MOON,	1 2 4 mo.	1 54 mo.	1 40 mo.	1 12 3 58
THIRD QUARTER,	8 4 18 ev.	4 6 ev.	3 54 ev.	9 12 7 31
NEW MOON,	16 3 52 ev.	3 41 ev.	3 29 ev.	17 12 10 29
FIRST QUARTER,	23 4 10 ev.	3 58 ev.	3 46 ev.	25 12 12 42
FULL MOON,	30 3 44 ev.	3 32 ev.	3 20 ev.	

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

DIRECTIONS FOR TAKING LEAF IMPRESSIONS.—Hold oiled paper in the smoke of a lamp, or of pitch, until it becomes coated with the smoke; to this paper apply the leaf of which you wish an impression, having previously warmed it between your hands, that it may be pliable. Place the lower surface of the leaf upon the blackened surface of the oil paper, that the numerous veins that are so prominent on this side may receive from the paper a portion of the smoke. Lay a paper over the leaf, and then press it gently upon the smoked paper, with the fingers, or with a small roller (covered with woolen cloth, or some like soft material,) so that every part of the leaf may come in

MOON'S PHASES.	D.	Boston. H. M.	New-York. H. M.	Washington H. M.	Sun on Merid. or noon mark. D.	H. M. S.
THIRD QUARTER, ...	7	2 55 ev.	2 43 ev.	2 31 ev.	1	12 13 55
NEW MOON, ...	15	5 29 mo.	5 17 mo.	5 5 mo.	9	12 14 30
FIRST QUARTER, ...	21	* 4 mo.	11 52 ev.	11 40 ev.	17	12 14 16
22d.*					25	12 13 16

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

contact with the sooted oil-paper. A coating of the smoke will adhere to the leaf. Then remove the leaf carefully, and place the blackened surface on a sheet of white paper, not ruled, or in a book prepared for the purpose, covering the leaf with a clean slip of paper, and pressing upon it with the fingers, or roller, as before. Thus may be obtained the impression of a leaf, showing the perfect outlines, together with an accurate exhibition of the veins which extend in every direction through it, more correctly than the finest drawing. And this process is so simple, and the materials so easily obtained, that any person, with a little practice to enable him to apply the right quantity of smoke to the oil-paper, and give the leaf a proper pressure, can prepare beautiful leaf impressions, such as a naturalist would be proud to possess. There is another, and we think a better method of taking *leaf*

3d MONTH. # MARCH, 1866. **31 DAYS.**

MOON'S PHASES.	D.	Boston. H. M.	New-York. H. M.	Washington H. M.	Sun on Merid. or noon mark. D.	H. M. S.
FULL MOON,	1	7 8 mo.	6 56 mo.	6 44 mo.	1	12 12 32
THIRD QUARTER,	9	11 8 mo.	10 56 mo.	10 44 mo.	9	12 10 41
NEW MOON,	16	4 53 ev.	4 41 ev.	4 29 ev.	17	12 8 28
FIRST QUARTER,	23	8 18 mo.	8 6 mo.	7 54 mo.	25	12 6 3
FULL MOON,	30	11 47 ev.	11 35 ev.	11 23 ev.		

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

impressions, than the preceding one. The only difference in the process consists in the use of *printing ink*, instead of smoked oil-paper.

LEAF PRINTING.—After warming the leaf between the hands, apply printing ink, by means of a small leather ball containing cotton, or some soft substance, or with the end of the finger. The leather ball (and the finger when used for that purpose,) after the ink is applied to it, should be pressed several times on a piece of leather, or some smooth surface, before each application to the leaf, that the ink may be smoothly and evenly applied. After the under surface of the leaf has been sufficiently inked, apply it to the paper,

4th MONTH. APRIL, 1866. **30 DAYS.**

MOON'S PHASES.	D.	Boston. H. M.	New-York. H. M.	Washington H. M.	Sun on Merid. or noon mark. D.	H. M. S.
THIRD QUARTER,	8	3 58 mo.	3 46 mo.	3 34 mo.	1	12 3 54
NEW MOON,	15	2 19 mo.	2 7 mo.	1 55 mo.	9	12 1 33
FIRST QUARTER,	21	5 47 ev.	5 35 ev.	5 23 ev.	17	11 59 30
FULL MOON,	29	4 39 ev.	4 27 ev.	4 15 ev.	25	11 57 51

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

where you wish the impression: and after covering it with a slip of paper, use the hand or roller to press upon it, as described in the former process.

PLANT SKELETONS.—The leaves are to be put into an earthen or glass vessel, and a large quantity of rain water to be poured over them; after this they are to be left to the open air and to the heat of the sun, without covering the vessel. When the water evaporates so as to leave the leaves dry, more must be added in its place; the leaves will by this means putrefy, but they will require a different time for this: some will be finished in a month, others will require two months or longer according to the toughness of their parenchyma. When they have been in a state of putrefaction for some time,

MOON'S PHASES.	D.	Boston. H. M.	New-York. H. M.	Washington H. M.	Sun on Merid. or noon mark. D.	H. M. S.
THIRD QUARTER,	7	4 58 ev.	4 46 ev.	4 34 ev.	1	11 56 56
NEW MOON,	14	10 14 mo.	10 2 mo.	9 50 mo.	9	11 56 14
FIRST QUARTER,	21	5 14 mo.	5 2 mo.	4 50 mo.	17	11 56 9
FULL MOON,	29	8 34 mo.	8 22 mo.	8 10 mo.	25	11 56 39

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

the two membranes will begin to separate, and the green part of the leaf to become fluid; then the operation of clearing is to be performed The leaf is to be put upon a flat white earthen plate and covered with clear water; and being gently squeezed with the finger, the membranes will begin to open, and the green substance will come out at the edges; the membranes must be carefully taken off with the finger, and great caution must be used in separating them near the middle rib. When once there is an opening towards this separation, the whole membrane always follows easily; when both membranes are taken off, the skeleton is finished, and it has to be washed

MOON'S PHASES.	D.	Boston. H. M.	New-York. H. M.	Washington H. M.	Sun on Merid. or noon mark. D.	H. M. S.
THIRD QUARTER,	6	2 29 mo.	2 17 mo.	2 5 mo.	1	11 57 31
NEW MOON,	12	5 23 ev.	5 11 ev.	4 59 ev.	9	11 58 55
FIRST QUARTER,	19	7 1 ev.	6 49 ev.	6 37 ev.	17	12 0 34
FULL MOON,	27	10 51 ev.	10 39 ev.	10 27 ev.	25	12 2 17

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

clean with water, and then dried between the leaves of a book. Fruits are divested of their pulp and made into skeletons in a different manner. Take, for an instance, a fine large pear which is soft, and not tough; let it be neatly pared without squeezing it. and without injuring either the crown or the stalk; put it into a pot of rain-water, covered, set it over the fire, and let it boil gently till perfectly soft, then take it out and lay it in a dish filled with cold water; then holding it by the stalk with one hand, rub off as much of the pulp as you can with the finger and thumb, beginning at the stalk, and rubbing it regularly towards the crown. The fibres are most tender towards the extremities and are therefore to be treated with great care there. When

MOON'S PHASES.		Boston.	New-York.	Washington	Sun on Merid. or noon mark.	
	D.	H. M.	H. M.	H. M.	D.	H. M. S.
THIRD QUARTER,	5	9 20 mo.	9 8 mo.	8 56 mo.	1	12 3 30
NEW MOON,	12	0 51 mo.	0 39 mo.	0 27 mo.	9	12 4 53
FIRST QUARTER,	19	10 59 mo.	10 47 mo.	10 35 mo.	17	12 5 50
FULL MOON,	27	11 29 mo.	11 17 mo.	11 5 mo.	25	12 6 13

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

the pulp has thus been cleared pretty well off, the point of a fine pen-knife may be of use to pick away the pulp sticking to the core. In order to see how the operation advances, the soiled water must be thrown away from time to time, and clean poured on in its place. When the pulp is in this manner perfectly separated, the clean skeleton is to be preserved in spirits of wine. This method may be pursued with the bark of trees, which afford interesting views of their constituent fibres.

COFFEE A DISINFECTANT.—Numerous experiments with roasted coffee prove that it is the most powerful means, not only of rendering animal and vegeta-

MOON'S PHASES.	D.	Boston. H. M.	New-York. H. M.	Washington H. M.	Sun on Merid. or noon mark. D.	H. M. S.
THIRD QUARTER,	3	2 23 ev.	2 21 ev.	2 9 ev.	1	12 6 2
NEW MOON,	10	9 52 mo.	9 40 mo.	9 28 mo.	9	12 5 14
FIRST QUARTER,	18	4 32 mo.	4 20 mo.	4 8 mo.	17	12 3 50
FULL MOON,	25	10 49 ev.	11 37 ev.	10 25 ev.	25	12 1 53

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

ble effluvia innocuous, but of absolutely destroying them. A room in which meat in an advanced degree of decomposition had been kept for some time, was instantly deprived of all smell on an open coffee-roaster being carried through it, containing a pound of coffee newly roasted. In another room, exposed to the effluvium occasioned by the clearing out of the dung-pit, so that sulphuretted hydrogen and ammonia in great quantities could be chemically detected, the stench was completely removed in half a minute on the employment of three ounces of fresh roasted coffee, whilst the other parts of the house were permanently cleared of the same smell, by being simply tra-

9th MONTH. # SEPTEMBER, 1866. **30 DAYS.**

MOON'S PHASES.	D.	Boston. H. M.	New-York. H. M.	Washington H. M.	Sun on Merid. or noon mark. D.	H. M. S.
THIRD QUARTER,	1	7 25 ev.	7 13 ev.	7 1 ev.	1	11 59 49
NEW MOON,	8	9 30 ev.	9 18 ev.	9 6 ev.	9	11 57 10
FIRST QUARTER,	16	10 44 ev.	10 32 ev.	10 20 ev.	17	11 54 23
FULL MOON,	24	9 21 mo.	9 9 mo.	8 57 mo.	25	11 51 35

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

versed with the coffee-roaster, although the cleansing of the dung-pit continued for several hours after. The best mode of using the coffee as a disinfectant is to dry the raw bean, pound it in a mortar, and then roast the powder on a moderately heated iron plate, until it assumes a dark brown tint, when it is fit for use. Then sprinkle it in sinks or cess-pools, or lay it on a plate in the room which you wish to have purified. Coffee acid or coffee oil acts more readily in minute quantities.

THE CHEMICAL BAROMETER.—Take a long narrow bottle, such as an old fashioned Eau-de-Cologne bottle, and put into it two and a half drachms of camphor, and eleven drachms of spirits of wine; when the camphor is dis-

MOON'S PHASES.	D.	Boston. H. M.	New-York. H. M.	Washington H. M.	Sun on Merid. or noon mark. D.	H. M. S.
THIRD QUARTER,	1	1 25 mo.	1 13 mo.	1 1 mo.	1	11 49 36
NEW MOON,	8	0 14 ev.	0 2 ev.	11 50 mo.	9	11 47 16
FIRST QUARTER,	16	4 39 ev.	4 27 ev.	4 15 ev.	17	11 45 24
FULL MOON,	23	7 29 ev.	7 17 ev.	7 5 ev.	25	11 44 9
THIRD QUARTER,	30	10 1 mo.	9 49 mo.	9 37 mo		

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

solved, which it will readily do by slight agitation, add the following mixture:—Take water, nine drachms; nitrate of potash (saltpetre,) thirty-eight grains; and muriate of ammonia (sal ammoniac,) thirty-eight grains. Dissolve these salts in the water prior to mixing with the camphorated spirit; then shake the whole well together. Cork the bottle well, and wax the top, but afterwards make a very small aperture in the cork with a red-hot needle. The bottle then may be hung up, or placed in any stationary position. By observing the different appearances which the materials assume, as the weather changes, it becomes an excellent prognosticator of a storm or of a sunny ky.

11th MONTH. # NOVEMBER, 1866. **30 DAYS.**

MOON'S PHASES.		Boston.	New-York.	Washington	Sun on Merid. or noon mark.
	D.	H. M.	H. M.	H. M.	D. H. M. S.
NEW MOON, ...	7	5 40 mo.	5 28 mo.	5 16 mo.	1 11 43 42
FIRST QUARTER, ...	15	9 23 mo.	9 11 mo.	8 59 mo.	9 11 43 59
FULL MOON, ...	22	5 31 mo.	5 19 mo.	5 7 mo.	17 11 45 10
THIRD QUARTER, ...	28	10 21 ev.	10 9 ev.	9 57 ev.	25 11 47 13

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

LEECH BAROMETER.—Take an eight ounce phial, and put in it three gills of water, and place in it a healthy leech, changing the water in summer once a week, and in winter once in a fortnight, and it will most accurately prognosticate the weather. If the weather is to be fine, the leech lies motionless at the bottom of the glass and coiled together in a spiral form; if rain may be expected, it will creep up to the top of its lodgings and remain there till the weather is settled; if we are to have wind, it will move through its habitation with amazing swiftness, and seldom goes to rest till it begins to blow hard; if a remarkable storm of thunder and rain is to succeed, it will lodge for some days before almost continually out of the water, and discover great

MOON'S PHASES.	D.	Boston. H. M.	New-York. H. M.	Washington H. M.	Sun on Merid. or noon mark. D.	H. M. S.
NEW MOON,	7	0 41 mo.	0 29 mo.	0 17 mo.	1	11 49 17
FIRST QUARTER,	14	11 59 ev.	11 47 ev.	11 35 ev.	9	11 52 39
FULL MOON,	21	3 50 ev.	3 38 ev.	3 26 ev.	17	11 56 27
THIRD QUARTER,	28	2 39 ev.	2 27 ev.	2 15 ev.	25	12 0 25

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

uneasiness in violent throes and convulsive-like motions; in frost as in clear summer-like weather it lies constantly at the bottom; and in snow as in rainy weather pitches its dwelling in the very mouth of the phial. The top should be covered over with a piece of muslin.

A VERY GOOD MICROSCOPE may be made by dropping a little Balsam of Fir, or Canada Balsam, on the under side of a thin piece of glass. It may be used both before and after it is dry. A Microscope will be of material assistance in detecting the admixture of impure substances with articles of food. Even a common phial filled with water possesses a high magnifying power.

THE

ILLUSTRATED ANNUAL REGISTER

OF

RURAL AFFAIRS.

WORK IN ITS SEASON

FOR THE KITCHEN-GARDEN, FLOWER-GARDEN AND GREEN-HOUSE.

THE following hints are not intended as full directions, but as timely suggestions to assist in the performance of the various operations of the garden in their proper season, as delay or neglect from forgetfulness frequently leads to poor success or entire failure.

Work for January.

KITCHEN GARDEN.—Little can be done out of doors in the northern and middle states. Various preparations may, however, be made, which will essentially lessen labor and care, when active out-door operations commence.

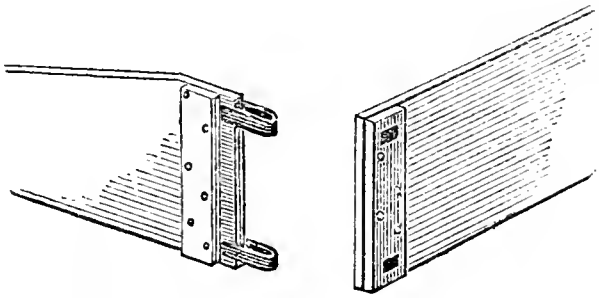


Fig. 2.—*Corners of hot-bed frames.*

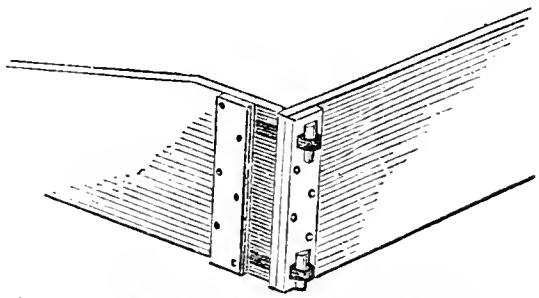


Fig. 3.—*Mode of connecting corners of hot-bed frames.*

Hot-bed frames (figs. 2 and 3) may be constructed or repaired. Nothing is better for the inside of the boards which come in contact with the earth than two or three good coatings of gas-tar, applied hot, when the boards are perfectly dry. It will preserve them from decay many times longer than if unprotected. The outside may be painted with common yellow ochre paint. If any glasses in the sash have been broken, replace them and secure any that are loose. Of the various substitutes for glass, such as varnished muslin, oiled paper, &c., none will compare to glass itself. Hand-glasses of various forms, may be now made ready for spring use. Fig. 4, is a hand-glass, made by

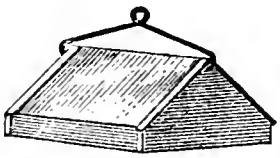


Fig. 4.

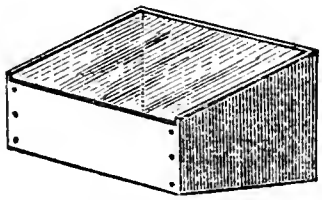


Fig. 5.

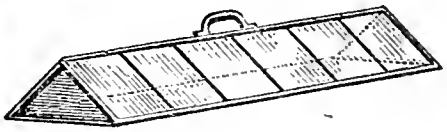


Fig. 6.

sliding a pane of glass on each side of a double-sloped box, in tin grooves nailed on each edge, with a wire loop for handling and hanging up. Fig. 5, is a box hand-glass. Fig. 6, is a long hand-glass, for drills.

Procure or prepare bean-poles and various stakes, brush for peas, &c.; as the latter is most easily inserted by means of a good sharp dibbler, procure one or two of these tools. A blacksmith may manufacture one with a steel point, in a hollow, conical form, into which an old spade handle may be inserted, as shown in fig. 7. Bean-poles are best inserted in holes made with a crow-bar.

Fig. 7. *Dibbler.*

Manure.—As nothing is more important than a plenty of manure for successful kitchen-gardening, every means should be resorted to for an abundant supply. Thoroughly prepared compost is always best, and the beds may be commenced in winter. As long or fibrous manure can never be intermixed well with garden soil, it should be used only in such compost-heaps (figs. 8 and 9) as are to remain over summer. If spread in thin, alternate layers, with loam, peat, turf or leaf-mould, and the heap worked over and made fine, after laying several

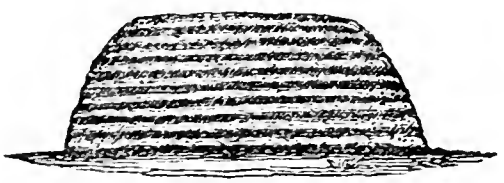


Fig. 8.—*Well made compost heap, with thin layers.*

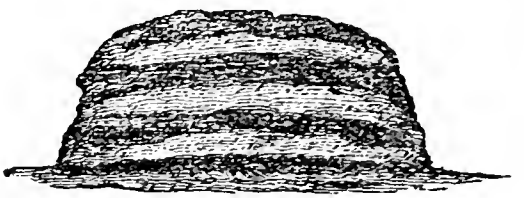


Fig. 9.—*Badly made compost heap, or with thick layers.*

months, it will then constitute an excellent enriching material. A sprinkling of fresh or leached ashes on each layer, as the heap is made up, will add to its value. Manure in a fresher state will answer well for many crops, provided no straw or long litter is used, and the manure is thoroughly and finely incorporated with the soil when applied. In this case it will be necessary to avoid the use of straw for litter (unless chopped short,) and use sawdust or leaves. A pile of strong, fresh manure should be reserved for early hot-beds.

If *Asparagus Beds* were not mulched or coated late in autumn, the work may still be performed. Its chief objects are to protect the plants and to furnish liquid manure for the roots, both of which accelerate the early growth of the shoots.

Seeds.—These should be procured as early as opportunity presents. Get the very best, from the most reliable sources. Never purchase seeds merely because they are cheap. Dishonest, tenth-rate dealers mix old and new seeds together, and it is difficult to detect the fraud. It is not economy to prepare ground in fine condition at much expense, and then grow poor vegetables, or lose a crop by the failure of seeds.

Flower Garden.—Cuttings may be prepared of hardy deciduous shrubs, and packed away in cellars, in boxes of damp moss. Hardy shrubs, set out in autumn may be mulched with manure; it will tend to protect the roots from cold, assist in enriching the soil, and prevent the ground from becoming hard and crusted in spring. In the middle states, where the ground is not frozen, beds for the spring planting of flowers may be cut in turf, and the excavation filled with enriching materials; and trenching, where necessary, may be performed. Marking sticks, rods for tying up flower stalks, and structures (figs. 10 and 11) for supporting climbers may be made.

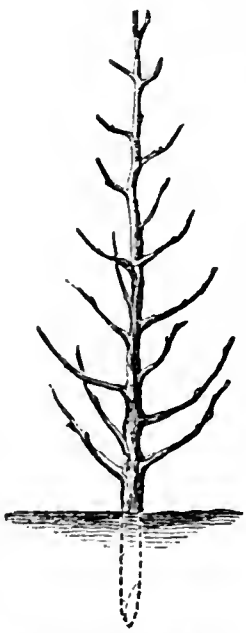


Fig. 10.—*Support for climbers.*

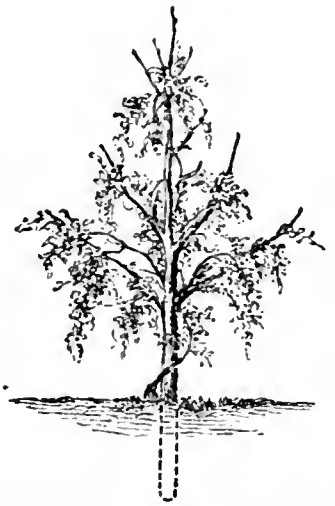


Fig. 11.—*Support for climbers, partly covered.*

Green-House.—As plants in the green-house, during this season of

the year, are mostly in a nearly dormant state, they need but very little watering. The soil may be examined, and if moderately or slightly moist, that is sufficient. The temperature should be about 45° or 50° in the day time, and 35° to 40° at night—never lower than 35°. Watch the thermometer sufficiently to prevent all danger of freezing. In very severe weather exterior matting must be resorted to.

Work for February.

KITCHEN-GARDEN.—Read the directions for last month, most of which will be applicable throughout the present month. Hot-beds for the early forcing of cabbage, tomato, egg-plants, &c., may be made in the middle states. Procure a supply of fresh manure for these, and old or decayed manure or compost for spring application to open ground. Composts, worked over and made fine, greatly exceed in value coarse and imperfect mixtures.

Hardy grapevines, currants and gooseberries may be pruned. Examine tools and see they are all in repair. Procure the very best, now that labor is so high priced—for a tool costing two dollars, and enabling a workman to do fifty cents more of labor per day, will pay for itself many times over during the season. Seed drills, and all implements for saving labor, should be procured.

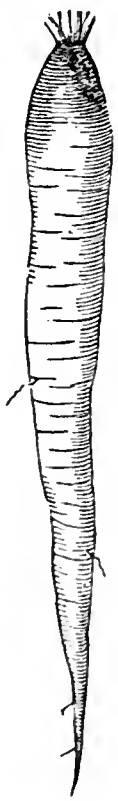


Fig. 12.

Seeds.—Observe the remarks under last month, and obtain the best selected seeds, from the most reliable sources. Plant but few varieties, and these the best—but a share of the new sorts may be placed on trial, on a small scale. Among the leading kinds the following varieties may be mentioned as worthy of planting for general crops. Figures and descriptions are given of several of these, to assist in identifying the varieties, and for preventing mistakes.*

Radish.—The Olive-shaped is the best early; the long scarlet (fig. 12) is the best for general crops. The Black Spanish is sown late, for winter use.

Beet.—The Bassano (fig. 13) is the best early variety; it is flat, somewhat like a flat turnip, but more ribbed, and varies from four to six inches in diameter. It is not suitable for long keeping, becoming coarse and fibrous. It is succeeded in a few days by the Early Turnip

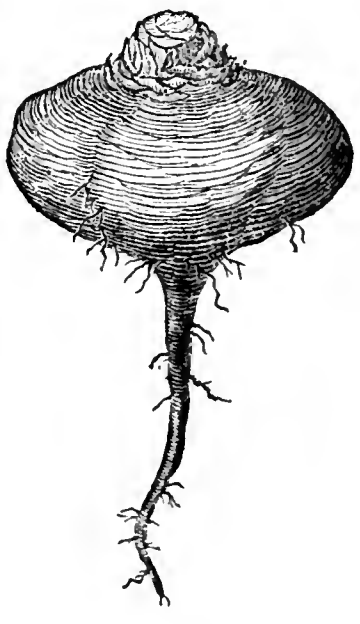


Fig. 13.

* For most of these figures, copied from BURR's "Vegetables of America," we are indebted to J. E. TILTON & Co., publishers, Boston.

Fig. 14.

Beet, (fig. 14,) which is better for long keeping, and is adapted to extensive cultivation. The Long Blood Beet is also an excellent beet for cultivation, and for late planting for winter use. Its long continued culture has led to much variation, and hence the importance of selecting seed and securing the best varieties. The improved Long Blood (fig. 15) is larger and longer than the common variety, sometimes extending to near two feet long. It is very dark in color, being nearly blackish-purple.

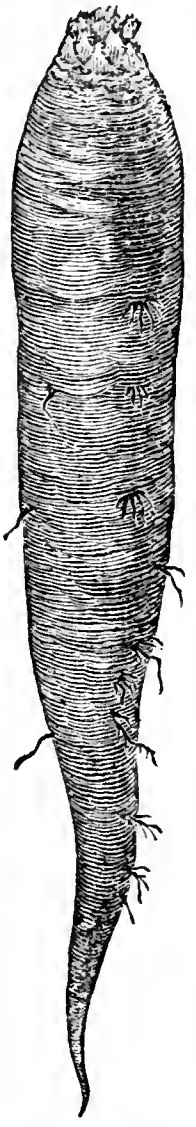


Fig. 15.

Turnip.—The Purple-top Strap-leaved, (fig. 18,) is one of the most valuable varieties. It is productive and excellent in quality, the flesh being clear, white, firm, rich and well flavored. The White Top Flat (fig. 19) is a medium size and uniformly white in color. The leaves are few and small, the flesh white, firm and well flavored. The White-top Strap-leaved is similar to the Purple-top Strap-leaved, but differing in color—both excellent in quality. The Yellow Malta is a handsome, small bulbed early variety, and is one of the best yellow turnips for summer use. The Yellow Stone is also an excellent variety.

Fig. 16
Well formed long Blood Beet.

Fig. 17.
Badly formed beet, or poor sort.

Onions.—The Large Red Wethersfield (fig. 20) is of very large size, and, yielding heavy crops, is extensively cultivated. It is one of the best for keeping. It is often five inches in diameter, and three in depth; the skin is deep purplish red; the flesh purplish white. The Silver Skin Onion (fig. 21) is of medium size, with a skin silvery white; the flesh is white, fine grained and mild

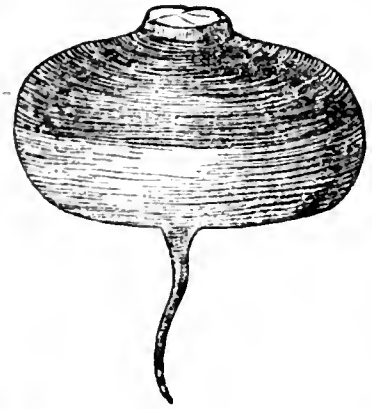


Fig. 18.

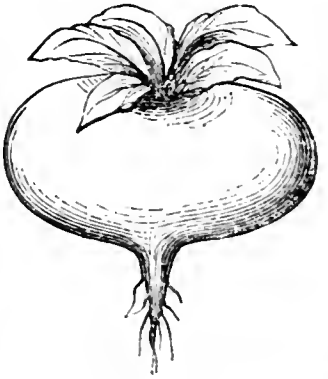


Fig. 19.

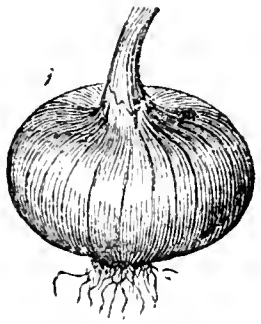


Fig. 20.

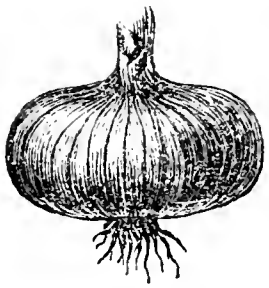


Fig. 21.

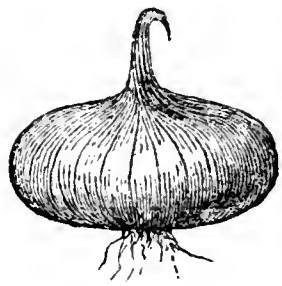


Fig. 22.

flavored. It is a poor keeper, which is its chief objection. It is, however, well adapted for sowing at the close of summer, for early use, or marketing in spring. The Yellow Onion (fig. 22) is an excellent variety, widely known and extensively cultivated. It is rather above medium in size, has a yellowish-brown skin and a nearly white, fine-grained and well-flavored flesh. The Danvers Onion is a sub-variety, greater in productiveness but not so good a keeper.

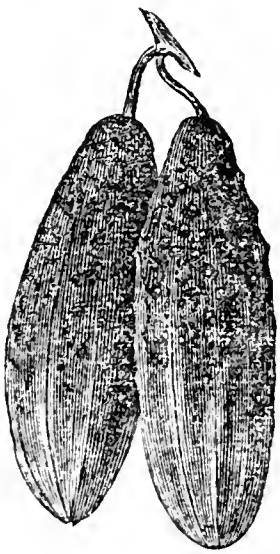


Fig. 23.

Cucumbers.—The early cluster, (fig. 23,) is small and very early. It is quite productive and a popular early garden sort, but is not adapted for pickling. The Early Frame is a few days later, and is a well known and a good sort. The Long Green is one of the best for general use.

Melons.—The Green Citron, (fig. 24,) is nearly round and regularly ribbed; in size medium or rather small, skin green and thickly netted; flesh green, very juicy, with a rich and sugary flavor. It is uniformly excellent, quite productive and is one of the most valuable varieties. The Large Netted Muskmelon, (fig. 25,) is large, oval, strongly ribbed, thickly netted, yellow; flesh yellow, thick and sweet, but not so juicy and melting as the last; hardy, and well adapted to common cultivation.

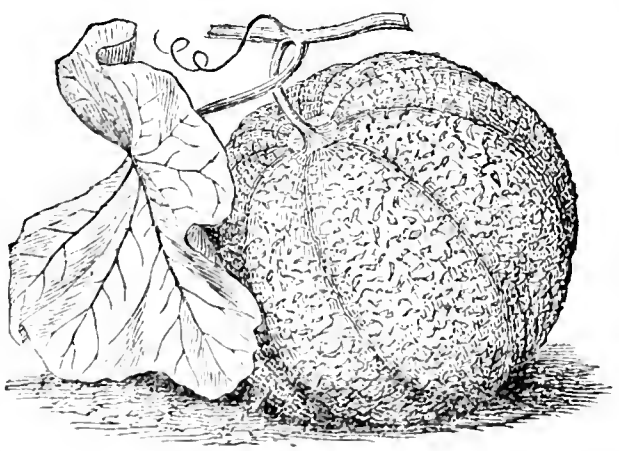


Fig. 24.

Watermelons. — The Black Spanish is large in size, roundish or oblong, somewhat ribbed, skin very dark green, flesh deep red, fine grained, sweet and excellent; seeds nearly black. The Carolina Watermelon is large, oblong, deep green, variegated with pale green; flesh granular, crisp, sweet, and of a good quality; seeds black. The

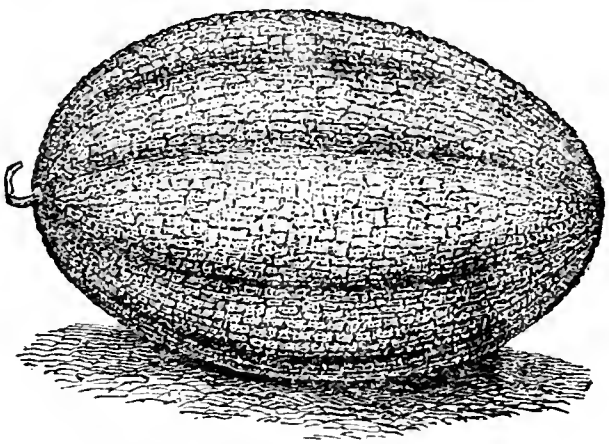


Fig. 25.—*Large Netted Muskmelon.*

Fig. 26.

Mountain Sweet watermelon is similar in form, but of a darker green; seeds brown.

Squashes.—Among the numerous varieties, the following rank as some of the best: Summer Crookneck, (fig. 26,) is bushy in habit; fruit medium in size, measuring about eight inches in length; bright yellow, warty. It is soft, and easily penetrated by the nail, when young and at a proper age for use. It afterwards becomes harder, and the flesh coarse and unfit for cooking. The Scalloped, (fig. 27,) is early, erect in growth, fruit somewhat hemispherical in form, deeply and regularly scalloped. It should

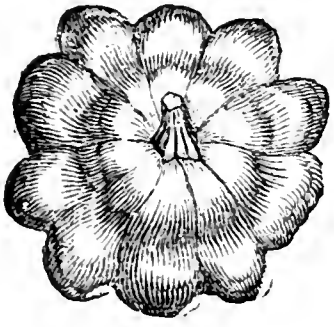


Fig. 27.

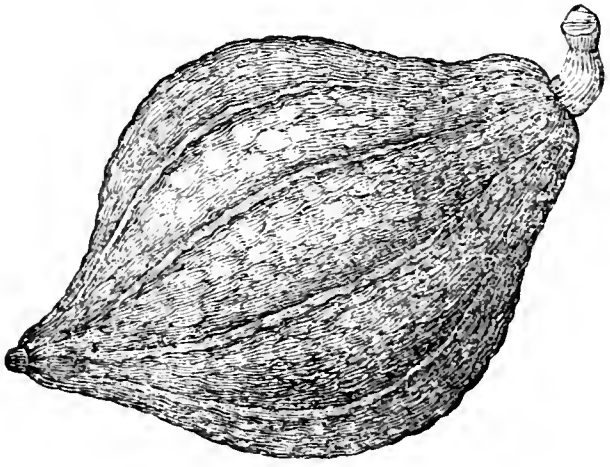


Fig. 28.

be used when not more than half grown. It is not quite so dry and sweet as the summer crookneck. The right time for using these two varieties is easily determined by piercing them with the finger nail. The Hubbard Squash, (fig. 28,) is an excellent variety, which has of late years become widely known for its excellent quality and long keeping. The form is an irregular oval, or somewhat like a double cone; surface knotty, dull green; flesh rich, yellow, fine grained, sweet, dry and excellent; keeps well through the winter, but is rather best when nearly fresh. Sweet Potato Squash, (fig. 29,) is somewhat similar to the Hubbard, but is larger and smoother,

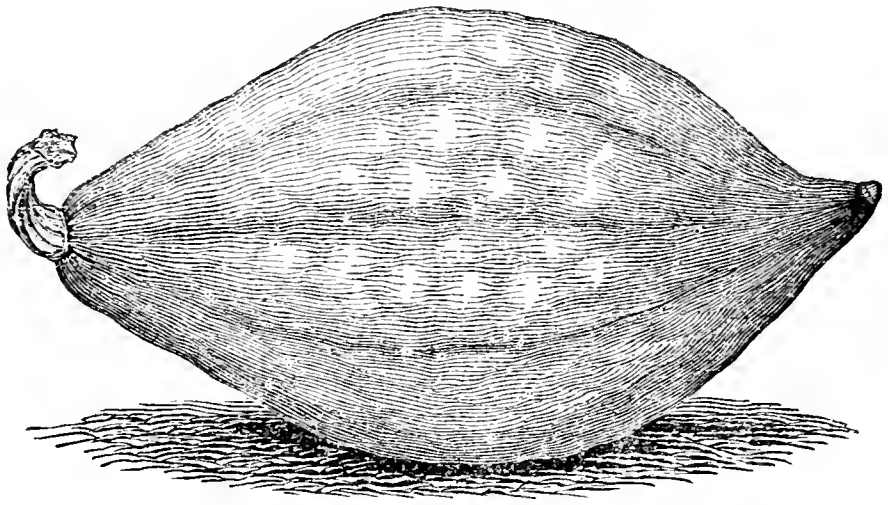


Fig. 29.

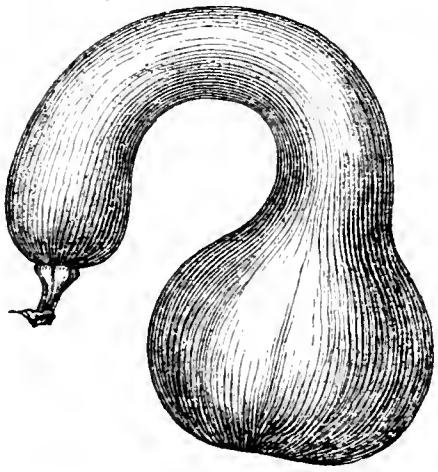


Fig. 30.

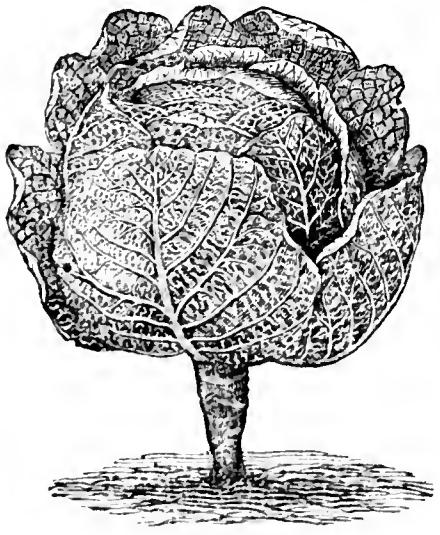


Fig. 31.

and the skin much lighter in color. The flesh is yellow, fine grained and sweet, nearly equal to the Hubbard. Winter Croockneck, (fig. 30,) is an old, widely-known sort, remarkable for its productiveness and ease of cultivation. It is quite variable is size, form and quality.

All these, as well as other varieties of the Squash, should be planted far away from each other. Two varieties in the same garden, even when planted at opposite sides, will become intermixed and deteriorate.

Cabbage.—The Early Sugar-loaf is the earliest variety, but must be used as soon as the heads become solid, as it will not keep long. It is immediately followed by the Early York, one of the oldest, most popular and best early sorts. The Winter Drumheads, of which there are several sub-varieties, are the best for winter use. The *Savoys* are distinct varieties; remarkable for their tender and delicate texture, but they do not head so compactly as the common sorts. The Green Globe Savoy, (fig. 31,) is one of the best and most commonly known. As it requires a long time to perfect its heads, it should be planted early, have rich soil and receive good cultivation. The Red Cabbage is desirable for pickling.

Peas.—One of the best early varieties is Landreth's Extra Early; which, however, quickly ripens its seed. The Eugenia is one of the finest of the new early sorts. The Champion of England and the Marrowfats are the best of the later varieties.

Flower Garden.—See directions for last month. Sticks, rods and structures for supporting flowers and climbers, being constantly exposed to moisture, should be protected from decay by paint. Avoid rendering them conspicuous by painting white; small rods may be green; larger structures appear much best if painted brown. To prevent decaying at joints, apply a thick coating of gas tar at those places when they are put together. Stakes, poles, &c., should be well coated with the same material, where they enter the ground.

Hardy shrubs may be pruned for the purpose of bringing them into symmetrical shape; if they grow too freely, cut off the longer leaders; if too feeble, thin out the flower spurs.

Fig. 32.—*Badly trained green-house plant.*

Green-House.—Follow the directions of last month in relation to temperature and watering. Plants beginning to grow will need more water, as they throw off a portion from their fresh leaves; but be careful not to overdo the matter. Keep both shrubs and plants, as soon as they commence growing, pinched into compact symmetrical shape, and avoid one-sided and long-stemmed growth. Remove decayed leaves and everything adverse to neatness; destroy insects by fumigation with tobacco and a solution of whale oil or soft soap. Repot or top-dress the soil where necessary.

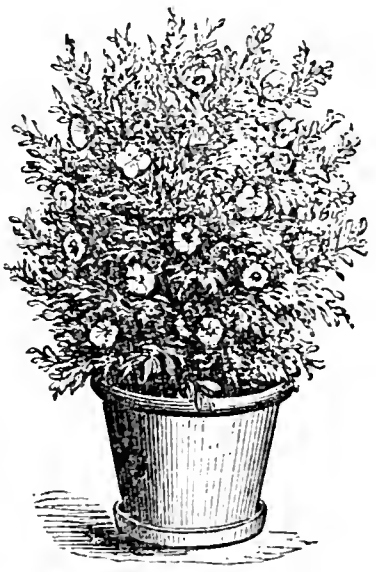


Fig. 33.—*Well trained green-house plant.*

Work for March.

Kitchen Garden.—Open ground work can be performed only in the middle states, and towards the end of the month; and it is better to wait till danger from cold and freezing storms has passed.

Asparagus beds should be forked up the moment the frost leaves the ground, turning under the manure applied in autumn, and avoiding injury to the crowns or forming shoots. Pie-plant may be obtained early by covering each plant with a barrel open at top and bottom, and filling it loosely

with manure; the stalks will grow up through the manure and become large, blanched, tender and excellent. Early potatoes may be accelerated by placing the cut roots closely together in a hot-bed, and covering with a few inches of earth. Set these out when the sprouts have about reached the surface, and a week or two will be gained by the operation. If allowed more room in a hot-bed, they may be set out when two or three inches high; but in either case the transplanting should not be done so early as to cause danger from frost. Lettuce, sown in autumn, transplanted into the hot-bed, will come forward earlier than if sown there. The earliest peas may be planted as soon as the ground admits working.

Hot-beds in the northern states, for ordinary purposes, should not be made before the 20th. If made earlier, for prolonged forcing, they will need encasing in fresh manure before the old heap becomes spent.

Manure, if not spread in autumn, should be applied as early as practicable to open ground; and if the soil admits, worked in towards the close of the present month. Remember that manure thoroughly and finely intermixed with the soil is worth more than double such as is left in lumps or masses, or deeply spaded under in a single stratum.

Flower Garden.—New beds for planting annuals, herbaceous perennials and shrubs, if not made last autumn, should be made as early as the ground opens, that the enriching materials may become thoroughly diffused through the soil. Hardy perennials and bulbs should be divided and set out as soon as the soil will admit, as they commence growing early. Hardy shrubs may be transplanted at the same time, or afterwards. Be careful to spread out all the fine roots, and fill among them well with fine soil; cut the shoots back well, to give them a good form, and to cause a fine start. Sow annuals in hot-bed for early flowering.

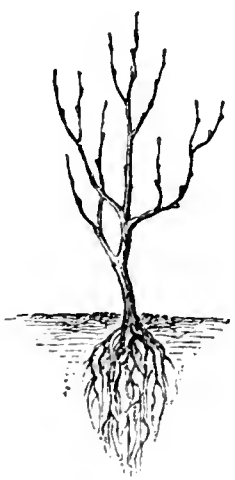


Fig. 34.—*Carelessly planted shrub.*

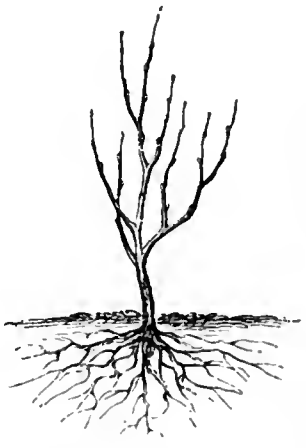


Fig. 35.—*Well planted shrub.*

Tender shrubs and plants, and half-hardy bulbs, which were covered with leaves or evergreens in winter, should have this covering gradually removed as warm weather approaches. Clear away all unnecessary litter, and keep the ground neat and clean.

Hardy roses should be pruned before the buds open, and enriching materials applied to the soil. The fresh start thus given them will furnish a finer and more copious bloom.

Box edging may be re-set towards the close of the month. If, as sometimes happens, the plants have grown tall and large, set them deeply in a

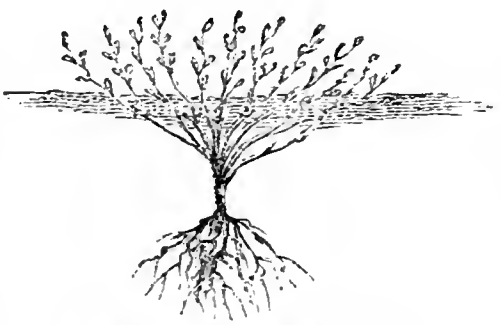


Fig. 36.—*Setting out box-edging.*

narrow trench, spread out the branches like a fan, (fig. 36,) and press the earth, as the trenches fill, compactly against them; then shear off the whole row nearly to the ground. These will all grow and leave no gaps.

New lawns should be sown heavily with suitable grass seed, (at the rate of two bushels or more per acre,) as early as the ground can be prepared and properly mellowed. The seed will start early, and grow beyond the reach of summer drought, and being mown every week, will form a beautiful turf the same year. Lawns formed by sodding should be made very early, before the grass starts, and the turf laid closely and compactly so that there may be no crevices between the cut portions or beneath them.

Fig. 37.—*Badly laid turf.*

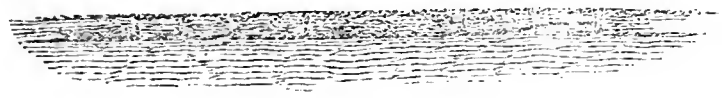


Fig. 38.—*Well laid turf.*

Green-House.—Air very freely in fine weather. Head back oranges or give them a proper shape. Give water more freely to plants in full growth. Remove all dead leaves, trimmings and rubbish, as well as dust, from the leaves, and moss or mould from the outside of the pots, and give the whole apartment a neat and fresh appearance. Carnations may be layered and fuchsias propagated by cuttings. Repot and prune plants.

These directions being for green-house plants only, (and not for those from tropical regions requiring a high heat,) the temperature should be continued moderate, or from 45° 60°.

Work for April.

Kitchen Garden.—Cumplete the labors directed in last month and prepare the ground for early crops as soon as sufficiently dry. With heavy soils at least a week or two may be gained by underdraining; and sometimes the same excellent effect may be attained by the addition of sand from any source where it can be obtained. It will be observed that the application of sand has this great advantage over manuring,—it remains perpetually in the soil. In the northern states all the early garden crops may be planted soon after the opening of this month, if a good soil has been prepared. Hardy plants, such as parsnips, carrots, beets and onions, may be sown as early as the ground is fit for them. Those more sensitive to cold, such as beans, cucumbers and squashes, cannot be hurried by early planting; but only by forwarding in hot-beds, or starting under hand-glasses.

Asparagus should be transplanted very early or before the shoots appear.

It will continue longer and flourish better if two distinct beds are provided and shoots cut from them alternate seasons; a continued cutting from the same bed has a tendency to check the roots. The old practice of digging a pit three or four feet deep for asparagus, and filling it with a rich compost of manure and soil, is unnecessary—and induces planters to place the roots too closely together, in order to obtain all they can from the bed. The shoots will be larger and better if the plants are allowed plenty of room on a soil less than half as deep, with constant cultivation to keep the surface mellow. Asparagus beds covered with manure litter in autumn or winter, should have this forked in as soon as the soil thaws, avoiding injury to the crowns.

Hot-beds may be made in the northern states by the first of the month, and will prove useful in forwarding young cabbage, tomatoes, lettuce, radishes and cucumbers, as well as many other vegetables. Cucumbers and other plants which do not bear removal well, should be planted in pieces of inverted turf or in small pots.

In planting seeds it is important to observe a proper depth corresponding with the size of the seed. More injury is done by deep than by shallow planting; unless the work be postponed late in the season, when the soil is quite dry. We have known unskillful gardeners, for example, to cover beets two or three inches deep, very few of which come up, and the seedsmen denounced as a consequence. Seed from the same parcel covered scarcely an inch in depth came up copiously. Avoid superficial waterings of planted seed in dry weather, as it only serves to moisten and crust the surface.

As soon as young crops appear, keep the soil constantly mellowed to accelerate growth and destroy weeds.

In all instances never work a strong soil when wet or adhesive, whether for planting seeds or for cultivating it.

Flower Garden.—The first work is to clear away all rubbish and stalks of plants, straw, leaf or manure coverings, &c. The sooner that the beds for annual flowers can be prepared the better, in order that the compost mixed with the soil may become thoroughly incorporated. Seeds of very hardy plants which start readily or spring freely from self-sown seeds in autumn, may be sown early in spring. Others which germinate with more difficulty, should not be put in until later, or when the soil has become warm. Many seeds are lost and disappointment caused by planting them too soon.

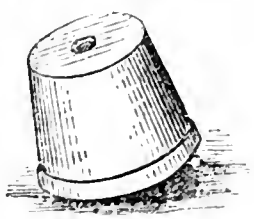


Fig. 39.

If the soil is too dry to start them readily, it may be kept moist for a few days by a covering of matting or sacking, and the young plants may be protected by placing over them a box or broad hoop stretched with thin muslin, or inverted flower pots, (fig. 39,) slightly propped up on the north side. Care must be observed in the depth of burying

the seed. Very small ones, such as the Portulacca, should not be half an inch deep, the moisture of the surface being preserved as above described.

Remember that the great secret of success in raising beautiful annual flowers is, 1. A good selection of sorts; 2dly. A good, well prepared soil; 3dly. Thinning out, so as to give plenty of room for each plant; and 4thly. Pinching in during growth, so as to form neat, symmetrical, densely blooming plants. Annual flowers which have been started in hot-beds, should not be set out before the end of the month or later.

Biennials and perennials sown a year ago should be reset, giving each plant sufficient room. Stools of perennials which have become large, and which it is desired to multiply, should be taken up and carefully pulled asunder, and replanted—doing the work very early, before growth has commenced. The growth of dahlias may be started in pots within doors.

Hyacinths shaded from the sun at the commencement of blooming, will be finer and continue longer.

Towards the end of the month care should be given to mellowing the soil in flower beds, especially in those occupied with perennials, were it is liable to become crusted.

Lawns should be sown as early in the spring as the ground can be prepared; and the seed very thickly sown, brushed, raked or rolled in. It will start more evenly and densely than if the sowing is done later, being careful to mow it at least once a month during the season.

Gravel-walks should be constantly kept in neat condition—nothing can make a flower garden appear well where the walks are neglected or left uneven or with ragged edges, or with irregular or angular border-lines. Let them form graceful curves and possess a neat, smooth, finished surface, and they will give character to almost any grounds they traverse.

Flower Beds and Edgings.—The modern practice, which is undoubtedly the best in every respect,—for economy, beauty and landscape effect,—of cutting circular, elliptical and arabesque beds in smooth turf, nearly obviates the necessity of forming edgings to these beds; hence the lessened demand for box edging and plants of a similar character. In some cases, however, such may be desirable, and if placed on lawns nothing perhaps is better than ornamental tile of a soft brown color made for this purpose, projecting but slightly above the surface. Edging made of growing plants is only applicable to beds which do not border on grass. Box, if well planted or started

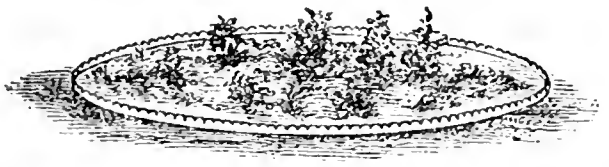


Fig. 40.—*Flower Bed, cut in turf, with tile edging.*

Fig. 41.—*Section of Flower Bed, cut in turf.*

Fig. 42.—*Tile edging.*

and kept properly shorn down, forms a neat edging for a few years; but as it becomes older loses its fresh appearance and is liable to be killed in spots. The smaller species of iris form stout, vigorous edgings, easily kept within bounds. A neat and good edging is also formed of the Blue-eyed grass or *Sisyrinchium*, a native plant, growing frequently in wet meadows throughout the country.

Insects, as warm weather approaches, will begin to make their appearance. Use the usual appliances of tobacco-water, tobacco smoke, white hellebore, soap-suds, &c.

Green-House.—Accustom the plants to fresh air whenever the atmosphere outside becomes warm, lessening fire as the season advances, or keeping it up only at night. Place the hardiest plants nearest the draughts of fresh air. Water sufficiently such as are growing rapidly, and sparingly those more nearly in a dormant state. Syringe frequently. Apply liquid manure to feeble plants, and cut back old or stunted ones to start new shoots. Pinch back such as are freely growing, to give them symmetrical form. Give fresh soil where necessary, and keep the earth well loosened. Make cuttings of Verbenas, Petunias and Fuchsias.

Work for May.

Kitchen Garden.—Complete the work prescribed last month. Finish sowing hardy vegetables; and as soon as the soil becomes warm, plant beans, cucumbers, melons and squashes. Set out plants from hot-beds, and re-sow failures. Thin out plants where too thick, and constantly destroy all weeds on their first appearance. Insects will begin to multiply—one of the best remedies for them is a brood of young chickens which may be placed in any desired part of the garden, by confining the hen to a coop. The striped bug so destructive to cucumbers and squashes, may be destroyed by passing around twice a day and killing with thumb and finger; or they may be kept off by means of boxes covered with fine netting, (fig. 43.) Small cheese boxes, or even circular strawberry boxes answer a good purpose, being prepared similar to the circular shade for flower-seeds represented in the directions for last month.

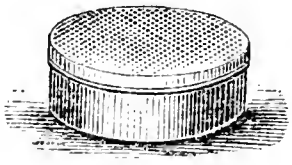


Fig. 43.

Keeping the surface of the soil constantly fine and mellow, will serve to retain a sufficient degree of moisture better than any watering.

Water-melons usually succeed best on light warm soils; but heavy soil may be made to produce them in great abundance by intermixing thoroughly a copious supply of fresh manure to a depth of twenty inches or more and several feet in breadth, raising the surface to a height of about one foot.

Among the best varieties of Sweet Corn, is Darling's Early, (fig. 44,) maturing quite early, producing little fodder and proving excellent in quality.

The Hill Corn, (fig 45,) well known in some parts of Massachusetts, is a very productive 8-rowed yellow sort.

Fig. 44.

A few special directions, familiar to experienced gardeners, but perhaps useful to others, may be briefly given:—Plant peas for succession—different varieties of squashes and mellons which intermix, should be placed remote from each other—tomatoes transplanted from hot-beds, giving about four feet square for each plant, and if they grow luxuriantly, so as more than to cover this space, the soil has been too highly manured and they should be placed on land of less fertility—seeds of doubtful quality should be tested before sowing largely—insert poles for running beans before they are planted; the Lima will ripen best on the south side of a building or wall—long beets for the main crop may be sown towards the close of the month. The hand glasses mentioned in the directions for a former month, may be used for covering tender plants when frosty nights are feared.

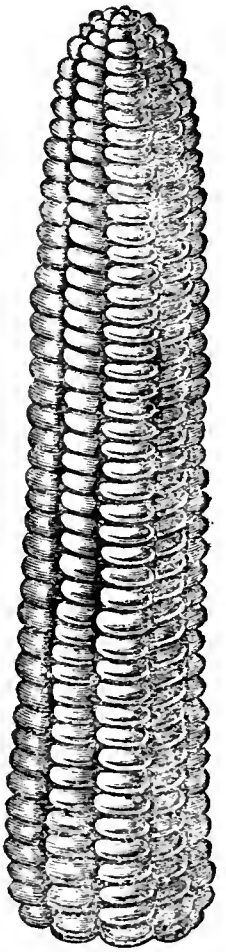


Fig. 45.

Flower Garden.—Follow the directions given last month for preparing the ground and planting seed. Re-plant annuals from hot-beds and thin out where too thick—a common reason why they do not grow and bloom well, is over crowding the surface. Shades or awnings placed on tulips will much prolong the blooming season. Early bulbs when the leaves are dead, should be taken up and packed away, marking each sort accurately. Tall-flower stalks likely to be broken down with wind, should be tied to neat stakes. Branching ornamentals tending to grow tall and meagre, should be pinched back while growing, to give them a more compact form.

Keep gravel walks neatly dressed—mellow the surface of flower-beds—mow lawns once a week or oftener, and preserve a neat appearance in the whole grounds.

Bedding plants from green-houses may be set out during the latter part of the month, such as verbenas, salvias, pelargoniums, &c.

Care should be taken, in forming flower-beds, whether of annuals, hardy perennials or bedding plants, not to mix together those of dissimilar character, and especially those quite unlike in habit and height. Where flower-beds are cut in lawn, each entire bed should be occupied with the same plant so as to form masses of flowers, or with more than one if they are of the same height and bloom together. A succession of different sorts may be in

some instances obtained from the same bed,—for example, annuals transplanted after early bulbs, or between herbaceous perennials that grow upright and do not spread much laterally.

Green-House.—Most of the plants in pots may be removed to open ground before the close of the month. Skill may be exercised in arranging them so as to group well together, and the pots should be kept clean, and the plants in a neat condition. Many growing plants will need changing to larger pots. Those remaining in the green-house should be supplied with plenty of fresh air, which in warm weather may be given copiously.

Work for June.

Kitchen Garden.—The chief points of attention during this month are constant tillage, and the destruction of weeds. There is no necessity that a single weed should grow in a well-managed garden—most gardeners being satisfied with destroying nineteen-twentieths and leaving the twentieth to grow and ripen seed. It would be well to destroy the latter as well as the others. Constant tillage tends to preserve moisture in hot weather, and to accelerate the growth of the plants. If labor is scarce provide the very best tools—which at a very slight increased cost, may double the effective work of the gardener.

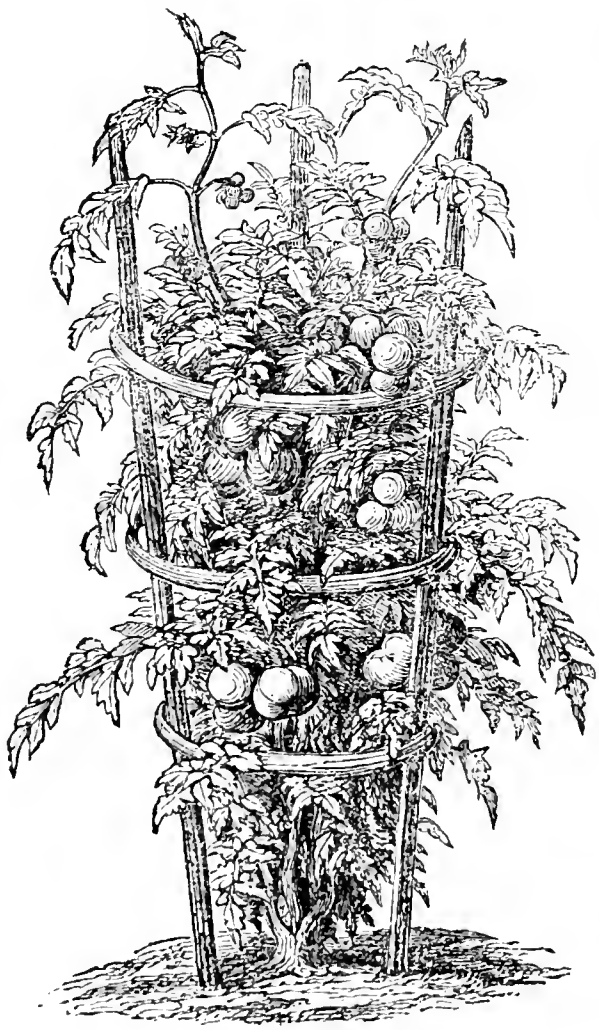


Fig. 46.—*Hoop training Tomatoes.*

We have given, in former numbers of the Register, the mode of training tomatoes on a trellis. A convenient, simple and economical support may be made of narrow hoops, varying from a foot to eighteen inches in diameter, and secured to three stakes about four feet high, placed as shown in fig. 46. See Illustrated Annual Register for 1863, page 331, for raising tomatoes in barrels.

Plant for succession, peas, beans and sweet corn, and beets for winter crops. Set out celery and cabbages—the latter are effectually protected from the grub or cut-worm, by wrapping around the stem a small piece of writing paper, so that when set

out the paper may extend an inch or so above and below the surface of the soil. Dip the roots in thin mud before setting out, and they will need no shading from the sun. Watch for insects as directed last month.

Gooseberries may be easily kept for winter use if picked while yet green and hard—if nearer ripening they will spoil. Fill bottles full with them, cork them up dry, and place them in a cool and quite dark cellar.

Flower Garden.—Set out dahlias and complete the transplanting of bedding plants and hardy annuals. Short-lived flowering annuals may be sown late. Continue to take up bulbs as the leaves become dry, remove off-sets if any, and when the surface is dry remove and pack away. Stake tall flower-stems, and cut away and clear off dead stalks. Removing the flower buds from roses as soon as they form, will cause them to give a later or second crop. Removing seed-vessels before ripe will prolong the flowering of other plants. Gather ripe seeds.

Green-House.—Give plenty of air—carry out all but the tenderest plants—insert cuttings for propagation—make layers—wash foliage—mulch pots in open ground with mowings of lawn, to retain moisture.

Work for July.

Kitchen Garden.—Continue without intermission the hoeing and mellowing of the surface of the soil, and the destruction of weeds. Thin out crops where the plants crowd each other. The thinnings of beets may be used on the table and constitute excellent greens. Watch for insects as before. Save seeds as they ripen. Late crops of turnips may be sown before the close of the month. To prevent destruction by the turnip fly on adhesive soils, all the clods must be crushed, and the surface left even and mellow. Spreading old straw over the surface of such soil, burning it, and then sowing the turnips on the surface after a slight raking, ensures them success.

Flower Garden.—Continue to keep the surface of beds mellow and smooth, and every part of the grounds in neat condition. Layers of shrubs and plants may be made in open ground, such as roses, honeysuckles, verbenas, &c. Continue the pinching-back process to give a neat form to shrubs and plants. Tie up plants to stakes where necessary. Gather and mark seeds as they ripen.

Green-House.—Follow the directions of last month. Shade plants during hot days. Shrubs in a growing state, from which the bark separates freely, may be now budded. Cuttings for winter blooming may be inserted. Shrubs should be pruned and pinched in to give them a proper shape. Clear away all rubbish and keep everything in finished order. Secure a good supply of earth, compost and sand for potting.

Work for August.

Kitchen Garden.—Continue to carry on the work of previous months in cultivating the ground, and keeping it clear of weeds. Collect, put up

carefully, and mark seeds as they ripen. Sow winter radish and late crops of turnips. Earth up celery. Thin the fruit on melons, and remove those particularly which will not probably ripen. Do the same with tomatoes. Potato tops, as the crop is dug, should be buried beneath the soil, and all ground rendered vacant by the removal of any crop, cleared of rubbish and kept perfectly clean, if not replanted.

Flower Garden.—See the directions for last month. Sow bulbous-rooted plants to obtain new sorts; set out bulbs during this on next month, or even later. Stake dahlias as they need it, and pinch into form and thin out imperfect flowers. Herbaceous perennials, which have ceased flowering, and which often make a second growth in autumn, may be divided for increasing during the present dormant state.

Green-House.—Propagate succulent plants by slips, suckers, &c. Mellow the surface in pots and give fresh earth where needed. Bud oranges and lemons if the bark separates freely. Propagate pelargoniums by cuttings. Plants standing in pots dry more quickly than in beds, and if growing, should be therefore kept well watered. Procure peat, leaf-mould, sand, &c., for future use.

Work for September.

Kitchen Garden.—Continue cultivation to all growing crops. Sow lettuce and spinach for wintering over, protecting in frames or with layers of evergreen boughs. Draining or trenching if unfinished, should be completed. Continue earthing up celery. Save seeds of all crops as they ripen, selecting from the largest when magnitude is an object, and those first ripened, where early maturity is sought. Mark them distinctly to prevent mistakes.

In preparing new gardens for next season's planting, or for enriching the soil of present ones, the sooner that manure is applied and mixed with the earth, the more time it will have to become thoroughly infused in every part. The present month is, therefore, a suitable time to apply fresh or old manure or compost, whether left on the surface or turned under.

Flower Garden.—Set out bulbs—divide perennials—continue to keep the ground mellow and clean, and to gather seeds. Dress and keep all parts of the ground in neat order. Lawns will require less frequent mowing than early in the season, but they should by no means be neglected, as a few straggling plants outstripping the rest, destroy the neatness of their appearance.

Green-House.—Give fresh earth and plenty of fresh air to plants which are returned under glass. See that all parts of the structure are in good repair, and that flues are ready for use. Transplant seedlings, cuttings, &c. Give less water as the weather becomes cooler and plants are retarded in growth. Before returning to the green-house, clean them of decayed leaves, and give them fresh earth.

Work for October.

Kitchen Garden.—Collecting and storing crops for winter will form an important part of the work for this month. All kinds of roots, such as potatoes, beets, carrots, &c., should be taken up without bruising, rendered perfectly clean, and the outside dried before carrying to the cellar. Those that wilt in drying may be kept in a fine fresh condition, easily accessible, by packing them in neat boxes, imbedded in fine damp moss. This is much better than sand, both in being cleaner and easier to reach. Cabbages in the head may be packed away and kept fresh in the same way. Cauliflowers which have not headed, should be planted closely together in a box of earth, and they will usually form good heads before spring. Clear away the dead stems from asparagus beds, and dress them with manure for winter. Manure ground which is not rich enough, by leaving it spread upon the surface till next spring, by which time the soluble parts will become finely diffused through the soil. Procure, and secure from freezing, a sufficient quantity of fine mould and sand for hot-beds next spring. Sow lettuce and spinach for spring use, as directed last month. The season of fresh tomatoes may be prolonged by covering them when night frosts are feared, if it be only with a sheet of muslin or a broad newspaper.

Flower Garden.—Clear away dead plants, stems and leaves, and keep the entire grounds in order. Finish setting out bulbs, hardy perennials and hardy shrubs. Peonies may be divided and set out. Rake up and save all scattered leaves and use them in compost heaps. In setting out hyacinth bulbs, place a handful of sand around each bulb, if the soil is clayey—which will tend to prevent rotting. Late in the month, cover them with a layer of leaves, or long manure,—to be removed in spring.

Green-House.—Give air and fire-heat, as both are respectively needed, and follow the directions of last month. Annual flower-seeds sown now will furnish a fine bloom in winter.

Work for November.

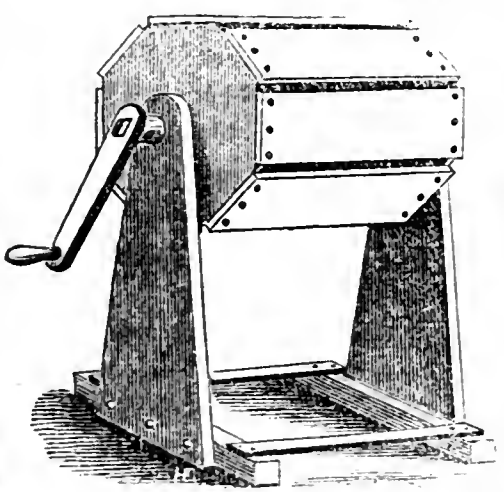


Fig. 47.—*Root Cleaner.*

Kitchen Garden.—As the season is rapidly drawing to a close, finish the gathering of crops early in the month, as directed for October. Roots may be rapidly cleaned by means of a revolving octagonal box, as shown in fig. 47. Slits or openings an inch wide, are left between the eight boards which form the eight sides. One of these sides runs in by sliding—by opening it, a half bushel or more of roots are thrown in, when a few revolutions of a crank, knock off all the loose earth, which falls down through

the openings. By using this cleaner, with the lower part running in water, roots are rapidly and perfectly washed.

Winter dress asparagus beds if not already done. Gather the heads of winter drumhead cabbage, and pack them in damp moss in boxes, as directed last month. Those which have not headed, may be kept and headed during winter for spring use, by the mode described on page 331 of the Illustrated Annual Register for 1863. (Rural Affairs, vol. iii.)

Flower Garden.—Shelter, with a suitable covering of dry leaves, tender plants, such as auriculas and white day-lilies; also cover tender shrubs with evergreens. To prevent the settling of the leaves and smothering, first put on a layer of small evergreen boughs. Take up and secure dahlias. Finish planting hardy bulbs, if not completed, and set out hardy shrubs.

The following mode of obtaining a beautiful bloom of hyacinths for the parlor during winter, is given by a skillful cultivator of this flower—preparations for which should be made early the present month:—

First procure a handsome table made for the purpose, of black walnut with turned legs, so as to be an ornament to the parlor, about four and a half feet long by two feet wide in the clear, so as to hold three rows of eight pots each, the pot being eight inches in diameter. The top of the table is to be like a box or trough, eight or ten inches deep, made tight, and well coated with white lead paint inside, particularly at the joints. Into this table fit a zinc pan of the same depth, with wire handles turning down into the pan on each end. The table is then ready for the reception of the pots.

The pots are usually prepared towards the latter part of November, by taking eight inch soft baked pots and placing in the bottom about an inch of broken earthenware, charcoal or small pebbles, as may be most convenient. Then fill them to the top with a compost of equal parts of clean or washed sand, well rotted cow-manure and loam. An admixture of bone or horn shavings, although not essential, gives increased size and brilliancy to the flower. A bulb is placed in the centre of each pot, just so deep that its top may be seen, pressing the soil around it and watering it thoroughly. The pots are then set in a warm, dark cellar, and watered to prevent drying up. In about a month the pots will be full of roots, but the plants will not have grown more than an inch. They are then (about the middle or latter part of November,) placed in the pan, and the interstices filled with common wood moss—cover the tops of the pots smoothly with the handsomest green moss that can be found, through which the tips of the shoots will just be visible. Water copiously every morning through the fine rose of a watering pot on the moss. The water will collect in the bottom of the pan, and the roots finding their way out through the holes in the pots, will absorb it and grow rapidly. In a few weeks a beautiful dense bloom will be produced, the effect of which will be heightened by a tasteful intermixture of colors. A few narcissus, especially the polyanthus varieties, add much to the effect. The table should be placed in the strongest light. As soon

as a flower fades, it may be carefully lifted from the moss, the pot removed and a new one supplied from the cellar. The table may be of any size desired.

Fig. 48.—*Cutting.*

Cuttings of Shrubs should be cut with a small crown, as in fig. 48. They may be imbedded in sand, in dry trenches or pits, (fig. 49,) covered with earth and then with a coat of manure.

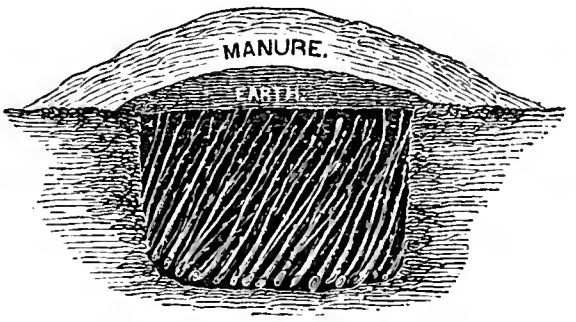


Fig. 49.—*Keeping Cuttings in Winter.*

Winter mulching of shrubs, for protection, should be applied towards the close of the month. (Fig. 50.) It should be spread broadly, or as far as the roots extend (*a*) and not merely at the foot of the stem, as too often done, and as shown at *b*, in the annexed cut.

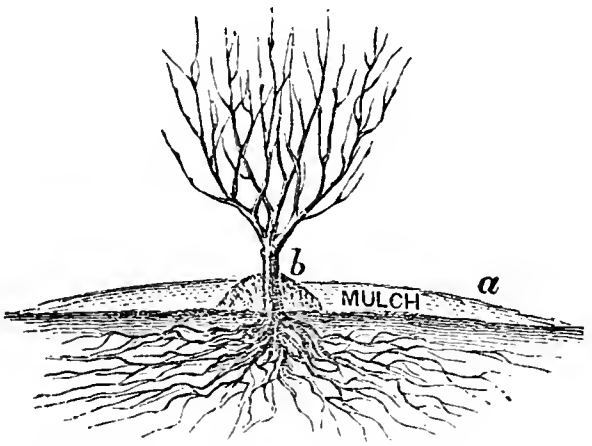


Fig. 50.—*Winter mulching shrubs.*

Green-House.—Plants recently removed from out-doors to the green-house, require more fresh air than afterwards, which should be admitted as far as practicable, according to the state of the weather. Moderate fire-heat should be applied when the weather is cold. A temperature of 458 Fah. is quite high enough for all strictly green-house plants. As they grow but little they should be watered quite moderately.

Work for December.

Kitchen Garden.—The labors of open ground management have closed for the northern states, but in the middle states the directions for last month may still be followed. All stakes, sticks and tools should be carefully housed and new ones made when required, on leisure days.

Flower Garden.—The only remaining out-door work is protecting tender plants and shrubs, if not already done, according to the directions given last month. The preparation of manure, its application to the soil, procuring labels, tools, seeds, &c., as directed for January, may be commenced during the present month.

Hyacinths in water for blooming during winter, are prepared by first selecting good, hard bulbs, without side-bulbs, placing them in glasses filled with rain-water, and then setting them in a warm, dark closet, taking care

that the water does not become foul or evaporate. Roots will be thrown out and partly fill the glass. Bring them out to strong light, as needed, and they will bloom in less than a month. A few drops of liquid ammonia will give higher color to the flowers. The water should be changed once in ten days, taking care that it has the same temperature.

GREEN-HOUSE.—See directions for last month. Give air as required. Keep the earth mellow in pots. Clear away dead leaves as they appear. A temperature of 35S to 45S Fah., is sufficient, but especial care should be taken that it does not run down to freezing point. The hardiest plants should be placed in the coolest parts of the house. If any should accidentally be touched with frost, water the whole plant from a fine rose with cold water. In severe weather apply mats, or close shutters.

WOODLAND AND THE TIMBER CROP.

At the present time, the preservation and growth of timber is more neglected than that of any other product of the land. We have treatises on the management of wheat, corn and other grain crops—on the best system of rotation—books are written on potatoes, turnips and carrots—every intelligent farmer supplies his shelves with works on cattle, sheep and horses—and every farmer, whether he reads or not, is familiar with the management of all these departments of husbandry. But not one land owner in a thousand is giving proper attention to the growth of young timber, to supply the deficiency which is now becoming strongly felt.

Twenty-five years ago, wood could be bought standing, in well settled portions of western New-York, and elsewhere, for one York shilling per cord—where now it would sell readily for at least twenty times as much. An estimate was made some years ago, that at the present rate of clearing, all the valuable timber trees east of the Mississippi, would be swept away within the next thirty years. It has been recently ascertained that the railroads of Ohio, consume annually twelve thousand acres of good wood-land, and in other states a similar amount is required. But all this is not equal to individual home consumption. A land owner who occupied a large house, pointed to a portion of his farm where one hundred acres had been cut in the last forty years for his own fuel. If there are three million farmers in the northern states, that commonly burn, wood, at the rate of twenty cords a year, they would clear off more than a million acres annually.

Where will all this present devastation land us? When our forests have gone, what shall we do for fencing—for timber for agricultural machines—

for railroad and other bridges—for the construction of canal boats, ships, and rail cars—and by no means least, for farm buildings and dwellings? Most obviously our only resource is to commence immediately the growth of young timber plantations.

We do not regret, as some do, to see the old forests melting away before the hand of civilization,—although the want of economy in the waste of wood is much to be regretted. We do not ask land owners to keep their old woods untouched. It does not pay. The owner of a forty acre wood lot refused, many years ago, an offer of forty dollars per acre; he sold it afterwards for one hundred dollars per acre—but this increase in price did not pay the interest and taxes in the interim. It is not advisable, therefore, to keep a large amount of dead capital in the shape of the original forests. A brief estimate will show that this is far less profitable, than to raise new timber and cut it away at a suitable age. By counting the annual rings in our forest trees, we find them to average mostly from one to two hundred years old, and to yield about fifty cords per acre. Calling the average period one hundred and fifty years, three years are required to grow a cord of wood. On similar land, occupied with well managed young timber, and cut once in about twenty years, an average amount of not less than two cords annually may be obtained—a product six times as great as to allow the trees a century and a half in growing. To cut only the old decaying trees out of the forest would yield a still less return. The best way, therefore, unquestionably is not the assiduous preservation of our old wood-lands, but a general and extensive planting of new timber.

There are other reasons why more attention should be given to the raising of forest trees. The face of the country is becoming denuded, and wintry winds and summer storms sweep our farms with more fury than formerly. Young plants of grass and winter grain, after heaving by frost, are beaten about and sometimes torn out by the action of the winds upon them. Grain crops and meadows are prostrated by tempests. Land owners who have planted belts of evergreens, have found that the protection they afford in this respect, has amounted on an average, to an increase in the crops raised within the range of their shelter, of about fifty per cent. more than where fully exposed. Belts of timber, therefore, traversing farms fully exposed to the winds, are profitable in two ways. First, by the increased amount of crops; and secondly, by the timber perpetually furnished by these belts. They should be placed at intervals of 60 to 80 rods. Where rising land faces prevailing winds, they should be nearer; but when the land falls, they may be more remote. The breadth of the belts, if evergreen, may be one or two rods wide; if deciduous, four or five rods. When cut one half in breadth may be taken at a time. (Fig. 1.) On small farms, one single belt, of such a width as may afford the necessary wood for use, judiciously located to protect the farm, may be sufficient; on large ones, they should be at regular intervals. In many cases, the borders of a gully or stream may

be selected as the place for the woods, where the wet or broken land would be of comparatively little value.

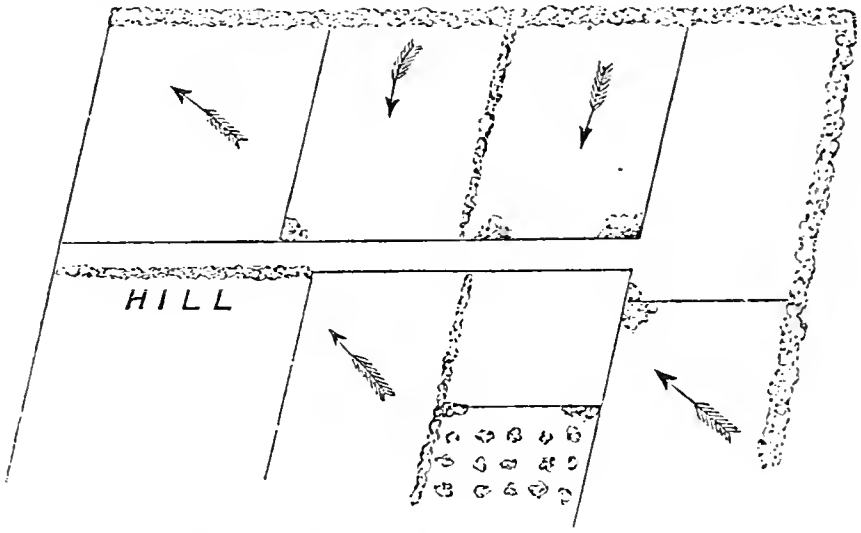


Fig. 1.—*Farm with Timber Screens—Arrows show the directions of two prevailing winds—the narrow screens are evergreens.*

The breadth of land thus protected will of course depend on the height of the trees. By leaving strips of the original forest, 70 or 80 feet high, the intervals may be double or triple the width required for young belts which have not attained a height of more than 20 or 30 feet. For this reason it may be best to plant them nearer together, and afterwards to remove alternate ones for timber.

By selecting thrifty growers, such as the Norway Spruce, (evergreen,) and the Scotch Larch, (deciduous,) a growth 25 to 30 feet high will be reached in about ten years, if they are properly cultivated; and fifty feet in twenty-five years. If planted closely, they spread less, and shoot up higher than if thin and spreading.

There are two distinct modes for the commencement and growth of timber plantations. One is the employment of the natural or spontaneous growth, springing up where old woods are cut off—either in the form of suckers, or young seedlings. The value of the future plantation depends much on the character and denseness of this young growth. To secure a good start the old trees should be entirely cleared away, and not as is often the case, merely thinned out, leaving the middle growth standing. For a few scattered trees will shade and greatly retard every thing below them. Every farmer is aware that no farm crop can thrive or become productive, if under the shade of thin woods. Young trees require the same advantages of air and sunshine as Indian corn; shaded trees are, therefore, found to grow only one-fourth or one-fifth as fast as those under a full exposure.

The young plantation having been started a few years, (cattle of course carefully excluded from it,) the first care needed is *thinning*. This is found to be as essential as the thinning of turnips, beets and carrots to the gar-

dener. If not attended to, the trees will crowd and enfeeble each other—many will be overshadowed and stunted—others will decay and die—and those which grow, will be irregular in form, (fig. 3.) and less valuable than the same number of trees where regular thinning has been practiced, and where the consequent growth is straight, thrifty and uniform. (Fig. 4.) The first thinning may be done when the trees are about large enough for hoop poles. The more feeble and crooked trees should be cut out, leaving the best and straightest as nearly at uniform distances as may be practicable. (Fig. 5.) The thinnings will usually much more than pay the labor; and if the young plantation happens to be a fine one, the hoop poles will more than pay the interest on the land. The first thinning may be at distances of about four and five feet; but should never be so severe that the shade and covering of fallen leaves will not entirely prevent the growth of grass—the leaves forming a mulch that protects the roots of the young trees, and pushes forward the timber. As the size increases, other and successive thinnings will be necessary. If the spaces are left nearly in straight lines, in one direction, (fig. 5.) they will allow the free passage of wagons for drawing out the cut trees. Various rules have been given for the distances in thinning; some have claimed that the distance asunder should be one-half the height

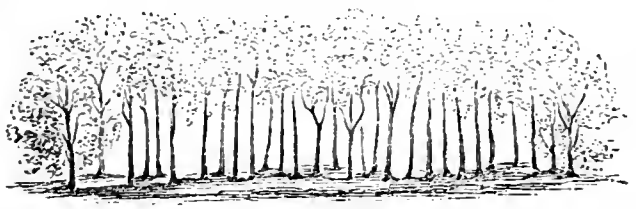


Fig. 2.—*The exterior of woodlands should not be trimmed to prevent winds sweeping through.*

Fig. 3.—*Unthinned plantations.*

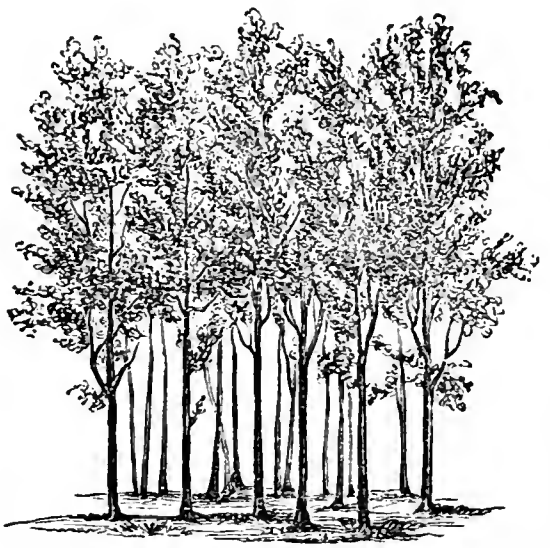


Fig. 4.—*Thinned plantations.*

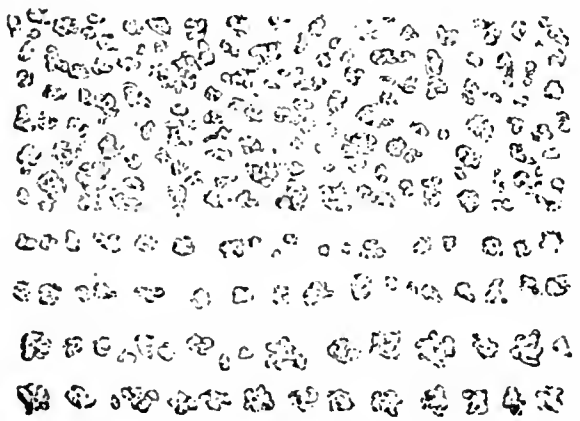


Fig. 5.—*Mode of thinning out natural plantations in rows.*

of deciduous trees, and one-third for evergreens. This is evidently allowing too much space, unless it be when the trees are very young, and are soon expected to double or triple their height. If too much sunlight is let in, it will cover the trunks with side branches, and render the timber knotty. (Figs. 6 and 7.) If the trees stand thickly together, they will run up tall and slender, and the trunks be nearly clear of knots; but if too numerous, they will retard each other, and yield a smaller product per acre. L. Bartlett, of New Hampshire, informed the writer of this article, some years ago, that he thinned out part of a piece of young wood-land, then 25 years old—the trees being seven or eight inches in diameter, and probably 40 feet high. This was all the thinning the plantation ever received; yet twenty-five years subsequently the thin portion was estimated at 33 per cent. more in value than the neglected part, and he had no doubt that if the thinning had been continued, the timber thus obtained, would more than have paid the interest and taxes. The land was worth at first but ten dollars per acre—the owner had lately refused one hundred dollars per acre.

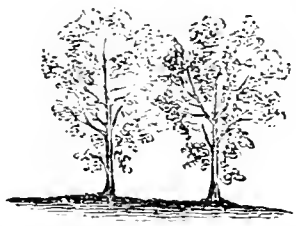


Fig. 6.—*Plantations too thin, limbed down the trunks.*

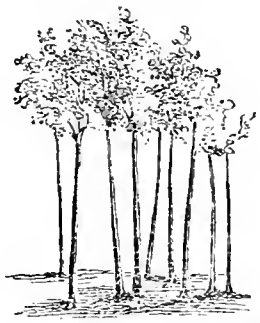


Fig. 7.—*Thick plantations have no limbs on the trunks.*

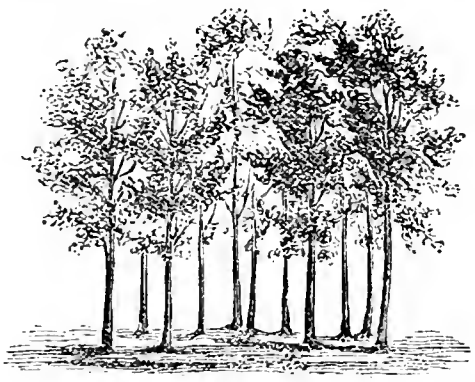


Fig. 8.—*Plantation of deciduous trees.*

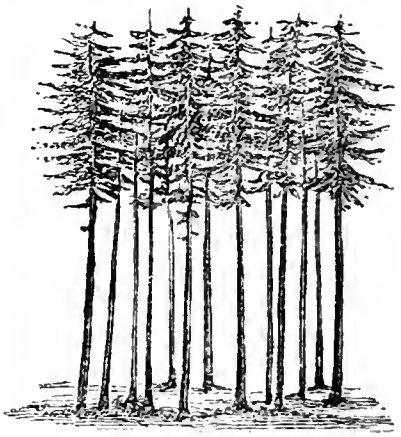


Fig. 9.—*Plantation of evergreen trees.*

Artificial Plantations.—Seeds are sometimes sown successfully on newly cleared lands, the surface of which has been burnt over. This mode is attended with considerable uncertainty, and there is a liability that large vacant spots will be left. When it succeeds well the plantation should receive precisely the same treatment, as already described for a natural or spontaneous growth.

Besides this mode, there are two others—one, planting of the seeds in rows or "hills" where the trees are to remain; and the other, the trans-

planting of trees like a young orchard, but more closely together. Where the *seeds* are planted in rows or lines, it should be done on cultivated soil, and the young plants should be subjected to good cultivation for a few years. They may be planted like the hills of corn, at distances of four or five feet each way, and kept clean by horse cultivation. A number of seeds should be planted in each hill, and only two or three left, after the first year or two, by pulling up the weakest and most crooked. When as large as hoop poles, all should be cut away but one in each hill; and farther thinning may be done when they become as large as rails. During this period, they should be allowed to stand so near together, that the shade and the falling leaves may prevent the grass from growing. The only cultivation needed will be for the first few years, until sufficient shade is produced.

Another mode is to plant the seed in alternate rows, and alternate hills with corn or roots. A difficulty here arises. The seed of nearly all forest trees should be planted very early in spring, while the corn or root crop is planted several weeks later. To obviate this difficulty, the ground should be plowed in autumn, and the seed planted very early in spring, in rows eight or twelve feet apart, the plowing for the corn being done afterwards between these rows. The cultivation of all can be performed together; and other crops, such as potatoes, turnips and beans, occupy the space between the rows for a few years.

The former of these two methods is undoubtedly the best. The unimpeded cultivation which the young trees may receive, will cause them to grow with great rapidity, and where young timber is valuable (and it is likely to become so every where,) the profits will be large.

One prominent advantage in planting thus in rows, beside that of a regular and even, and consequently heavy product, is the facility with which wagons may pass between the rows for drawing out the timber—an advantage which will be well appreciated by those who know how difficult it is to drive a loaded wagon through the crooked paths in irregular woods.

Transplanting.—This mode is extensively adopted in Britain and other parts of Europe. The trees are raised in seed beds, removed to nursery rows, and afterwards set out in the plantations. They do not usually receive cultivation, and consequently do not grow fast at first. But being placed near together, or within four or five feet of each other, the surface is soon shaded and mulched, and the progress of the young trees is then more rapid. To assist in this result, fast growing trees of less value, are intermixed with slower growers, which produce the best timber. These fast growers, of which the larch is the most commonly used, are thinned or cut out in time to give the others a free chance. To prevent too great a check by removal, the young trees should not be more than three or four feet high when set out.

The best mode of placing the trees in these artificial plantations is in the form of the quincunx, or more properly the hexagonal mode, as shown in

fig. 10. Each tree stands at an equal distance from six others around it. They are thus more evenly distributed over the surface, and present a finer picturesque appearance on hillsides, than if distributed at right angles.

Fig. 10.—*Quincunx planting.*

Dry Seed a cause of failure in planting.—We often hear the remark made, "we have planted plenty of seed, but none of it has come up." This failure arises from the shell or outer coating of the seed becoming dry and hard before it is planted. The moisture cannot penetrate this dry shell, nor the swelling germ burst it open. This is particularly the case with the chestnut. To insure success, the seed as soon as it drops from the tree, and before the surface has lost it moisture, should be packed in moist mold or damp moss, until the time for planting. By observing this treatment towards all seeds of a similar character, perfect success will be the result, in connection with proper management in planting. The depth should vary with the size of the seed. Chestnuts may be planted nearly two inches deep—smaller seeds a correspondingly less depth. The common Locust (Robinia pseud-acacia,) will never germinate if the well ripened seeds are planted in the usual manner. They are hard and horny, and moisture at common temperatures will not penetrate them. The proper treatment is to pour boiling water on a pint or so at a time, and let it cool and stand several hours. A part of the seed will be found much swollen, and if now selected and planted, will readily vegetate. The remainder is to be treated again in the same manner, and so on till all the seeds are swollen. A sieve of the right degree of fineness will easily separate the swollen and unaffected seeds.

The product and value of artificial wood-lands.—Plantations of wood, raised in the manner already described, will be of much greater value than wild forests of a similar age. The most valuable species may be planted; or, if a young natural growth is selected, the best kinds and straightest trees are reserved at each successive thinning. The even distribution of the trees contributes to a heavier growth. Repeated experiments have shown that on poor lands a product may be obtained from well managed natural plantations, equivalent to one cord per acre annually; and on good land two cords yearly may be relied on. The period for clearing off in these instances varies from eighteen to twenty-five years. Artificial plantations set in rows with perfect regularity, and cultivated for a few years, at first would undoubtedly do quite as well or better, while the advantage of selecting the kind of trees most valuable in market, would be an important one. Take for example the common locust, single posts of which sell in many places for one dollar

each. Allowing the moderate estimate of one cord annually, and allowing fifty posts per cord, we should have a yearly result of fifty dollars for each acre. If the locust timber were worth only one-half this amount. it would afford a handsome interest on the cost of most of our country lands.

We close these remarks by a quotation from an excellent article on this subject, by Gov. HOLBROOK, of Vermont, published many years ago in THE CULTIVATOR, and which is worthy of again placing before our readers :—

Ten years ago, I cut the wood off a long stretch of side-hill, and in my inexperience, burnt over a portion of it for pasturage. The remainder was left to grow up again to wood. Many of the young trees are 6 to 8 inches through ; they are all very straight and thrifty, and I value one acre of this land more than five acres of that which is in pasture. I shall not again permanently clear up my steep hill-sides.

At the solicitation of a railroad friend, a short time since, I accompanied him into the country directly south of this, to examine and estimate the value of some "wood-lots." I was forcibly struck with the amount of rugged, barren land, inaccessible for agricultural purposes, which had been thrown into open country, even by the present owners. Had a second growth of wood been permitted to run up on the land, instead of subjecting it to the burning and cropping process, it would have been now worth far more to the owners ;—for a railroad is tapping that country, with its large and clamorous demands for wood and timber. Riding along with an old inhabitant of one of the towns visited, he pointed out a wood-lot which was cut over twenty years since, and suffered to grow up again to wood, contrary to the usual custom. It was sold at auction, a short time since, for $3,400. It would not have brought over $800, had it been in pasture from the time it was cleared.

Warm hill-sides, having an eastern or southern slope, send up a second growth of wood with great rapidity. Although they may not eventually, support so heavy a growth as strong level land, they will yet produce all the wood they are capable of sustaining, much sooner. A friend directed my attention the other day, to a tract of land, with an eastern slope, in a neighboring town, which was cleared of an original growth of wood, twenty-five years ago, and left to itself to produce another growth from the sprout. The land, with its present standing wood, was appraised a year or two since, at $50 an acre. Ten dollars an acre, is all that similar land, in pasture, in that vicinity, has ever been worth. By the application of a little arithmetic then, we find that the increase of this second growth of wood has been equal to 16 per cent. interest, per annum, on the worth of the land, without a dollar's expense for the cultivation,—that is, $10, at 16 per cent. simple interest, for 25 years, amounts to $40 ; to which add the principal, the worth of the land, and we have $50, the appraised present value per acre.

Several successful attempts have been made within my observation, in improving rugged and exhausted lands by planting them out to trees. Within

sight while writing, is a knoll that has been completely renovated by a plantation of the white locust. It was originally, a coarse worthless gravel, barren of herbage of any kind. I remember that the proprietor was laughed at by his neighbors for attempting to grow trees on his barren gravel. The locusts got root however, and although their growth was slow and feeble, they gradually formed a soil by the annual shedding of their leaves; and as the soil became thus strengthened, their growth became more vigorous, new shoots sprang up in all directions from the roots; and after awhile, clover and other grasses, began to appear on the open ground. I have been curious to observe the gradual improvement of this land. Last summer I noticed that the grass was very luxuriant, and would have yielded at the rate of a ton or more of hay to the acre, in the open spots. The locust wonderfully endows a poor soil with new energy and fertility. It seems to make its demands for nourishment more largely upon the atmosphere than any other tree, and gains foothold in soils absolutely barren of fertility. Then again, its leaves are small, with very rough edges, lying perfectly still where they fall, while those of most other trees are blown about by the winds, collecting in hollows or in large heaps.

In my notice of Mr. Rice's farming, last year, I remarked that he plowed up a large tract of unproductive hill-side, several years ago, and planted it with chestnuts. in rows four feet apart every way. The first sprouts coming up rather crooked and scrubby, he went over the field and cut them down close to the ground, which caused new sprouts to shoot up straight and vigorous. The trees are very thrifty, completely shade the ground, and grow more and more rapidly as the soil becomes strengthened by the annual deposit of leaves. So well satisfied is he with the experiment, that he is now placing other worthless lands in a similar course of improvement.

The late Hon. John Lowell, the first and most zealous advocate for improvements of this kind in New-England, planted three acres of waste land on his estate at Roxbury, Mass., to a variety of forest trees,—the whole value of the land not being $10 per annum.

In a communication upon the subject, he says, "The land was about half of it plowed and kept open with potatoes for two years, and then abandoned to the course of nature. The pines were taken up out of the forest with great care, not more than five feet high. Wherever I had the cupidity or impatience to introduce a larger tree, I either lost it or it became sickly. In some places I planted acorns, and as to my hard-wood forest trees, transplanted from the woods, finding they looked feeble and sickly when they shot out, I instantly sawed them off at the ground or near it. This required some resolution, but I have been abundantly paid for it.

"The result of this experiment is this, that in a period of from thirteen to fifteen years, I have raised a young, beautiful and thrifty plantation, comprising almost every variety of tree, which we have in Massachusetts, which are now from twenty-five to thirty-five feet high, and some of which, the

thriftiest white pines, actually measure from nine to twelve inches in diameter. The loppings and thinnings out of these trees, now furnish abundance of light fuel for summer use, and upon as accurate a calculation as I am able to make, I am convinced that the present growth, cut down at the expiration of 14 years from the time of planting, would amply pay for the land at the price it would have brought."

MUTTON SHEEP.

The breeds of sheep existing in Great Britain from a remote period, and developed with the advancement of its agriculture by the skill of later flock-masters, are familiarly known among us as "Mutton Sheep," in contra-distinction from the various families of the *Merino,* which is primarily a Wool-producing animal. Thus, throughout the civilized world, there are few regions at the present day, to which either English sheep or Spanish sheep have not been carried, according as circumstances rendered the production of meat on the one hand, or of wool on the other, a leading consideration; and both by the perpetuation of these two great families unmixed, and by the intermingling of their blood with that of the sheep common in their new homes, the flocks of both hemispheres have been modified, and the demands of the great family of man, for articles of daily use in food and raiment, have from these sources derived a fuller and better supply than ever before.

Mutton Sheep as Compared with Fine Wooled Sheep.

The Spanish sheep, as they serve the purpose better where the fleece alone possesses a marketable value, have been the more widely disseminated of the two. Where population is sparse and land unlimited, as in Texas, California, South America and Australia, their claims are unrivaled. And in countries more densely populated, where meat is less common as an article of

diet, and where the finest fabrics are largely manufactured to meet the wants of a luxurious aristocratic class, as well as for exportation to other countries, they also receive the lion's share of attention.

The English sheep, native to, and improved to their present degree of excellence in, a densely populated country, have found favor where an increased demand for mutton for popular use, and the higher farming of modern times, have rendered them both more directly profitable to the producer, and a more convenient adjunct in the culture and enrichment of his land.

But it is not to be forgotten, that while the primary excellence in each of these two great divisions of the race, lies in the direction above noted, the Merino is also a producer of mutton as well as of fleece, and the English sheep of wool as well as of meat. The flesh of the Merino, when bred for successive generations in a climate and on pasturage suitable for its development in size, and where the breeder has had in view this point of merit as well as that of wool, is such as to give it a claim upon the feeder on which some are disposed to place considerable stress at the present day. And at the same time, for many fabrics of the manufacturer, the wool of the English sheep takes a place which that of the Merino cannot supply; during the recent war we have seen the prices of long wools quite on a par at times with those of the finest grades, and fashion, with her powerful control over the customs and tastes of men, is daily extending the popularity for common wear of cloths of loose texture and often quite shaggy appearance, in the production of which the Merino has no part nor lot.*

The diversities of American agriculture are so great, arising both from extent of territory and natural differences, as well as those springing from a varying relative proportion between the population and the surface under culture,—that both of these great families of sheep are advantageously kept,—in some localities the one wholly superseding the other, while in some the claims of both seem so nearly balanced, that the farmer is at loss on which side the scale of profit is more likely to turn. From what has been already said, it will seem natural enough that the Merino should have first entered in to possess the ground. We had far more land than population. Beef and pork had been so cheap, and the latter so much the stock article in the meat diet of a large part of our people, that the carcase of the sheep was little regarded as compared with its wool. At the same time we were importing largely of foreign manufactures, and the wise desire of strength-

*The introduction of the alpaca or llama wool from Peru into Great Britain, for the manufacture of those fine, light gossamer stuffs in so much demand for ladies' use, and the subsequent discovery that imitations of the llama fabrics can be successfully made from the long Cotswold, Kent and Lincoln wools,—have also done much to increase the selling value of the latter as compared with short and fine wools. The market for fabrics of the description referred to seems unlimited, and the quantity of this style of wool produced, may undoubtedly be largely increased without danger of diminishing its price.

ening this branch of industry at home, led to public encouragement in various ways of fine wooled flocks. But as our population has increased, as greater care is given to the domestic animals of the farm, and as the taste for more and better mutton has grown, a new order of things has been gradually establishing itself, and the farmers of the country are by degrees coming to understand and meet this changed condition of affairs, by increased attention to the English sheep, although more slowly we have sometimes thought, than might have been reasonably anticipated from the amount of information diffused during the last score or two of years on the subject, and the amount of attention it has seemed to attract.

"It has been proved," says Mr. SANFORD HOWARD, in a recent article on the subject, "that a given quantity of meat can be produced from the sheep at as little, and in some cases less expense than from any other animal, and so far as can be ascertained, the meat is fully equal in nutritive properties. Here, then, we have from the sheep at least an equal amount of meat, as compared with any other animal, for the food consumed, while we obtain the fleece as clear gain." In the same article one point is alluded to, which we desire particularly to note in these preliminary remarks, namely, that "wherever the object in keeping sheep is the profit which *mutton and wool combined* will afford,—the essential requisites of food and shelter being provided,—some of the English breeds will be preferred to the Merino."

This statement is supported by the results of experience in Great Britain. It is an error to suppose that there is anything in the climate of that country which is unfavorable to the Merino, or that the prejudices of the English farmer are so strong as to preclude its introduction, if in the matter of profit it could enter the lists against the native breeds. On the contrary "some years ago, great efforts were made to establish the breed in that country; but although these efforts were supported by all the influence of royalty,—George III, 'the farmer king,' taking the lead in the enterprise, the breed did not obtain a permanent standing, and a few specimens only, kept merely as curiosities, are now to be found." One great obstacle to its success, even if its flesh was considered equal by most consumers to that of the English breeds, is the longer period it requires in reaching maturity, and its entire lack of adaptedness for the production of early lambs.

THE LONG AND SHORT WOOLED ENGLISH BREEDS.

Having thus endeavored, in as few words as possible, to show by a rough outline, the position of the English or mutton-producing sheep as compared with the Spanish branch of the race, it is our purpose to allude briefly to the characteristics of the different breeds of Mutton Sheep, and to some points in their practical management.

The English breeds may be classified with sufficient accuracy for our present object, in two divisions, commonly known as the Middle [or Short] Wooled and the Long Wooled breeds. The type of the former is the South Down—

of the latter the Leicester. The prize list of the Royal Agricultural Society of England, at the Warwick Show, at which the writer was present in 1859, included indeed but four divisions, viz.; 1. Leicesters; 2. South Downs; 3. Long wooled Sheep not Leicesters; 4. Short wooled Sheep not South Downs. The third division in this enumeration was composed almost wholly of Cotswolds, with one or two entries of Lincolnshires, &c. The fourth included Oxford, Shropshire, Hampshire and "West Country" Downs. In this list we have the chief breeds accessible to the American farmer.

Taking, then, the South Downs and Leicesters as the representatives of the two divisions, we find that the improvement due to human skill—in the one to the labors of Ellman, Webb and their compeers, and in the other to those of such men as Bakewell, in former times, and Sanday in our own,—has reached a perfection of form, an earliness of maturity and a capacity for fattening, unexampled in the previous history of the race. While the South Down bears the palm as regards quality of meat, either for early lambs, or when fully matured as mutton, the Leicester requires a shorter time to secure the latter, and both have had ardent advocates according to varying local conditions. Both have been extensively used in bringing other breeds, respectively similar in general character, into better shape for the farmer's purposes. Thus just as the Downs of Oxfordshire and Hampshire have been modified and improved by South Down blood, so the Lincolns and Cheviots have been benefitted by an infusion of the Leicester. The greater fineness, the superior symmetry, the increased precociousness secured by artificial care, have been imparted to the coarser, larger and less compact natives of other districts, and they in turn have given more size, and in some cases more constitution, prolificness and general utility to the new cross. And through what they have thus indirectly accomplished, as well as in themselves alone, the South Downs and Leicesters have been the great improvers of English sheep.

How the English Farmer avails himself of the Pure Breeds.

To secure the highest development of a breed, whether of sheep or cattle or any other class of our domestic animals, there must be a sort of division of labor between those whose efforts are devoted exclusively to their improvement, and whose returns are derived from the sale or letting of the perfected animal, instead of the marketing of its merchantable products, on the one hand,—and, on the other, the practical farmer whose main business is with the latter, and for whose interest it is to avail himself in the most direct and least expensive manner of the improvements within his reach. As this article is intended for farmers rather than breeders, we need not pause to consider the principles on which the processes of the latter are based, but, taking the existence of improved flocks as they stand, show in what way they are made of immediate benefit to the agriculturist. Of course it is quite possible that a select breeding flock should be maintained by the same individual,

who also raises or feeds more or less animals for the butcher, but even then the two are quite distinct branches of farming.

Now in England, this has come to be so thoroughly understood, and the advantages of improved blood so universally recognized, that the best farmers almost invariably secure a well-bred male to put with the common ewes in raising either lambs or wethers for the market. "That sheep is the cheapest," says Mr. Henry Woods, in a recent lecture before the Wayland, Norfolk, Agricultural Association, "which will produce you the lamb that will pay the most money, whether you sell it or whether you graze it." After pointing out that the ewes to raise cross-breds from, should themselves be selected with greater care—a point on which there is more room for the exercise of judgment in England than here, owing to the better supply from which to make selections, he adds: "I am one of those who fancy that it is not ill-spent money to give an extra £5 for a ram." Without attempting to decide between the several breeds from which the ram may be selected, he gives his opinion as to the prominent points to be regarded in one to be used with short wooled ewes for raising cross-bred lambs, in the following language, which we venture slightly to condense:

"I have an idea that he ought to possess merits peculiar to himself; that is to say, he ought to have a good masculine countenance; he ought to have his neck neither too long nor too short, and placed upon his body as though it formed part and parcel of him. His breast ought to be well thrown out in front, and wide and expansive between his fore legs. There is one thing which is too often lost sight of in many pure breeds of sheep,—that is, the important point of the shoulders, so constructed as to have the right power of locomotion—not placed upon the body as though they were pieces of waxwork stuck on after the body had got cold. If we get the shoulders right, I like to have wide and expanded loins. I like the tail placed well upon the rump, and well surrounded with mutton; the backbone should be straight, but better a little arched than the other way. I like to see what I call 'legs of mutton,' deep, full and weighty. I do not want to see a ram too long upon the legs. A great and important point is that the wool is of the right character, and plenty of it; and that you get a skin not blue, but of that nice cherry hue, that every farmer acquainted with breeding, knows must propagate good stock and stock which will graze."

Making a Beginning.

One object with which we introduce the foregoing quotation, is to illustrate the fact that the best farmer is he whose judgment and experience enable him to decide in his own mind upon an ideal of the animal which will best suit the requirements of his farm, and the purposes for which it is to be bred; and then to select, with regard to quality, rather than price, from some established breed, the individual which, apart from the name or reputation of the breed, most nearly meets his own design. Comparatively very

few farmers, however, in this country, have had a sufficient opportunity of practice or observation with sheep, to do this entirely for themselves; and for these the only course is to form an opinion from the published descriptions of the various breeds, and then by prudent trials work their own way to a satisfactory result.

For the purpose of enabling the farmer to proceed less expensively, and perhaps more cautiously in this direction, the introduction here of the English practice of *hiring the use of pure-bred rams* by the season, is much to be desired. But the prices at which they can be *purchased* are not yet high, and it ought to be considered that even $50 expended for a well bred sire is reasonably sure to be returned in his first crop of lambs. There are three of the more important objects, either of which may be held especially in view by those engaged with Mutton Sheep:

I. The Raising of Market Lambs.

II. The Production of Wethers, &c. for Feeding.

III. The Feeding of Mutton Sheep for the Butcher.

I. Butchers' Lambs.—In the vicinity of good markets, there is perhaps no department of farming which offers, when judiciously managed, greater inducements than this. The general system employed is to purchase, from drovers or otherwise, common ewes, with care to obtain those not already in lamb. In ordinary seasons they may be had at a cost not to exceed $3 each, in early autumn. As already stated, a South Down ram is perhaps preferable to cross upon them. A vignette representing the head of a fine specimen of this breed, will be found at the commencement of this article, (p. 265,) from a sketch taken by Page, for the purpose, from the flock of Mr. Thorne of Duchess county.

In visiting Monmouth county, New Jersey, two or three years since, where some of the best South Down blood in the country has been introduced by Mr. Taylor of Holmdel, we found the production of butchers' lambs an important branch of farming. Mr. T. was led to his present position as a breeder, solely from his desire as a farmer to derive the most profit from this source, and in 1848 began experimenting with South Downs for the sake of obtaining the greater size and earlier maturity of their progeny. Not only are these points secured to the advantage of the breeder, but the purchaser finds a larger profit after paying a higher price, arising partly from the reputation of South Down lamb with his best customers, but also from the actually reduced proportion of offal, upon a given live weight, in comparison with other breeds of an equal or greater size. The experience of Mr. T. and his neighbors had shown, as prices ran before the war, that from six to seven dollars advance upon each ewe purchased in accordance with the above system, may be expected—say, perhaps, $4.50 for the lamb, $1 for advance on the ewe, and $1 for its wool. The best farmers feed the ewes for about three months, say with a half-pint daily of corn meal, together with their hay or cornstalks, but there are many who think good clover hay is quite

is quite sufficient without the meal. Some allow the lambs also to get at the meal, but the quantity they take when so young is not very great. They go out to grass, as soon as it furnishes a good bite, and are sold when the lambs are from 10 to 15 weeks old. The earliest lambs from a South Down cross will dress perhaps 50 to 55 lbs., but those sold at full three months old or over, ought to reach about 70 lbs. Lambs and ewes are sold together during the early summer, and before pasturage begins to be short; after which something of an interval may elapse before ewes are again purchased for the succeeding year. As to the figures above given, it may be added that the prices current during the last two or three seasons would probably add a considerable per centage to the return obtained, but we prefer to give the more moderate calculation based upon the values of preceding years.

This branch of farming is extensively followed in several counties bordering on the Hudson river, either alone or in connection with the raising of sheep and fattening of wethers.

II. The Production of Wethers.—Under this head we refer particularly to the raising and treatment of sheep destined to supply the market with mutton, leaving the consideration of *fattening* those raised by others, and purchased by the feeder, for the third point. As to the breeds to be selected we may give the following facts:

The writer of a prize essay published in the Country Gentleman of 1865, states that extra fed sheep of the several breeds have been recorded as producing the subjoined weights of dressed meat and washed wool:—"Lincolns, carcass 350 lbs., fleece 28 lbs.; Cotswolds, 320 and 26; Leicesters, 250 and 22; Dorsets, 240 and 20; Oxford Downs, 240 and 18; Shropshire Downs, 220 and 16; Hampshire Downs, 200 and 12; South Downs 160 and 10. There have been individual cases of heavier weights, but not many." The first four of these breeds it will be seen belong to the "Long Wooled" division of Mutton Sheep, and the last four to the short or "Middle Wooled" division.

We condense from the same writer the following facts derived from the management of those who maintain flocks of their own, only buying or hiring rams from time to time, selling annually their wether sheep and cull ewes, and taking all the yearling ewes that are good into the flock in regular course. The system here described although applying generally to the Long wooled sheep, is mainly the result of experience with the Cotswolds.

"Cotswold ewes," says Mr. Gardner, "are put to the ram about the latter end of September, and being good breeders will nearly all be in yean within one month; in fact it is customary to allow but a month, which brings them all to have their lambs conveniently together; it also weeds out bad breeders, for go on raising from females difficult to get with young, and when their progeny comes round the mischief will increase; whereas I have over and over proved that not one per cent. will miss the ram, and not one per cent. will die, if none but good breeders, and none but healthy ewes are bred from. Lambs are weaned about the latter end of June, and put to tur-

nips by the last of August, where they remain eating them on the land where grown, by having just as much ground given them daily as they will clear of turnips, consuming them at first, while young and tender, by eating off the tops and upper part of the bottoms in the morning, and by having the remainder of the bottoms pecked up with a small pecker for the purpose in the afternoon; but as the season advances, and the turnips get tougher, they are pulled, thrown in heaps, cut with a machine, and given in troughs three times per day; and should the tops, as is often the case, cause too much relaxation of the bowels, they are carted away and given to other kinds of stock. These turnips are used in this way till Swedes take their place, it being contrived for the former to last till about Christmas, when the latter, being much more fattening and forcing in severe weather, they are, as stated, substituted—having been previously put in heaps and covered with earth, and then used by opening as wanted, and cutting with the machine. By having a small quantity of hay given twice per day, these tegs, as they are now termed, will thrive very fast, and by good common attention and a little grain or other stimulant once per day in addition, I have known Cotswold tegs to weigh at one year old, 35 pounds per quarter of dressed mutton—not one or two only, but forty together. The ewe tegs are called theaves after they are shorn, holding that name till they have borne their first lamb and have lost their second fleece, when they are two-shear ewes, and are considered in their prime; they have one more lamb, and are sold either soon after the weaning of the second lamb for others to breed from another year, or are kept and made very heavy mutton at turnips the next winter. Thus the sales from a flock are annually half ewes and half wether tegs, and the wool from the whole. Though in all cases sheep should have only as much good food given them as they will clear up before they lie down, on no account should they stand waiting and *pining* for meals, as that is a check to growth and prosperity."

The accompanying vignette represents the head of a Cotswold ram, weighing over 400 lbs., shown at the Provincial Agricultural Society's Fair, at Hamilton, C. W., in the autumn of 1864, by F. W. Stone, Esq., of Guelph, from a sketch kindly furnished us by Page.

The author of another of the Country Gentleman prize essays on Mutton Sheep, was Mr. Jurian Winne of Albany county, whose experience has been mainly with the Leicesters, and whose directions are so full and explicit

that we shall quote them at considerable length. Mr. Winne, we may add, has been very successful both as a breeder and feeder, and we know of no one who can speak more directly from practical knowledge of the subject:

Selection of the Breeding Flock.—In selecting a flock of Long Wooled sheep, choose only nice straight even ewes, with a broad chest, a round barrel, broad across the hips, standing straight on their legs, &c. Let your ram also be perfect in all his parts—a small head, straight, and rather long ears, a lively, bright eye, broad across the shoulders and breast, straight and even across the back, round in the barrel, full in the hams, holding as near as possible the same width from shoulder to rump, and well wooled over and under, though not too close for mutton sheep.

If the flock is to be bred for mutton and wool only, it matters not much (for one cross, and *one cross only*) what the ewes are, provided they are not little Merinos; as I have had lambs that were dropped by small inferior ewes by a thorough-bred Leicester ram, able to compete, as far as weight and wool were concerned, with those from thorough-bred mothers. As illustrating this point, I recollect an instance in which I came into possession of a lamb got by my thorough-bred ram out of a small ewe, which, in good condition, would not weigh over 120 lbs., live weight; and this lamb, at one year old, sheared twelve pounds of clean, washed wool, and, at three years old, weighed 337 lbs., live weight, and dressed over 200 lbs. of mutton.

Management in Breeding.—The ewes should be in good feed for two or three weeks before putting the ram with them. Have the ram also in good thrifty order, feeding him for two or three weeks previously from one pint to one quart of oats, or oats and corn, or peas, per day. Tag the ewes, and do not leave the ram with them more than twelve hours out of the twenty-four. Keep both ram and ewes well through the winter by feeding not only hay, but also a few roots and a little grain if necessary every day.

Ticks.—Examine them and see if they have ticks, and if they have, get rid of them, for they will injure the sheep very much before spring, both in their wool and condition. If you have no better remedy, use a little Scotch snuff, or tobacco dust (which is much cheaper and just as effectual,) sprinkled in their wool—it will not injure them in any weather. If they have many, it will be necessary to repeat the sprinkling in two or three weeks, as then the progeny will have come out, and this will finish the insects for that winter.

Shelter, &c.—Treatment of Colds.—Have good sheds, with small yards attached for good weather, but do not allow them to get wet in cold weather under any circumstances, as one wetting to the skin, when it is cold, will reduce them more than you can replace by good feeding in two weeks. Give them plenty of clean bedding at least once a week, and oftener if necessary. Let them have access to pure water at all times, and have it, by all means, right in their yards. There should also be a box, with salt in one end of it, and salt and wood ashes in the other, in the yards, and *never suffered to get empty.* Feed occasionally a little browse, pine or hemlock; or, if this cannot easily be obtained, add a little rosin or nitre to their salt about once a fortnight. Smear their noses with tar at least three times in winter, and three times in summer—in summer immediately after shearing, as that will help to prevent their taking cold; about the first of August, as at that time, flies are very troublesome, and the tar will keep them away; and then again about the middle of October, which is about the time they should be tagged

and the ram put with them. In winter—when you bring them into the yards; again about the middle of January, and the third time, in March. And if any of them have foul noses at any time, put on the tar; and, if they have a cough, put some into their mouths also every few days, as this course of treatment, with me, soon results in cure.

Lambing Time.—Three or four weeks before lambing time, increase your grain and decrease your roots, as the latter in too large quantity, are apt to cause too large a flow of milk and injure the udder; while, with too little grain, the ewes are not strong enough at lambing. During the season of lambing, they should be watched very closely, and assisted a little—very carefully, however—if necessary. Be sure that the lamb nurses a little after an hour or two; and if the ewe, as is frequently the case with young mothers, is not disposed to let her lamb suckle, hold her a few times while the lamb is nursing, and this will generally remove all difficulty in the future. If lambs come in winter, the ewes should be in a dry, warm place, with plenty of clean litter.

Spring and Summer Treatment.—When the lambs are about four weeks old they are to be docked, and castrated if the latter is to be done at all, as at this age I never knew them to suffer in the least from the effects of it. Poor pasture and cold storms are ruinous to both sheep and lambs—therefore do not turn them out too early, and continue a little grain for ten or fifteen days after turning out, or until they have plenty of good pasturage. In summer they should have a field with plenty of running water, and a few shade trees if possible, and if it is a little hilly, so much the better. If the grass at any time scours either the sheep or lambs, tag them as soon as they are better of it, as such ones will sometimes get maggotty and die if neglected. About the middle of August wean the lambs, removing them as far as possible from their mothers, as both will quiet down much sooner if they cannot hear each other. The lambs should be put on the best feed attainable, and the ewes on the poorest; and, after a few days, examine the latter, and if their udders are hard or caked, milk them out and rub with a little sturgeon oil or arnica, either of which will not only soften the udder, but also dry up the milk. As soon as the ewes are all right in this respect put them on good feed again to recruit for winter.

Wintering the Lambs—Yearling Wethers.—Two or three wethers or dry ewes should be put with the lambs when they are weaned, to keep them tame; and, if the feed is not of first quality, give them daily a few oats, and the old ones will soon teach the lambs to eat the grain. About October 1st, separate the ram and ewe lambs, and keep them separate from that time until the next shearing, unless it is desired that the ewe lambs should breed, which I consider very bad policy, and never under any circumstances allow."

Continue feeding a little grain to the lambs all through the first winter, and until about shearing time, when it should be omitted altogether. After harvest such yearlings as are to be fattened the first winter may begin to receive a little grain; and I have found by experience that this is the most profitable time to prepare them for market, all things considered. When winter sets in, slowly increase the quantity until it reaches one quart per day for each sheep; and, with a good breed and good management, yearling wethers can be made, as I have repeatedly done, to weigh from 190 to 240 lbs. live weight, and dress from 100 to 140 lbs. of mutton before they reach two years old.

III. Feeding Mutton Sheep.—When the sheep to be fed are purchased, instead of being raised by the feeder, their proper selection becomes a matter of prime importance. The eye of the experienced feeder will go far in judging of the animal, but even this is sometimes at fault, and especially for those who have not had the advantage of long practice, other tests should not be overlooked. The sheep under examination should be handled as well as thoroughly scrutinized. And when they are purchased from droves, or at the live stock markets, with no knowledge of their previous treatment, there is danger lest the bad handling and harsh treatment they may have undergone, will require a long expenditure of food and care to bring them into good order for fattening kindly. The heavy sheep accustomed to shelter and little exercise, will not bear the hard driving, exposure, and crowding on the cars, to which they are often subjected, without great injury, even if they ever fully recover. And, as Mr. Winne's experience has shown, there is no mode of obtaining sheep to feed, as satisfactory and little open to risk of loss, as for the feeder himself to visit the breeders of whom he purchases, make his own selections at first hand, attend personally to their shipment home, and never lose sight of them until safely landed at their destination. If this task is entrusted to a third party, it should only be one upon whom the most entire dependance can be placed.

It is true that opportunities may often be had—indeed they must be the principal dependance, where personal selection as above recommended, is impracticable—of obtaining good sheep for feeding at the markets of our leading cities. There will sometimes be an overplus, and good animals which will well repay a month or two of careful treatment and liberal feeding, can be picked up by one near by, at really less than their actual value. Contiguity to such a market is an advantage of which those possessing it, seldom avail themselves as fully as they might. By establishing an understanding with the dealers, they may often be induced to notify a friend of the arrival of a good lot for purchase, and will then revert to the purchaser to replenish the supply when it happens to turn out short,—knowing, if his reputation as a feeder is good, that they may depend upon his yards for first-class mutton, and willing to give him the first chance when prices are taking an upward turn.

When the sheep reach the feeder's yards, Mr. Winne's recommendation, after resting them over night, is to smear their noses well with tar that they may throw off all cold or dust contracted during the journey. The purchase should then be properly sized, in lots according to size—say out of five hundred, one hundred of the largest and best to go upon the best of the fall pasture, and the hundred smallest and poorest for the lowest pasturage, when the remainder, which with proper care in purchasing, ought not to be very uneven, can be suited in lots to the other fields accessible. "Give them plenty of salt twice a week, and keep them on good pasture if possible, but if the pasturage gets short, as it frequently does by the first or middle of November, a little grain should be fed, beginning at the rate of one gill to each sheep per day of oats, or oats and corn, or peas, and increasing after the first week gradually up to one pint per day."

Having thus given them a start out of doors, the next thing is to get the yards and buildings in complete order for winter occupancy, instead of waiting till the snow has fallen, with the sheep standing and lying in it, and exposed to the storm for twenty-four hours or more, until the shelter is prepared. "If there is a saw mill near at hand," says Mr. W., "by hauling into the yards and stables four or five inches of sawdust, the stable floors will not only be saved, but the liquid manure from the sheep is also preserved, making a very valuable addition to the compost heap, especially for heavy land. As soon as the trees shed their foliage, rake and haul in on top of the sawdust, leaves to a depth of five or six inches more, and the two will together make plenty of bedding for at least four weeks, by stirring up the leaves a few times." A month's bedding may often thus be saved, which is a consideration when straw or other litter is scarce and high.

It is also well to take the feeding boxes out at leisure, and cleanse them by sprinkling the inside with slacked lime—thus removing all that greasy smell which there would otherwise be about them. Put them where needed, upside down, and when the snow comes, there will be nothing to do but turn them over, straighten them up, put in the feed, and let the sheep come. At least one tub or trough for water should be provided for each yard or shed, to be accessible to them at all hours of the day, and salt boxes, which Mr. W. thinks should contain salt at one end, and salt and wood ashes at the other, in the proportion of one part of ashes to two of salt.

Properly Regulating the Feed.—The following hints on this point are of considerable importance:

By feeding liberally with roots and not too much grain, during the first week at least, the change from green feed to dry will be less apt to affect the sheep. In feeding, unless a person can do it himself, which is very seldom the case, the feeder should be instructed with great care, how much grain is to go to each yard or stable according to the animals it contains. An overfeed at the commencement is almost sure to bring on the scours, and after they are over it will take at least two weeks' good feeding to put the sheep

back where they started from. My mode, to avoid mistakes, is to number my yards and stables, and count the sheep in each yard and stable—allowing to each sheep one-half pint of grain per day to start with, unless they have been fed grain previously, when I allow a little more. I then make out a schedule, thus: No. 1—60 sheep at one-half pint per day is 15 quarts, which divided in two feeds is 7½ quarts to a feed; so I write on the schedule "No. 1—60 sheep must have 7½ quarts at a feed morning and night"—No. 2 at the same rate according to number, and so on until I get them all. This paper is tacked up in the place where the feed is kept, and by going with the feeder a few times to show him and see that he makes no mistakes, if he is a good man he can do it as well as the farmer himself. As soon as the feed is to be increased, a new schedule is made out accordingly, and so on, until the sheep are fed one quart each per day, when I consider them on full feed, especially if the feed is corn, beans or oil meal, or a mixture of either. If oats or buckwheat compose part of their feed, they should have a little more.

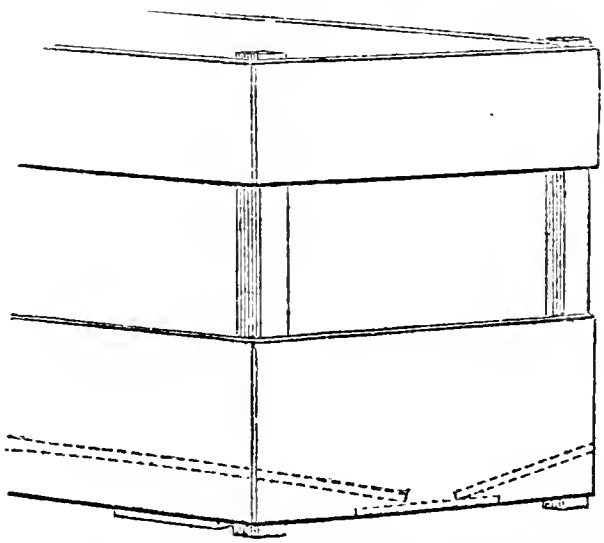
Regularity in Feeding.—Regularity of hours is very important. Sheep should not be fed one morning at five o'clock, the next at six, and the third at seven. The day I write, owing to the illness of one of the boys, I have had an example in point; on going out at five, a board was found off at the stable, and an end out of one of the feeding boxes. To replace these was a job of some time, and the grain only had been fed when the breakfast bell rang, leaving the sheep without their hay. I remarked to my man that this mishap would cost us "all the day's feed," which I verily believe to be the case. Our rule is this:

Grain and oil meal are fed at half-past five A. M. As soon as the grain is finished, hay is given—no more than the sheep will eat clean. The different yards and stables are carefully fed each day *in the same order*, which is important to avoid confusion and mistakes—beginning with No. 1, and so on through the list. After breakfast water is given, going around twice to see that all are well supplied. The roots are next cut (ruta bagas, which I consider best,) and of these to my present stock of about 350 sheep I am now feeding 10 bushels a day. At eleven o'clock straw is fed. Twelve is the dinner hour, and immediately after dinner the roots are fed. The troughs and tubs are now all examined, and replenished with water if necessary—also salt, salt and ashes, browse, litter, and anything else that may be needed, is supplied. The evening and next morning's feeds of grain and oil meal are next prepared, and hay got ready for both night and morning. At 4 P. M. feeding the grain is again commenced, followed as before by hay, after which the water tubs and troughs are emptied and turned over, and the work is finished for the night.

Avoid Disturbing the Sheep.—Never allow a stranger into the yards unless accompanied by the feeder, or some one familiar with the sheep. I have frequently known the approach of a stranger drive them pell-mell into and over their boxes, and the effects could plainly be seen with them for two or three days afterward.

The Stretches.—Should any of the sheep get the stretches, which they are apt to do when high fed, give a quid of tobacco half the size of a hen's egg, and if not relieved in twenty minutes, I give them a second dose, but nine times in ten the first dose cures. For stoppage in their water, I give one teaspoonful spirits nitre, with the same quantity spirits turpentine, in half a gill of luke-warm water.

Feeding Boxes.—The box for feeding used by Mr. Winne, is one that can be safely recommended for the purpose, although there are other kinds quite as likely to suit those who keep breeding flocks, or those of smaller sheep. It is simple, cheap, and easily filled and cleaned. Any boy who can saw a board and drive a nail or screw, can make one; all it requires is one scantling two by 3 inches, 15 feet long, and eight boards; it only has to be turned upside down and back again to clean it out, and as the feeder with his basket of grain or roots walks from one end to the other, scattering them along evenly in the box, twenty or twenty-five sheep according to size will follow in his rear and begin eating.—Moreover, there is a saving of hay, as they stand with their heads together working it into rather than out of the box, and Mr. W. thinks that in feeding 800 sheep last winter, 400 lbs. of hay would more than cover the entire quantity wasted and lost.



Description of the Feeding Box.—Feeding Box 12 or 14 ft. long, and 22 inches wide—the bottom slanting from both sides and resting on a board in the middle, forming a complete trough for grain or roots. The bottom side boards should be 11 or 12 inches wide—then a space left of 8 or 10 inches according to size of sheep—then the top boards, 8 inches wide—the ends and sides to match. Corner pieces of scantling in the inside, of hemlock or oak, as pine will not hold a nail or screw, the latter of which is preferable in putting them together.

Size of Sheds.—A shed 21 by 36 feet, with a narrow yard about eight feet wide on the southern side, will contain 75 good sized sheep. The open side should be provided with sliding boards to keep the sheep in when necessary. A board on the north side near the bottom may be hung on hinges to secure ventilation, and kept open except during very severe weather; for this is a most important point, and if properly attended to, the yard may be entirely dispensed with. We have seen at Mr. Winne's, 70 Leicesters thriving well in a lean-to 20 by 46 feet, with this provision of a ventilating board, and two trap doors of considerable size in the roof, opening and shutting at will. As to the space required by these sheep, ten superficial feet of shedding per head, may be regarded as about the proper room where a yard is at hand, or 12½ sq. ft. where there is no yard. To economize space, it is practicable to occupy a second story, if a bridge or inclined passage way can be conveniently provided—the sheep below having a yard, and those above, placed on a tight floor, securing sufficient air by the means here suggested. The average live weight of the sheep referred to in this calculation as to space, was about 150 lbs. per head.

Mr. PAGE has provided us with an illustration of the Leicester, which appears on page 275, from a ram in possession of SAMUEL CAMPBELL, of Oneida county.

Our limits will not admit of as full a description of the several breeds which have been referred to in the course of this article, as some readers might perhaps desire. Of the merits of either there is no doubt, and quite as much depends upon judicious selection, proper treatment, regular and well arranged feeding as to time, quantity, condition of the animal, &c., as upon the intrinsic characteristics of the breed chosen, provided only it be not glaringly out of place—bred or fed, for instance, where pasturage is so poor, other crops so light, and purchased food so expensive, that the cost of proper keeping outweighs all the profit obtained. No class of animals, when well kept, the manure husbanded and the soil enriched, will do so much to fertilize the farm.* Either of the Middle Wooled breeds, the South Down, or the Downs of Shropshire, Oxfordshire or Hampshire,—whichever is most readily accessible, of such excellence as to meet the ideal of the farmer proposing to buy, may be safely tested, if the preference is for the best mutton, not so great weight, delicious lamb, and the capacity possibly of greater exercise over the hills or upon shorter feed;—while on the other hand, if the Long Wools are preferred, with perhaps a still more rapid production of fat mutton, richer pastures and somewhat better protection, either Leicesters, Cotswolds or Lincolns, will not fail to give a good account of themselves in the end.

MUTTON SHEEP CROSSED WITH THE MERINO.

There is one point to which in conclusion we must allude, namely the fact that a cross may be successfully made between the English and Spanish breeds. The result is a larger frame and more meat with earlier maturity, on the latter, and a longer wool,—while the former receive something of the hardiness of the unforced Merino, will better withstand less careful treatment, and are made to yield a finer fleece, the price of which for Delaines and similar fabrics is often higher than that of any other wool in market. It is

* Mr. WINNE says: "As to the valne of sheep manure, and the effects resulting from its liberal application, I have never kept much other stock, and I may be permitted to add, that twenty-seven years ago, when I came on to this farm, I cut from about 60 acres of land the first year 25 tons of hay. Year before last I cut from precisely the same number of acres, 100 tons, and last year (a season of severe drouth) 90 tons. When I begun on the farm I had one barn 32 by 40 feet, which held all the crops it produced. I now have one barn 44 by 52 feet, 20 feet posts; one shed 21 by 36, 18 feet posts; one 21 by 24, 16 feet posts; one 30 by 72, 18 feet posts, and one barrack that will hold 17 tons of hay. Summer before last they were *all full*. Two rules I laid down, never to lose sight of, when I commenced farming for myself: 1. To deal honorably with mother Earth—that is, to plow well, harrow well, give her all the manure I could, and never sell my straw, but keep it all for the land,—and I assure you I could soon see an improvement. 2. Never to buy anything (except manure) I could possibly do without, until I had the money to pay for it—for manure, when it could be had, I was never afraid to run in debt. These two rules I have strictly adhered to, and must attribute much of my success to their benign influence."

not a cross that we should commend unless in exceptional cases, and yet we have known instances in which much satisfaction has been expressed in trying it for a series of years. It is certainly not a cross that should be perpetuated by continued breeding on both sides from inter-bred parents; it is sometimes found to be the case, between different breeds, that a *first cross* retains in a remarkable degree the merits of both, and yields a really valuable product, while to carry it farther results only in disappointment and degeneracy.

Mutton Sheep as Wool Producers.

The fleece of the English sheep differs from that of the Merino in the absence from it, to a great degree, of the yolk and oil which make up so large a proportion of the weight of the latter. As to the amount of clean wool actually produced, there can be little room to doubt that the English sheep will compare favorably with the Merinos. But as sheep are supposed to consume food in proportion to their weight, and as the smaller the sheep the greater the proportionate surface,—where the mutton is of little or no value, of course the Merino has the preference. There is a lack of comparative trials between the two, however, going to establish the relative amounts of flesh and of wool, which a certain quantity of food expended on each, will return to the farmer. Mr. Page provides us with a vignette, that we may have the head of the Merino side by side with those of the other breeds already represented,—from a ram in the flock of C. S. Sweet of Vermont. At the show of a State organization of Wool growers, held in Canandaigua, in the spring of 1865, a prize of $50 was offered for the fleece shorn on the grounds, which, after cleansing, should give the greatest weight of wool in proportion to time of growth and the live weight of the animal. Fourteen Merinos of different ages, and one yearling Cotswold ewe competed for this prize; and the committee having the trial in charge fulfilled their duties with the utmost caution, presenting in the end an elaborate report upon the result. According to the table accompanying this report, the Cotswold stood midway upon the list—seven Merinos somewhat exceeding it and seven others falling behind. The first seven Merinos averaged a production of 8 lbs. 3 oz. (within a small fraction,) for each 100 lbs. live

weight, per year; the Cotswold ewe, 7 lbs. 1½ oz., and the seven poorer Merinos, 6 lbs., 6¾ oz. But it may be fairly claimed that even this view of the case, although by no means an unfavorable one for the Cotswold, is in point of fact unjust—being at fault in comparing the product of wool with the animal's weight at the *time of shearing*, and not with its mean or *average weight* during the year while the fleece was growing. It was impracticable of course to ascertain the precise weights of the competing sheep at the commencement of the year, from which data the mean weight of the whole time could be calculated. And among the Merinos by themselves, which may possibly be assumed to have increased in weight in about the same ratio, perhaps the result would not have been materially changed if this had been done. But in comparison with the Cotswold, which so much more rapidly takes on flesh, it becomes unfair to assume that the weights of the animals were respectively the same during the whole year as they were at its conclusion. The two year old Merino ewe which took the prize, weighed 49 lbs., and as she can hardly have weighed less than 25 lbs. at the beginning of the year, her mean weight would have been 37 lbs., and on this basis her production of wool was at the rate of not quite 12¾ lbs. to 100 of live weight. The Cotswold on the other hand, probably weighed no more than 5½ lbs. one year before shearing, at which latter time its weight was 99½—giving a mean weight for the year of 52 lbs. and a production of wool of 14 lbs. to the hundred; an amount exceeding even that of the prize Spanish sheep.*

We should not enter into this question at such length, were it not so desirable to call the attention of our farmers to the importance of experiments testing with minute exactness the question, whether, comparing English sheep with Spanish sheep, the former do, or do not, yield in reality the better return of the two for the food consumed, both in mutton and wool. One thing is certain, that the latter produce many pounds of a substance possessing no money value whatever, which is separated from their wool in the process of cleansing—the average loss of weight in scouring the 14 Merino fleeces shorn at Canandaigua, having been a small fraction over 8 lbs. per head. This loss, on the Cotswold, was only 1 lb. 9½ oz.—making a difference of 6 lbs. 6⅞ oz. loss greater on the Merinos than on the Cotswold, and that of a material, which, like the fat within the body, is probably produced at a much larger expenditure for food, than an equal weight of any other part of the animal structure.† [L. H. T.]

* This calculation was first made by Mr. Jos. Harris of the Genesee Farmer, whose figures we copy.

† The relative cost of equal weights of fat, of muscular tissue and bony structure, in the animal, is something which we know of no experiments to determine, and theoretically the above statement may or may not be strictly accurate. But Dr. Voelcker has shown that although animals have the power of forming fat from the starch, sugar and gum they eat, still they obtain it most readily and abundantly from the oily matters in their food. Now food rich in oily matters, like grain and oil cake, being much more expensive than hay and other materials deficient in this respect, it is practically true that fat costs more than muscle. To which we may add the query, whether a Merino was ever known to shear a "brag fleece," to wit, one composed of 65 to 75 per cent. of "yolk," which had not been fed to its utmost capacity with rich food?

IMPLEMENTS OF HORTICULTURE.

Floral Rake, (fig. 1.)—This convenient little tool consists of a small six-tooth rake on one side and a hoe blade on the other. The handle is about fifteen inches in length, and it may be used with one hand while sitting on a stool at the flower bed. It is a very convenient tool for the use of ladies.

Fig. 1.—*Floral Rake.*

Garden Fork, (fig. 2.)—This is made of steel, and is used for loosening the earth in flower beds, and about the roots of plants. When the soil is sufficiently moist or adhesive, it answers a good purpose for transplanting annuals and small plants.

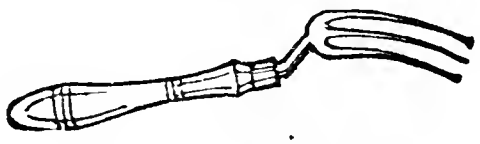
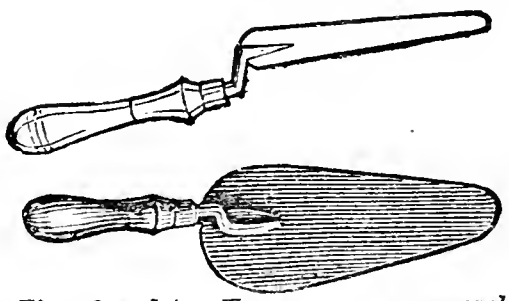


Fig. 2.—*Garden Fork.*

Transplanting Trowels, (figs. 3 and 4.)—These are made of various forms and sizes, for transplanting, weeding, loosening soil on a small scale, &c. The concave ones are most commonly used for transplanting, cutting out blocks of soil in a circular form, but the flat ones are best for working the soil.



Figs. 3 and 4.—*Transplanting Trowels.*

Vine Scissors, (fig. 5.)—A neat and convenient instrument for thinning out the berries from bunches of grapes which have grown too thick, for removing unnecessary shoots, leaves, &c., and for gathering the fruit.

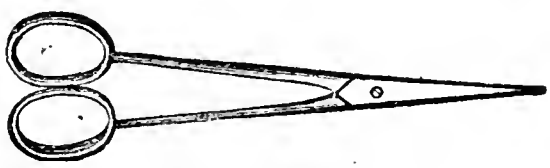


Fig. 5.—*Vine Scissors.*

Flower Gatherer, (fig. 6.)—This combines scissors with small pincers, and are not only useful in clipping the stalks of herbaceous flowers, but more especially so for roses and other plants furnished with spines and prickles. The scissors cut the stalk, and the pincers hold it till secured.

Fig. 6.—*Flower Gatherer.*

Shears for Edging, (fig. 7.)—These are particularly applicable to trimming the sides of box and other edging to walks and flower-beds,—the operator standing upright while using them, and resting the shears on the wheel, while he thrusts them onward in shearing.

Grafting Chisel, (fig. 8.)—This is one of the best forms of the grafting chisel, combining the knife and wedge. The wide cutting part is used for making the cleft in the stock—the pointed ends for opening the cleft to receive the scions.

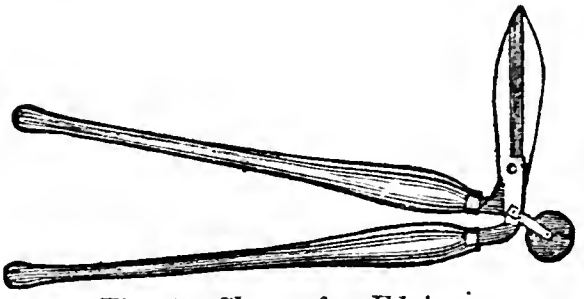


Fig. 7.—*Shears for Edging.*

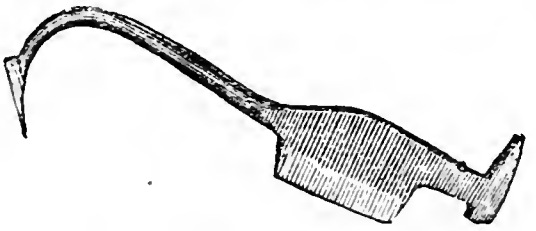


Fig. 8—*Grafting Chisel.*

Pruning and Budding Knives.—Fig. 9, is a very convenient knife for light pruning, sloping grafts, &c. Fig. 10, is the best form of the budding knife; the sharp edge of the blade being convex, allows the operator to make the upright slit in the bark, in places where it would be hard to reach it with a common pointed knife, and without scraping or injuring the young wood. Figs. 11 and 12 are strong knives for pruning, the former for ordinary work, and the latter for removing small limbs, stubbing down stocks, &c.

Fig. 9.

Fig.10.

Fig.11.

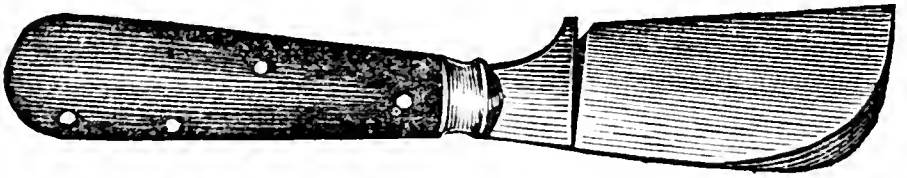
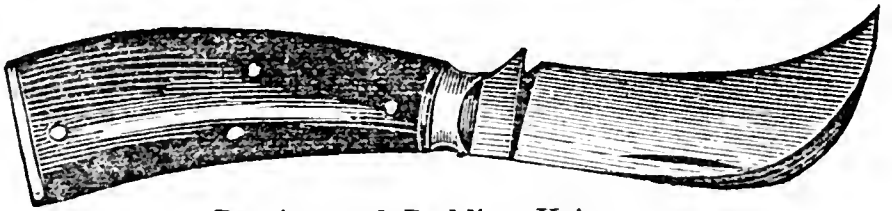


Fig.12.



Pruning and Budding Knives.

Tree Scraper, (fig. 13.)—This is used for removing the rough and shaggy bark, moss, &c., from old fruit trees. It consists of a triangular plate of steel, attached to a handle at the center. The sides of the triangle are about four inches, and the handle may be from one to several feet in length.

GARDEN SYRINGE, (fig. 14.)—This is made of various sizes, of different materials, and with different caps or orifices. The cheapest is made of thick sheet tin, and the best and most durable of brass. For throwing a single stream, the jet represented in the figure is attached; for washing dusty foliage with a soft shower, a rose with many fine holes is screwed on. The syringe is used for washing, watering, destroying insects, &c.

Fig. 13.—*Tree Scraper.*

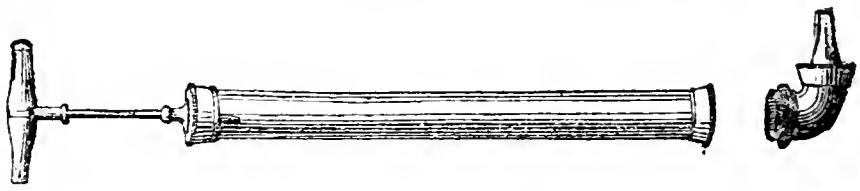


Fig. 14.—*Garden Syringe.*

GARDEN ENGINE, (fig. 15.)—This may be used for all the purposes of a syringe, in washing and watering plants, and also for washing windows, carriages, and protecting buildings against fire. It will hold about a barrel of water, and is easily moved by its handles on the cast-iron wheels. It will throw water 40 feet high.

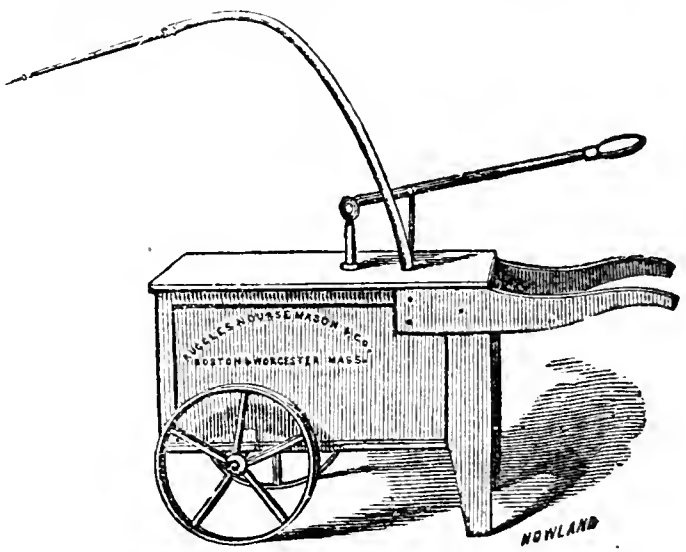


Fig. 15.—*Garden Engine.*

WHEEL BARROWS are of two kinds; fig. 16, is the simpler or canal barrow, used for wheeling earth, stones, and manure, and is emptied by tipping it on its side; and fig. 17, is the larger or box barrow, the side boards of which may be removed for unloading, or for receiving larger articles than would enter the box.

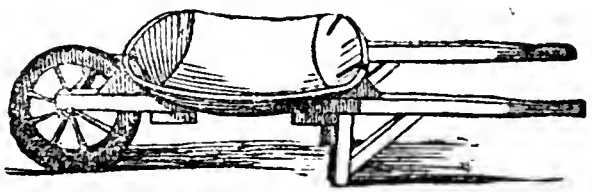


Fig. 16.

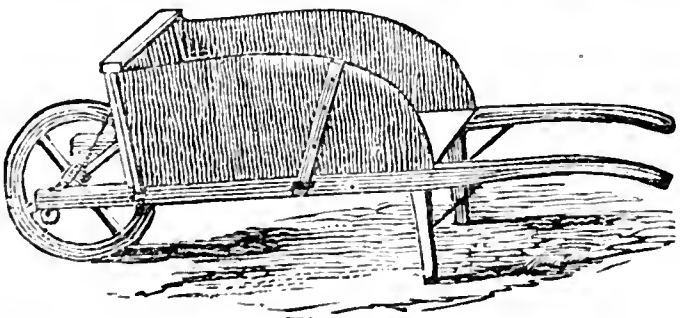


Fig. 17.

GARDEN REEL.—Fig. 18 represents the reel for the garden line, and stake for stretching the same, all made of iron. The stakes should

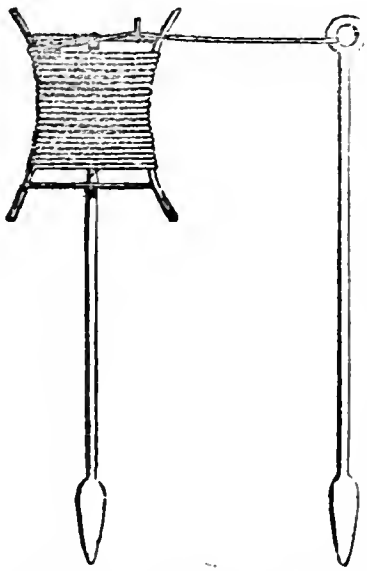


Fig. 18.—*Garden Reel.*

be at least a foot long. The line should be a strong well twisted hemp cord, about one-fifth of an inch in diameter, which, when not in use, is quickly wound up on the reel.

Seed Sower, (fig. 19.)—This is designed for sowing the seeds of various garden crops, opening the soil, dropping the seed, covering, and rolling, all at one operation. It lessons the labor of planting the early crops of vegetables.

Garden Seat.—Fig. 20 represents the end view of a garden seat so constructed that it may be instantly reversed when not in use, and protected from rain, dew, leaves, bird-slime, &c., and whenever needed is always clean and dry. The shaded part is the board legs or support, on which rests another board, (represented as lying flat, in the cut,) forming about one-half of the bottom of the seat. The rest of the bottom, and the back *b* is shown as turned up or inverted, forming a roof to the flat part; but when wanted for use, it is turned back by means of a hinge at *a*, and becomes a perfect seat with a back.

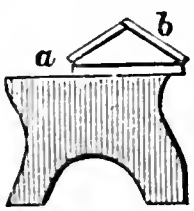


Fig. 20.

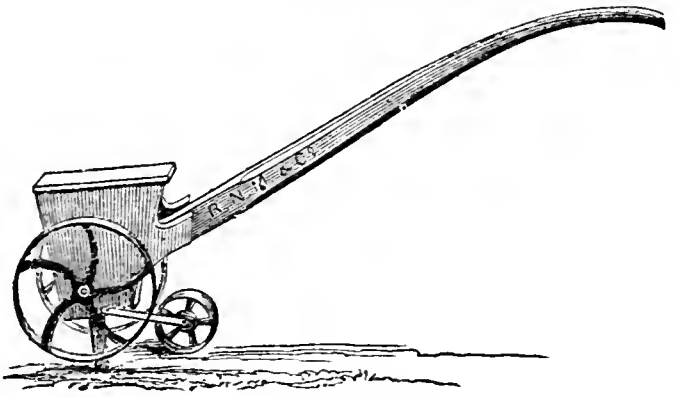


Fig. 19.—*Seed Sower.*

Rake for Seed Drills.—J. Harris of the Genesee Farmer, uses a convenient rake for forming rapidly and with perfect straightness, the drills for onions and other small garden seeds. The head of the rake is about seven feet long, and the teeth about one foot apart, (fig. 21.) A length of four or five feet would be less cumbersome, but operate more slowly. The first set of drills are made perfectly straight by running to a stretched line; and by running the first tooth in the last mark afterwards, the whole are kept equally so.—To drop the seed expeditiously into these drills, we have found the following mode a excellent one:—Provide a small tin cup like an inverted tin canister, with the bottom re-

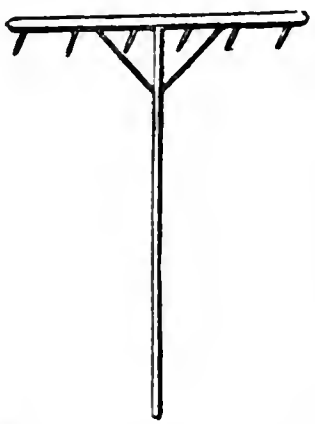


Fig. 21.—*Rake for Seed Drills.*

Fig. 22.

moved as shown in fig. 22. Several cups should be provided, fitting tightly on the lower end or funnel, with perforations of different sizes to suit different kinds of seed. Nail this cup to the lower end of a stick, about as long as a common walking cane, place the seed within the cup, and pass along the drills, shaking it over them. It will prevent stooping, and will enable the operator to walk rapidly.

PLAN OF A SHEEP BARN.

The following excellent plan and good management is from the pen of J. B. of Zanesville, Ohio, and is copied from a COUNTRY GENTLEMAN: I enclose with this, a plan of a barn I am about building on a farm of 122 acres—it is arranged especially for sheep. I have used one like it, (only it was 50 by 80 feet, and the rack partitions ran clear through,) for the past 16 years, wintering on an average 600 head of sheep in it, often times losing none, and but seldom a dozen, and they generally broken mouthed.

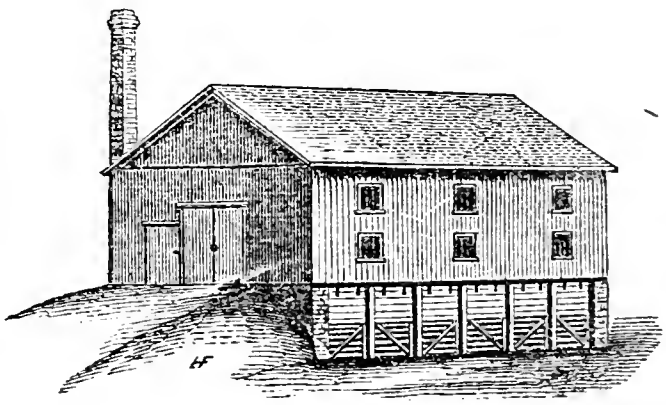


Fig. 1.—*Elevation.*

The plan enclosed is for a barn 50 by 60. It might be lengthened out the same way to a hundred or hundred and fifty feet. If the *ventilation* is good, I know that a thousand sheep can be kept under the same roof, as well as fifty.

It will be seen that the end of this barn is to the hill, and not the side. As it will have to be filled in some, to drive into, it is arranged for a cistern at each of those corners, with a root-cellar between, and *it* will have a trap-door above with door into the basement. There will be a lead pipe to convey the water from the cistern to the troughs; there will be small boxes about six inches square and six feet long, running down to where the pipe leaves the cistern, where the cock will be to let the water out when wanted.

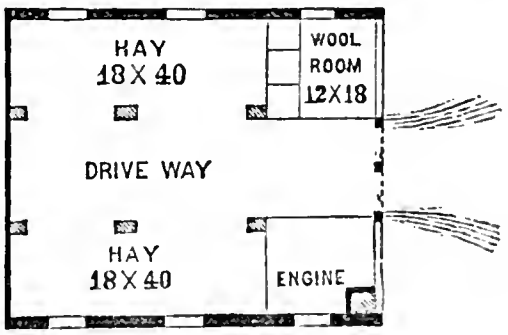


Fig. 2.—*Main Floor.*

The wall at the end that you enter above, is sloped off at both sides, and the dirt filled up against it, so that

the pipes are under ground till they reach the first trough, or rather above it for there will be a long trough on each side of the barn over the tops of the yard fences, (which are only three feet high,) and over each yard trough there will be a small hole in the long trough, and gutta percha pipes to take the water down to the drinking troughs.

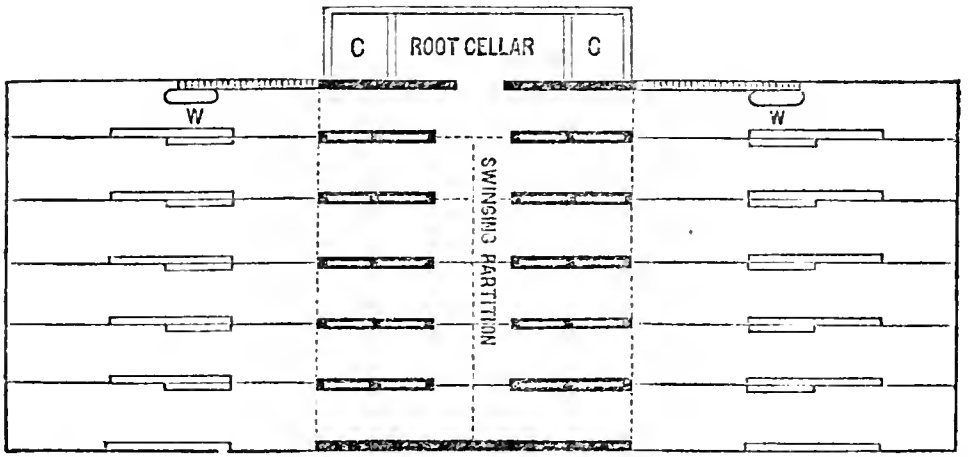


Fig. 3.—*Plan of Barn in centre, and yards each side.* C. C. Cisterns—W. W. Water troughs—5 ranges of racks in central part of barn, each division of which is 11 feet long—the yard grain troughs (longer,) and water troughs (shorter.)

The basement will be 9 feet high, and the *gates* at each side, 4 feet high, with swinging doors on the sill above. These doors should always be left open on both sides of the barn, unless during a rain or snow storm from the north, when they may be closed, leaving the south open; if from the south, close those, leaving the north side open. They never should both be closed at the same time, nor at any time unless a rain, hail, or snow storm; no matter how cold, I should leave both open. There should be ventilators built up, one by each of the four posts, seen in the main floor, and on the opposite sides of the holes for throwing down hay. The basement can be used for six flocks, or by putting in light doors swinging on the joist over head, it can be arranged for twelve flocks.

The main floor will be arranged on the left as you enter, for a four horse power, *Ericson engine, corn mill and root cutter;* on the opposite side a meal room and three bins, with outlets below, one for corn and cob meal, one for oats, and one for bran. The four bays will be used for hay and wheat.

Many farmers object to high barns, but when once you have your hay on one of these large forks, it is but little trouble to raise it a few feet higher. I have used one of these large forks for sixteen years, and have often unloaded a ton and a half of hay in four and a half minutes, and thrown it up to the top of the mow, in a barn with twenty feet posts.

Some may object to the number of gates, but I think you can never have a thing too convenient.

Now a little as to feeding and care of sheep. My custom is to keep their

yards and pens well littered with straw, and give them the range of the pens and yards at all times except during storms or while feeding, when the gate from the pen to the yard is closed, as the case may be.

At daylight they are shut up in their pens, and feed placed in their troughs in the yards, of one-third cob meal, one-third oats, and one-third bran, at the rate of *two bushels* of this mixture to the hundred. While they are eating this, their racks inside are filled with wheat or oat straw, the gates opened, water put into their troughs, and they can go in or out till four P. M., when they are fastened into their yards and their racks filled with hay; sometimes clover, and sometimes timothy, when the gates are opened and they can go in or out till morning, unless it is very cold or stormy, when they are fastened in. If any practical shepherd can improve on this plan I would like to hear from him.

EVERGREENS FOR PROTECTION.

Many land-owners, who have a more distinct appreciation of dollars and cents, than of the beauties of nature, cannot see the propriety of occupying ground and labor in setting out ornamental trees. To such, as well as to all others, we wish to urge the importance of planting evergreen trees as a shelter against the cold winds of winter. We once knew a country resident who flanked his house on the sides of prevailing winds with groups and masses of evergreens, (fig 1,) from the neighboring forests and borders of swamps—and drew upon himself pretty freely the jeers of his neighbors, for setting out trees that "bore nothing to eat," and were "only good to look at." In the course of years however, when these trees had attained a height of some twenty feet, and had afforded ample shelter from the winds that swept across the bleak hill occupied by his dwelling, the neighbors discovered that the place had become decidedly more comfortable in cold weather—also that many dollars in firewood were annually saved by the beautiful and efficient protection afforded. They began to see new charms in ornamental trees, and were disposed to adopt what they had once ridiculed.

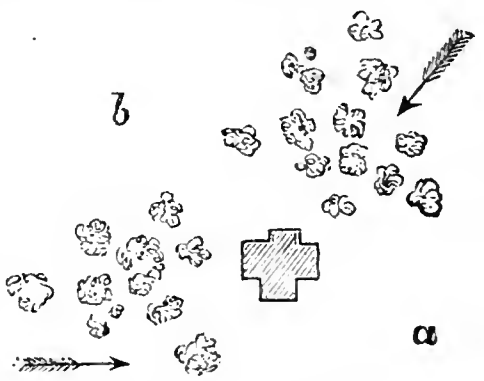


Fig. 1.—*Dwelling sheltered by trees—arrows direction of two most prevailing winds—a and b, open views towards the best distant points.*

Those who have cattle and sheep yards, exposed to the sweep of keen prevailing blasts, could they see the comfort which a screen of evergreens would impart, would be ready to plant them on the first opportunity. They

are the cheapest as well as one of the most permanent and durable kinds of shelter that can be provided.

Screens placed along straight boundaries, may be in right lines like hedges. But shelter in immediate proximity of dwellings, appears better if in scattered trees, groups, and irregular belts. (Fig. 2.) The straight screens may be made by setting the trees three or four feet apart, or at a greater distance—say eight or ten feet. In the former case, (fig. 3,) the screen will soonest become a dense barrier against the winds, but will not be so tall and stout ultimately. One of the best trees for this purpose is the Norway spruce—which, if planted three feet apart, will form a good and close shelter in five or six years, if well cultivated, eight or ten feet high, while the tops of the trees will extend some feet higher. If not cultivated, but allowed to grow up with grass or in hard ground, ten or twelve years will be required to attain the same dimensions. If the trees are placed six feet apart, (fig. 4.) they will in time make an excellent screen, and cost less at the start. They are untimately sheared or cut flat, so as to occupy less room—fig. 5.

Fig. 2.—*Irregular screen.*

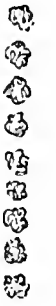


Fig. 3.

Fig. 4.

Fig. 5.

Many erroneously suppose that if they set out large trees they will obtain a given height the soonest—a very mistaken opinion—for large trees receive the greatest check by removal, and they induce the planter to believe that he need not give good cultivation to his plantation. Smaller trees, well cultivated, will soon outstrip them, and present at the same time a handsome and more thrifty appearance. A height of two or three feet will, in most instances, prove most profitable. In the depth of winter—evergreens may often be removed from the borders of woods and swamps, if the earth is but slightly frozen. The protection which the trees as well as the coating of fallen leaves afford, often nearly prevent the mould which covers the soil from freezing, especially if snow has fallen before intensely cold weather set in. In such localities, select small trees, only a few feet high; cut a circle with the spade about the roots, so as to lift up a cake or ball of soil; place the trees in their natural position on a sled, and draw them to the place where they are to be planted. As a general rule, the cake of soil should be so large as to hold the trees upright without upsetting wherever they are placed. No evergreen, however difficult the kind may be to transplant successfully, will fail if this amount of earth is carried with its roots.

Trees from the nursery row cannot be removed in winter without great labor, at the same time that the work may be more readily done in spring, as they require the removal of less earth on the roots—they scarcely ever fail

if the roots are immediately immersed in mud as soon as they are taken up, and before the moisture on the surface of the roots has become dry.

The best wild growing trees for screens, are those which grow most rapidly—provided they answer well in other respects. The white (or Weymouth) pine is a fast grower, and is well suited for small groups and irregular screens, when several kinds are intermixed. Nothing makes a more beautiful straight screen than the Hemlock—either with or without cutting or shearing; it grows well in the shade, and, as a consequence, the interior of the hedge or tree is full of dense foliage instead of being hollow and bare within, as occurs with the Arbor vitæ and some others. The white cedar of Western New-York (American arbor vitæ,) grows with considerable rapidity, and makes a fine screen; but its surface should not be closely and evenly sheared, as this tends to make the interior hollow, but should be merely cut back irregularly with the knife. But, first and last, it must not be forgotten, that mellow cultivation not only doubles, at least, the speed of growth, but makes finer and more luxuriant looking trees.

One of the finest specimens of evergreen screens which we have ever seen is growing on the grounds of Ellwanger & Barry of Rochester. On a recent visit to their place, one of these screens presented so fine an appearance as to deserve special notice. It has now been planted about eight years, is eleven feet high, four feet thick at the bottom, and running up in the form of a wedge, and is as straight and even as a solid wall of masonry. Such a screen, extending around a garden, would protect it from cold blasts, and probably be equal to two or three degrees of latitude in softening the severity of the climate. The Norway Spruce like the Hemlock, grows well in the shade, and this screen seemed nearly a solid mass of verdure throughout its interior. The Hemlock screens presented the same appearance when examined inside. But the Arbor vitæ, Buchthorn, &c., which do not grow well in the shade, always exhibit nothing but bare stems and branches inside, however dense the foliage may be without.

Laying out Curves for Roads and Walks.

There are two prominent reasons why roads and walks should be laid in in curves; the first is utility, and the second is beauty. Unless the surface of the country is perfectly level, a public road should vary from the straight line, in order to avoid the ascent of hills. Unfortunately, in many places, this has not been properly attended to. We could point out a number of instances where a slight deviation from the right line in a public highway, would have prevented the necessity for every carriage and loaded wagon ascending a steep hill. In one case, familiar to us, the ascent is ninety feet from the level; a deviation of twenty rods, with a lengthening of the road

of not more than five rods, would have entirely avoided the hill. Fifty teams on an average pass this hill daily, making 15,000 laborious ascents annually, simply because the man who laid out the road did not exercise a few minutes' thought. Several years ago a turnpike road was made from Worcester to Boston, three miles shorter than the old road, but passing over instead of avoiding the hills. But very few travelled it—they preferred the longer and levelter route, and the enterprise proved a failure. A humbler illustration occurred on the farm of an acquaintance who made a smooth farm and cattle road over an ascent, but leaving a portion of the enclosed space more nearly a level. His cattle soon found out by practice that more exertion is required to overcome gravitation in walking up and down the hill than by passing on the rougher surface around it; they therefore selected a path for themselves very nearly on a level, and where a skillful engineer would have placed it, and after a while wore it smooth by frequent passing.

In a hilly or undulating country nothing of the kind can be more agreeable than the constant deviation to the right or left, in graceful curves, on a nearly level, well-laid out and well-constructed road. On the other hand, travellers have often remarked on the tiresome sameness of a long, straight road over level country.

In laying out ornamental grounds this remark applies with greater force. Straight walks have a stiffness entirely discordant with the beautiful and curved forms of nature, and the old geometric school has consequently given place to the modern, more natural, and more graceful style.

A well-laid out and smoothly kept walk will impart character and finish to any grounds, even if the rest is in rough condition. But a badly curved, broken-jointed, ill-dressed walk will spoil the appearance of the finest landscape garden in other respects.

Novices are often puzzled for definite rules for making curves. In the simpler cases it may not be necessary to draw plans on paper; but where this is done the work may nearly always be accomplished in a better manner. A well-drawn design is transferred to the grounds by measuring the several parts. But still it is desirable, in finishing the details, to adopt some rule for making true and easy curves. The best mode is to provide a large number of short wooden pegs and stick them in the ground, at regular distances, deviating from the straight line a greater or less degree according to the length or shortness of the curve. Fig. 1 exhibits this process where the successive and regular deviations form the curved line desired. At *c* these deviations are slight and the curve is longer; at *b* they are greater and produce a shorter and more abrupt curve. A perfect circle may be laid out in this way without the usual resort to a line and centre-pin, fig. 2. A land surveyor may thus run a circle miles in diameter by successive and uniform deviations at each observation taken at regular distances.

We have found the following contrivance a simple one, and to answer a good purpose. Take a light wooden rod, (fig. 3,) say two yards long, with a

small wire hook at one end, a slight notch on each side at the middle, and a graduated cross-bar at the other end.

Small holes are bored into this cross-bar at regular distances, for the insertion of a pin. Suppose we wish to lay out a walk, as shown in fig. 1, commencing with the direction *a. e.* Place the rod just described *a. d.* in this direction, and stick in a pin at *a.* and at *e.* The deviation of the third pin at *d.* can be accurately determined by making a few trials. When thus determined, set the pin in one of the holes of the cross-bar at the determined distance from the centre, and insert a corresponding pin into the ground. Then slide the rod a yard forward, placing it against the two last pins and repeat the process. So long as this process is continued it will form a uniform and perfect curve. If, however, it is desired to pass gradually from a long to a short curve, remove the pin in the cross-bar further from the centre at each successive station, and the result will be shown at *c.* and *b.* in figs. 1 and 4.

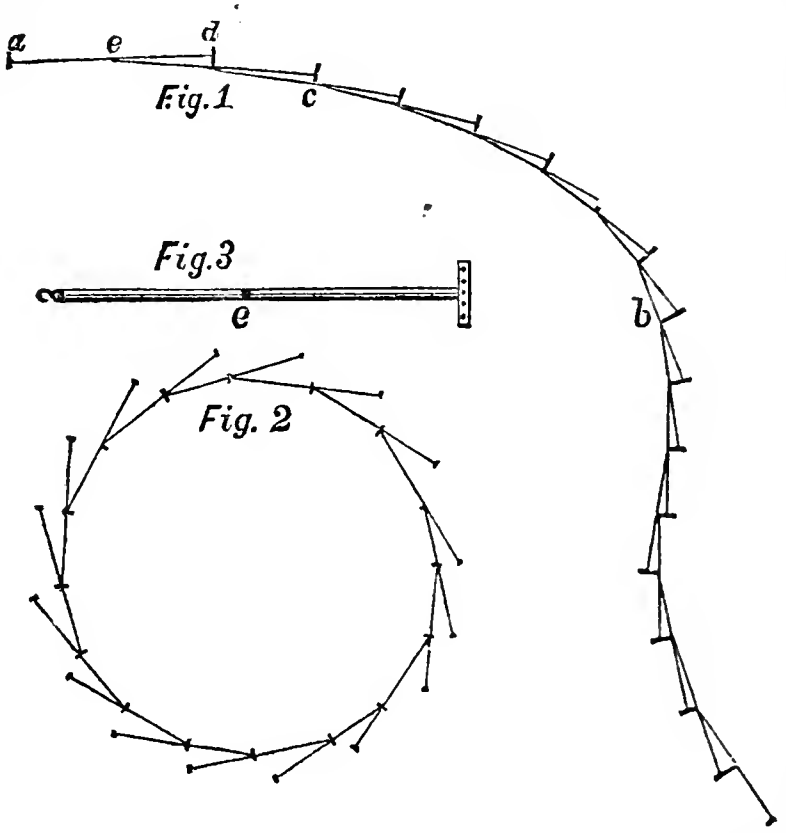


Fig. 1

Fig. 3

Fig. 2

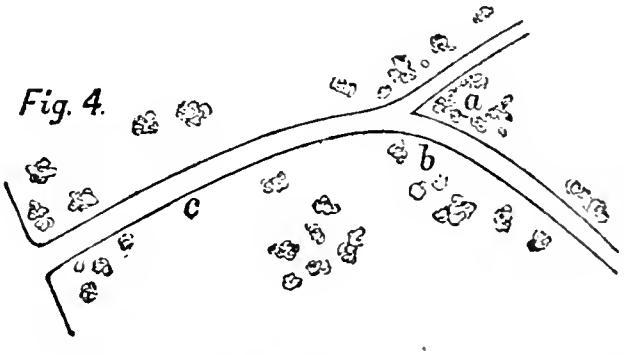


Fig. 4.

After some experience, the ease and facility with which curves may be thus extended over grounds in all directions, will be surprising to any one who has not previously tried it.

Curves in roads are sometimes angular and unpleasing, because laid out merely by guess. By adopting the rule just given, on a more extended scale, a perfect form may be attained, even if the successive stations are merely measured by pacing.

CUMBERLAND CLOD-CRUSHER.

Clod-Crushers are useful only on heavy or clayey soils—and if these are well underdrained, they will not be needed in ordinary seasons. But sometimes heavy rains, and the impossibility of doing all the plowing at the very moment the soil is in right condition, render the surface cloddy, and an instrument like the following, described in the COUNTRY GENTLEMAN by L. Bartlett, will be of much value. Its utility in mixing manure with the soil, by grinding the particles together, is one of its most important uses.

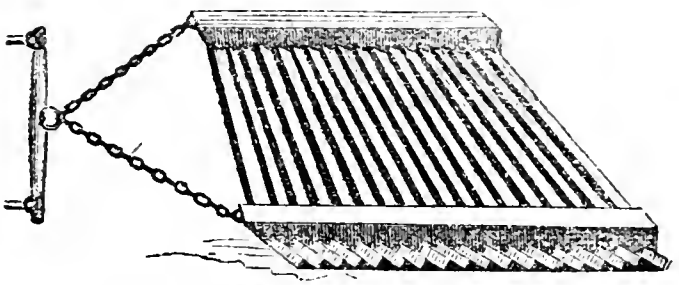


Fig. 1.—*Cumberland Clod-Crusher.*

Another useful and cheap implement I have used, is known in England as the "Cumberland Clod-Crusher." A plate or figure representing it, with a description, &c., I saw in the London Agricultural Gazette, a number of years ago. The writer said, "It is so easily constructed that any carpenter can make one. They cost 30s to 40s, according to their size, and the quality of the wood employed. Perhaps the best size is six feet square. For this size, two, three, or four horses are used, according to the state and character of the soil, and the weight applied." This crusher, it was stated, was more effective in clod crushing than the vastly more expensive Crosskill's crusher.

From the description and plate, I made one of these crushers last year, and find it a very efficient implement, and will attempt to describe it.

I used two inch, seasoned, second growth red oak plank, eight inches wide. I took for the sides two pieces of the plank about five feet long each, on one edge of which, every seven inches, I sawed down two inches, scarped from the saw-cut back seven inches, so that the edge of the plank presented an appearance similar to the teeth of a saw-mill saw. The bottom of the drag was made of plank, eight inches wide, and four and a half feet long, spiked on to the side pieces, so that when completed the bottom part resembled clapboarding. The forward plank slopes high up to the top of the sides to prevent the soil from dragging. The crusher is drawn by a chain made fast to the forward end of the side pieces.

The English statement says it can be made at a cost of 30s to 40s—that is from $7.50 to $10. The plank for mine cost 50 cents, and I made it in less than half a day. If I had taken it a mile to a shop where there are circular saws, I could have made it in two hours. Beside the plank, I used 28 five inch spikes. However, the English crusher has strips of hoop iron nailed upon the wearing edges of the plank, so as to prevent chafing, which pro-

bably is a good plan. The weight of mine, when completed, was 220 lbs., and a pretty good load for one yoke of oxen to draw over the newly turned furrows.

The last of August, I turned over a field of timothy sod land. In consequence of the severe drouth we had, the land did not plow so well as if it had been moister. I put on the crusher and after going over the ground, it looked almost as smooth as a new sown onion bed. The manure was carted on and spread, and the crusher again passed over, which ground the manure very fine and even. The land was then well worked with a heavy cultivator, wheat sown and then harrowed. On a portion of the field I again used the crusher, and on the other a roller. The wheat came up and grew finely, and when the snow came it was altogether the best looking and evenest piece of winter wheat I have ever seen. I also find it a capital thing to press down the snow about my buildings, and breaking out roads, &c.

It is my impression, that this crusher is a much more efficient pulverizer of a hard lumpy soil than a common roller. In the COUNTRY GENTLEMAN of April 21, 1864, Old Hurricane gives us his experience in preparing his land for a root crop. The land was plowed in the fall, and twice in the spring, and four times harrowed to fit it for turnips—"then drills opened and heavily manured in drills, and after the seed was sowed, will you believe, it took two men nearly two weeks with mallets, to break up the lumps, and the lumps were so hard, that it took four to five hard blows to break them," and the crop proved a failure. Now I think if O. H. could have gone over his lumpy soil two or three times with this Cumberland crusher, his lumpy land would have been reduced to a fine tilth with less than one quarter of the labor he expended, and that he might have grown a fair crop of turnips.

As there is no patent right about this crusher, each and every farmer that wishes, can make and use it, without 'let or hindrance.'

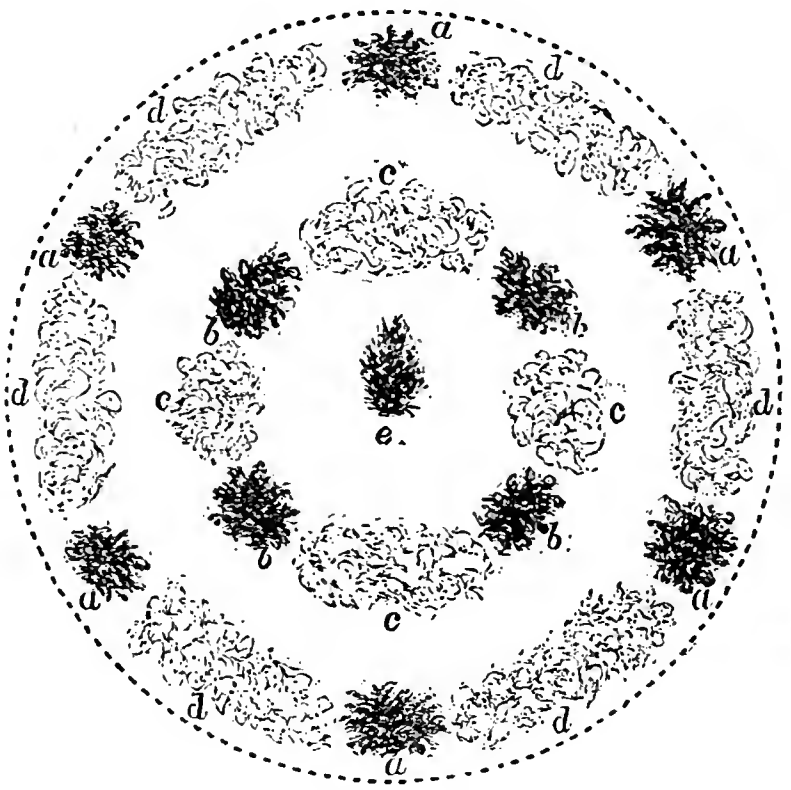
CIRCULAR FLOWER BED.

A correspondent of the COUNTRY GENTLEMAN furnishes the annexed plan of a circular flower garden, and gives the following description of the plants to be employed in filling it, and the mode of arrangement—his object being to dispose of the plants so as to produce the fine effect of massing together, instead of the promiscuous confusion so often prevalent:—"We shall suppose a circular bed with sufficient space for two distinct lines of plants and one central prominent object, in this case a golden arbor vitæ. The first, or outside row, must be dwarf. At regular intervals six nice plants of daphne cneorum would be set out, either in the fall or spring, eighteen inches from the edge. This charming evergreen requires to be pegged down twice a

EXPLANATION.

a. Daphne Cneorum.
b. Salvia patens.
c. Geraniums and Gladiolus.
d. Lobelia speciosa Paxtonii.
e. Golden Arborvitæ.

Two bulbs of Lilium lancifolum album, behind the center of the Lobelia, fronting the Salvia, has a fine effect. If exposed to the sun, with no shade whatever, the Lobelia will require to be watered (not superficially,) twice a week in parching weather.



year, when, instead of an unsightly straggling usurper of space, it becomes a dense mass of refreshing green, in May covered with deliciously scented pink blossoms, which are sparingly renewed in the fall. Between each plant of daphne, young plants of lobelia speciosa paxtonii are to be set out in May, covering the whole blank space—say about one root to every five inches. Presently these will close up, and flower throughout the season—color, vivid blue and white. (The lobelia is easily raised by sowing the seed in pots, end of March—placing a square of glass above the soil to retain humidity, and administering water in very minute doses. When the seed leaves appear, remove the glass.) If it is desired, a different plant may be used between each of the daphnes, and so have a variety of colour. But these must all be of the same height. For instance, lobelia; verbena, purple; variegated balm; verbena, white; Phlox Drummondii, (annual); verbena, crimson; or each of the six spaces may be occupied by the best of all annuals, Phlox Drummondii—a separate color in each.

The second, or inner line, is to be struck half way between the first line of plants and the centre specimen—in this instance a golden arbor vitæ of some size, or a well shaped tree box. On this line are to be set out four plants of salvia patens, (the most beautiful blue and prolific bloomer we have during the fall months.) The first of these being planted half way between two of the daphnes, and the other three at equal distances. If properly set out, these salvias will stand as the corners of a square with four blank spaces between—each of these spaces to be occupied by bedding geraniums. These

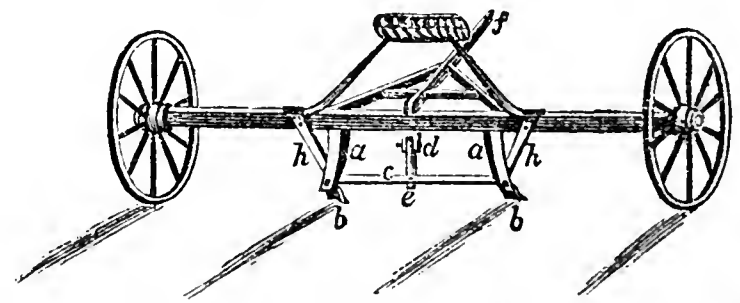
may be all of the same, or each different. The best effect is to be had from a variety, viz: Paul l'Abbey, the very finest cerise red; Christine, by far the best pink, ever blooming; Kingsbury Pet, the best salmon; Princess Alice, or Gen. Pelessier, bright scarlet. The salvias must be carefully trained, and tied to thin but reliable sticks, as their habit of growth is erratic. It is a good spot on which to locate one dozen of gladiolus—three bulbs, half way between each salvia, that is to say, in rear of the geraniums. The long bare stems of the gladiolus penetrate through and above the geraniums, the foliage of which supplies what is lacking on that gorgeous Cape bulb.

Extend the capacity of the bed, and we have then space for an intermediate circle, arranged on the same principle as the others, or better still, alternates, say double white feverfew and antirrhinums, both of which bloom freely all the season, with judicious cutting back as the earlier blooms pass off.

The above is one of the many outlines for the effective planting of beds on a lawn. The same principle is applicable to borders, with a backing of evergreen and deciduous shrubs. It must be borne in mind that a large number of herbaceous plants can be appropriately used to produce bedding effects, and these, instead of being killed by the first frost, are perennial, increasing the stock every season. There is no necessity, therefore, to lay in fresh supplies of bedding stock every spring.

CORN-MARKER.

This corn-marker is attached to Alzerin Brown's Wheeled Horse-Rake. The rake-head and levers are easily detached, the marker attached, and vice versa. The wheels of this rake stand apart 8 feet 3 inches, which, divided by 3, gives 2 feet 9 inches as distance between rows, which is right for us. The scantling *a*, *a*, are 3 by 3 inches, with a mortice in one end for an old cultivator tooth, *b*, *b*—a sny-bill at the other, to attach it to the under side of front cross-bar on the thills—*c* has a mortice, *e*, in middle for insertion of link *d*—*c* has also two long gudgeons inserted in large staples in sticks *a*, to give independent motion up or down. Link *d* is also attached to lever *f*, on cross bar *g*. By putting the foot on lever *f*, the teeth are raised clear of obstructions, and for turning at the ends of rows; the boards *h* are screwed outside the lags to hold them longitudinally. By tracing one mark with each alternate wheel, the machine



marks three rows at once on the roughest of ground. It has the advantage of a seat for the driver, (not shown,) marking three rows at once, or four if you fasten a long pole just forward of the wheels, with a light chain at each end to trail in the last mark. The wheels make a very distinguishable mark, and last, but not least, you come very near having two handy tools in one.

DAIRY MANAGEMENT.

RULES FOR WINTER FEEDING COWS.

1. Provide comfortable shelter from winds, or stables.
2. Avoid all currents of air through cracks or openings.
3. Attend to ventilation and remove all foul or steamy air.
4. Provide sufficient litter and attend to perfect cleanliness.
5. Feed regularly, or by the watch, as the animals will fret away flesh if the time is delayed.
6. Never give more than the animal will eat,—small quantities, regularly and frequently given, are better than large doses.
7. Never change food suddenly, as from hay to grain or roots, but begin in small quantities and increase gradually.
8. Never feed heavily with grain or meal—animals will thrive better with two quarts at a feeding than with six.
9. A portion of some kinds of roots, as carrots, beets or turnips, contributes to the health and thrift of the animal—a mixture of dry fodder, meal and roots is better than either alone.
10. Clover hay well dried without wetting, is the best fodder—and cornstalks, dried without becoming mouldy and cut finely, the next.
11. Corn meal fed in small quantities is good, but in larger quantity, although increasing milk at first, subsequently augments fat at the expense of milk. Valuable cows have been seriously injured by too large doses of Indian meal.
12. Carrots are the best winter food for milch cows, where the production of good rich butter, like that from grass, is a main object; while field beets will yield more milk in quantity.
13. Provide a frequent and constant supply of good pure water.

Product of Dairy Cows.—At the discussions on the evenings of the State Fair at Rochester, Geo. A. Moore of Buffalo, said that a cow that will not yield 400 lbs. of cheese a year is not worth keeping, yet that in Erie county, 300 lbs. might be considered as the average. A cheese maker at Rome, said that he had a cow that would make 700 lbs. of cheese in a year. Loomis of Herkimer, stated that some of his neighbors regarded it as a

failure if they did not average 600 lbs. of cheese to a cow, in a dairy of 100 cows. In small dairies 825 lbs. on an average had been reached.

Obtaining the Best Cows.—At the same meeting it appeared to be the unanimous opinion, that the best dairy cows could be obtained only by raising them. The cost of raising was estimated at from $30 to $35 each; while their real value, at present prices, would nearly double this amount. As the most productive cow costs no more to keep than an unproductive one, and yields several times the amount of clear profit, it becomes very important to select calves from the best milkers only, and not purchase indiscriminately in market.

Good Feeding.—The productiveness of cows depends greatly on the food they receive. The large products from the Herkimer dairies are obtained by giving the best feed the year round. As soon as autumn feed begins to fail, shorts, ground oats, &c., are regularly given. A small and regular supply of roots would be valuable. They are sheltered from the cold or stabled, and strict cleanliness and pure air attended to.

Home-raised Cows.—It has been stated as an additional advantage in raising cows at home, that the attachment to their native spot is so strong that the milk is often much diminished when removed from it. G. A. Moore of Buffalo, remarked that a cow brought from his farm-house to his home in Buffalo, although attended to in the best manner, diminished one-half in her milk. This is the reason that purchasers are often disappointed in the cows they obtain, and charge false statements on former owners.

Food for Milch Cows.—Cornstalks sown thickly for fodder, harvested, well-cured, and kept from fermenting, are probably the cheapest kind of fodder that can be raised for cattle—unless sorghum raised for this purpose should prove by experience to be better. In addition to this, give each animal daily, a peck to a half bushel of carrots, or an equal amount of sugar beets, the winter through. It does not pay to cook them. A small quantity of corn or bean meal, or both, in addition to this, will have a good effect, but not more than two quarts should be given daily, at the utmost.

Milking Stool.—The stool represented in the annexed figure is described at length by a correspondent of the Country Gentleman, which he says has given decided satisfaction to all concerned, viz: the milker, cow, milk, stool, clothing or pants' legs, manure, milk-maid, butter-maker, &c. It is made of a half inch board two feet and a half long, and ten inches wide. An inch board four inches wide is nailed or screwed across one end on the lower side, and another across the other end on the upper side. These cross pieces serve to stiffen the stool, and brace the legs. The milker when using it, sits over the single leg with his face towards the other end and his feet on each side of it. The milking pail is placed on this other

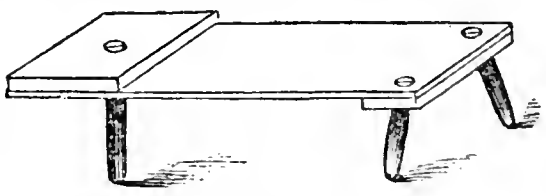


Fig. 1.—*Milking Stool.*

end, and is thus kept entirely out of the dirt, beyond the danger of being stepped into by the cow. This stool may be easily turned aside without the milker rising, by his throwing the weight entirely on the single leg. The writer says that the pail being so near the cow, the milk never spatters on his clothes, and he can do his work with his "meetin pants" on without injury. He adds that he has in consequence "saved considerable milk, and had it *clean*, saved scolding, brooming, grumbling, clothing, cramp in his legs, and for aught he knows, a *divorce*, he and his wife still living together."

Substitute for Milk in Rearing Calves.—The Irish Farmers' Gazette gives the following:—The best substitute for milk for such a purpose is a compound of 3 quarts of linseed meal, and 4 quarts of bean meal, mixed with 30 quarts of boiling water, and left to digest for 24 hours, when it is poured into a boiler on the fire having 31 quarts of boiling water. Let it boil for half an hour, keeping it constantly stirred with a perforated paddle to prevent lumps and to produce perfect incorporation. It is then put to cool for use, and given blood warm. When first used it must be given mixed with the milk in small quantity, and increased gradually; decreasing the milk in the same proportion till they get the above mucilage only. Indian meal feeds calves admirably, used in the same way; and from some experiments we have made, we think that a mixture of linseed meal, and bean meal, in the same proportions, with a quantity of Indian meal equal to both—that is, 3 quarts linseed, 4 quarts bean, and 7 quarts Indian—equal to any thing we have tried.

FIELD CULTURE OF THE ONION.

The following practical directions are given by Henry Pearey:

The kind of Soil.—The soil I prefer is a good sandy loam.

Preparation.—If you have some very rotten manure free from weed seed, apply forty or fifty two-horse wagon loads to the acre. If you are not sure your manure is free, or nearly free from weed seeds, you had better not apply it, for there will always be an abundance of weeds at best. In place of manure use two hundred bushels of leached ashes to the acre, and plow six inches deep, and then drag and pulverize the ground well; then roll with a light roller to mash lumps, and drag again or rake to make light and fine on the surface. The past year I used a fine-toothed drag, that cut once in two and a half inches, behind the roller, so the ground was finished at one operation.

The Kind of Seed and Quantity.—The kinds that I have raised most are the Yellow Danvers and Large Red, principally the latter. The amount of seed per acre will depend on the knowledge one has of its age. I prefer to sow as near three lbs. to the acre as possible, if I know the seed was

raised the year previous; if not sure apply more. Last year the writer saw an acre of onions on which there was only three-fourths of a pound of seed put, but the onions were not a third as thick as I generally leave them.

Sowing.—The time I recommend sowing onion seed is just as early as the ground can be properly fitted in the spring. In sowing it is best to drop a seed as often as one an inch, so as to have plenty come up. If the seed are sown by hand, they had better be mixed with sand or plaster, so that they can be sown without danger of getting too thick. I prefer a drill to sow with, because it sows evener than any person can possibly by hand. In regulating a drill to sow, it is best to try it on a floor, with a slide in the drill that you think about right; if it sows too thick—which you can readily see by counting the seed dropped—substitute the slide in the drill by placing one with a smaller hole, and so experiment till the right quantity is dropped. Cover the seed one-half inch in heavy loam soil, and three-fourths an inch or more in light soil, and roll it smooth. Sow the rows sixteen to eighteen inches apart, as that is near enough if they grow rank, and it is handier to weed when that distance, after the onions get large.

After Culture.—By all means start a hoe or some weed-cutter as soon as the onions are large enough to see the rows. Some recommend sowing radishes with the onions so to follow the rows more readily.

When the onions are up to four or six inches, thin to one inch if the ground is *very rich;* if medium, to two inches; if poor, to three or four inches. One inch may seem to make near neighbors, but the writer has practiced that plan on first-class soil, and found the onions to get plenty large enough. I have had them yield five bushels to the rod, for a number of rods in succession, but from two to three bushels is a good average. Any time after sowing seed, give as a top dressing (before a rain if possible,) equal parts of plaster and hen manure, at the rate of four quarts to the square rod; and through the season another dressing, the same, or unleached ashes, at the rate of a peck to the square rod.

Charcoal is also an excellent dressing for onions, or if a person has plenty, it would be a good plan to powder it as fine as possible, and apply before plowing. Ever bear in mind to keep the weeds down.

I am aware that some onion-raisers recommend breaking down the tops when the bulb is nearly grown, thinking that it will bottom better. I have always considered that a "granny" notion, and let the tops fall naturally.

Harvesting.—When a majority of the tops are withered down, I take a potatoe hook and carefully pull the onions, let them lay on the ground till cured, then cut the tops off and market, if the market suits; if not, it is better to place them on a barn floor or some dry place.

Raising Seed.—In raising seed always pick out the largest or medium sized onions, as near the same shape as possible. When the time arrives for setting out, mark rows as wide as for corn, take a hoe and dig a trench three inches deep, and place the onions eight inches or more apart, and

cover and press the ground well. A row of seed can be sown well enough between these wide rows, and will yield well. The object in placing the onions for seed so far apart, is that there may be plenty of room to keep out the weeds. I once planted some onions for seed with the rows not more than sixteen inches apart: the consequence was I could not get among them to weed: when large, up came the weeds and blasted the onion seed. When the seeds are black and begin to get hard, cut off the stalk six inches below the heads, and spread where they can dry; thresh out the seed, and clean as clean as possible with a fanning-mill; then place the seed in a pail of water and stir: the poor seed will arise, which skim off; then spread the seed that settled, in the sun or near a stove to dry, and I will warrant that you will have better seed than can be bought of nine out of every ten seedsmen.

RAISING VEGETABLE SEEDS.

The following excellent remarks from J. S. Ives, Salem, Mass., a writer of experience, are copied from the COUNTRY GENTLEMAN, and furnish information in relation to which there has been much inquiry.

Having for the past few years devoted much time and attention to the careful raising of the most prominent and important varieties of vegetable seeds, and finding no work or newspaper article treating upon this important subject of farming, a few hints may not go amiss through the minds of your interested readers.

In the first place I have always been careful to grow but one variety of a certain species, that is, one variety of cabbage, one of onions, &c., unless grown on separate farms, or so far from each other as to render it impossible for them to hybridize or mix.

It is an apparent mistake that vegetables set for seed need but little manure; they should be well manured with old decomposed compost, with particular care that the manure is kept from immediate contact with the roots or small fibres of the vegetables. I prefer broadcast manuring, spread and plowed in in the fall. Seeds grown on rich soil will be large, well matured, and ripen earlier than when raised upon poor starved lands. In selecting vegetables intended for seed, as much care should be taken as in the selection of stock animals for breeding purposes. I have known many farmers to dispose of their best vegetables, reserving for seed those of inferior quality, unfit for the market, the result of which would be inferior seeds, producing inferior vegetables the following season, and eventually degeneration, or, as the farmers term it, running *out*, to a worthless, unpalatable article. The vegetable should be sound, and in a healthy condition when set out in the spring.

I will give briefly my mode of raising a few varieties of the most important vegetable seeds. My cabbages, "the Mason or Marblehead variety, which originated from seeds imported by us," are selected with great care; those only that are solid and well proportioned, are chosen in the fall; they are set out in drills, and late in the fall covered four inches deep with soil, and afterwards one foot of litter is placed upon them. In the spring they are removed and set out in drills four feet apart each way, and the top of the cabbages are cut crosswise about two inches deep, to enable the centre shoot to break through. When the stock is about one foot high, the side lateral, or any that may not sprout from the immediate centre of the cabbage, is removed, and nothing left but the main or centre branch. Seeds grown in this manner will be sure to produce heading cabbages the following season. Beets, carrots, parsnips, and other vegetables are served in the same way, with the exception of cutting, which is unnecessary, and often dangerous with most vegetables. To ensure large and well developed carrot and beet seeds, it is very important that the scissors be freely used, removing the side or imperfect laterals two or three times during the season. Turnip seed is easily raised in time to sow the same season. The Purple Top Strap-leafed variety is preferred in our vicinity; the White Strap-leaf is also much esteemed as a table variety.

The responsibility of the seed grower is very great, and therefore seed grown properly should command much higher prices than worthless seeds often sold to the innocent purchaser, to the great injury, and perhaps entire loss of his year's work. Never plant varieties of the same species near each other. But different species will not hybridize, that is, the Crookneck squash and the *so-called* Marrow or Hubbard squash can be planted together without fear of mixture, one being of the type of squash, the other of the pumpkin; the same with cucumbers, melons, &c.

As much of the farmer's success depends upon the seed he sows, the greatest care should be taken to procure responsible and well grown varieties; but this is not all that is necessary to ensure good crops. See that the proper manure is used, and plenty of it; that the soil and situation is suited for the variety chosen for it, and also attend to the proper cultivation throughout the season, for the neglect of any one of these precautions often produces a ruined or worthless crop.

Rabbits Gnawing Trees.—Let me repeat it, for my neighbor says several of his fine young apple trees have been ruined lately by the rabbits gnawing them:—Take thick *lime whitewash* and thin it with strong *tobacco juice*. A bucket full will serve 200 trees, and a man can make it and put it on in half a day. It is effectual, for I have tried it. Suel Foster. *Muscatine, Iowa.*

A FEW OF THE NEWER PEARS.

Some of the newer pears which have now been tested with many years trial, and proved valuable, are worthy of particular notice in the REGISTER. Among some of the best are the following:

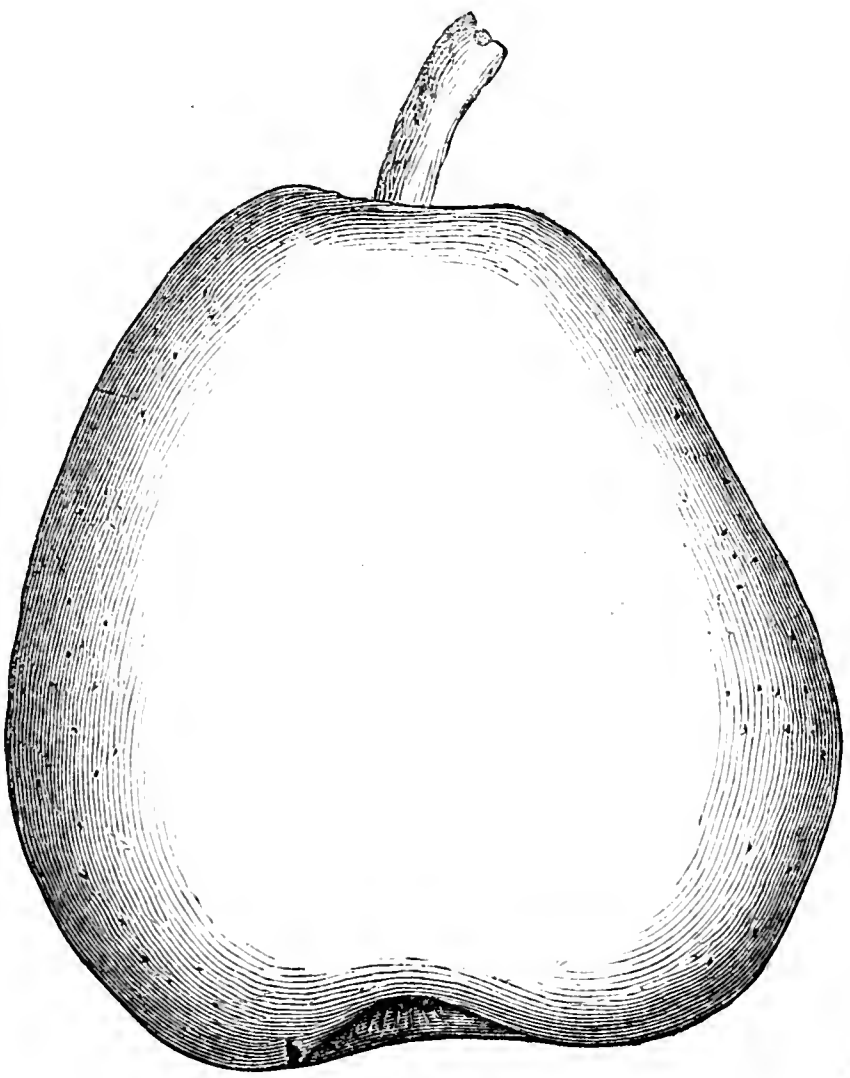


Fig. 1.—*Beurre d'Anjou.*

BEURRE D'ANJOU, (fig. 1.)—This variety, although not very showy nor very productive, is one of the most faultless of all the newer sorts. It grows well, both as a standard and dwarf, bears moderately and evenly without being overloaded, and the fruit is of uniformly fine quality.—The fruit is rather large, distinctly obovate, well-rounded; stem short and thick, inserted in a slight, russeted cavity; calyx small, in a quite small russeted basin; skin greenish, often slightly russeted, sometimes with a reddish brown shade to the sun; flesh slightly granular, buttery and melting, with an excellent flavor. It ripens about the middle of autumn, and will keep for some time. This variety is of French origin, and is one of the several foreigners, such as the Bartlett, Urbaniste, Flemish Beauty, Belle Lucrative, Rostiezer, Giffard, Louise Bonne of Jersey, &c., which appear well adapted to the climate and soil of this country.

BUFFUM, (fig. 2.)—This is another sort which succeeds well both on the pear and quince. It is a very strong, handsome, upright grower, with rich, brownish shoots, and is a prodigious bearer. The tree is very hardy, and endures the severe winters of the west. It is, on the whole, one of the

best pears for orchard planting; and when the fruit is gathered a week or two before maturity, it ripens well in the house and assumes a fine flavor; if left on the tree till ripe it is often poor in quality. When the tree attains size it assumes a handsome, symmetrical form, and when loaded with fruit is an ornamental object of no ordinary character. A few years since the writer saw a tree on the

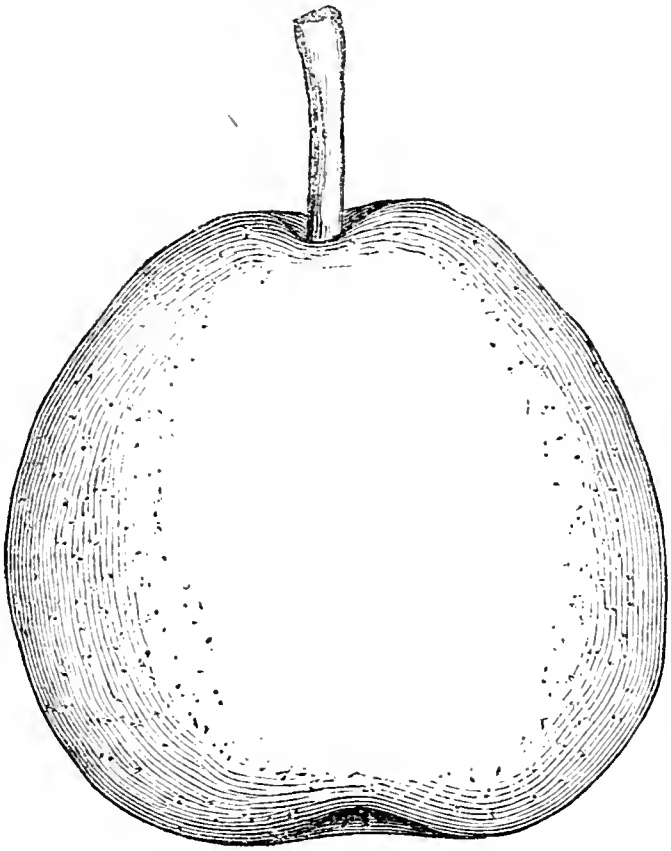


Fig. 2.—*Buffum.*

grounds of Edward Earle, Worcester, Mass., twenty-three years after grafting, which was bearing 27 bushels of fruit—two years previously it bore twenty-five bushels. The Buffum pear is of nearly or about medium size, regular obovate; skin brownish-green, becoming deep yellow, sometimes slightly russeted, with a large, rich red cheek; stalk an inch long, slightly sunk; basin small; flesh white, buttery, not melting, of a very sweet and fine flavor.—At the meeting of the American Pomological Society in 1849, the Buffum was strongly denounced by several members for its alleged deficient flavor,

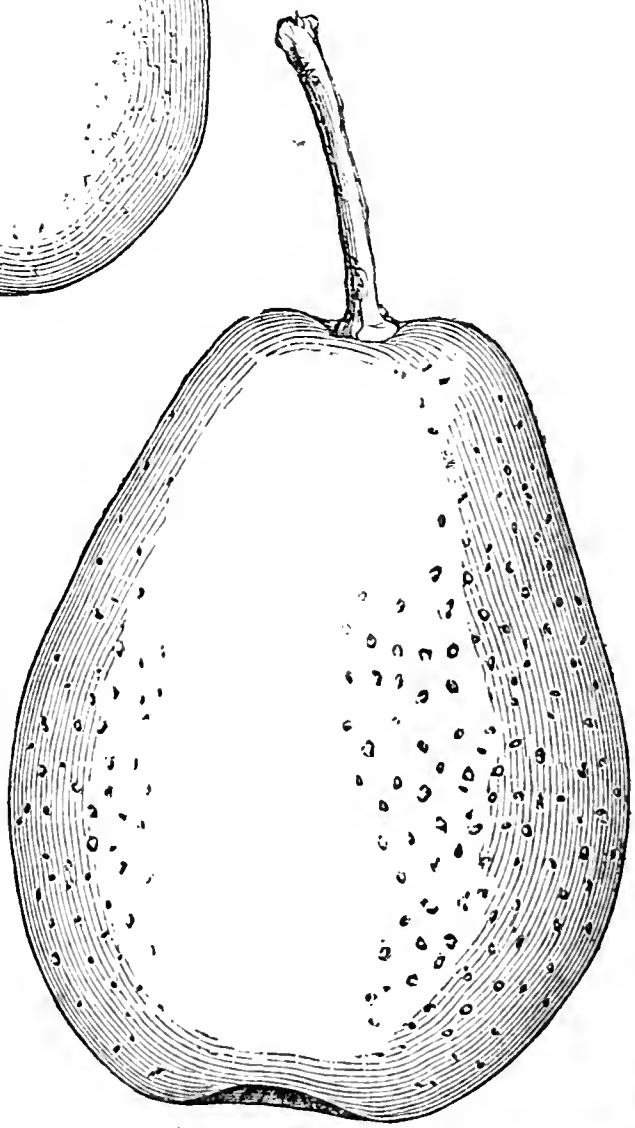


Fig. 3.—*Washington.*

but this opinion no doubt arose from the practice of leaving the fruit too long on the tree. It has since been widely cultivated and generally approved and adopted. It is a native of Rhode Island. It ripens during the early part of autumn.

Washington, (fig. 3.)—This excellent and valuable variety, although known for many years, has not been so widely known and disseminated as its merits deserve. It is a native of Delaware, and succeeds well everywhere except in the extreme North. The tree is hardy and grows on light or gravelly as well as on heavy soil. It is a good and uniform bearer. The fruit is medium in size, oblong-pyriform, obtuse or flattened at each end; skin smooth, clear, light yellow, with many large crimson dots on the sunny side; stalk an inch or more long, slightly sunk at insertion; calyx in a shallow basin; flesh white, juicy, and slightly breaking in texture, very sweet and excellent in flavor. Ripens early in autumn. It does not succeed when worked on the quince.

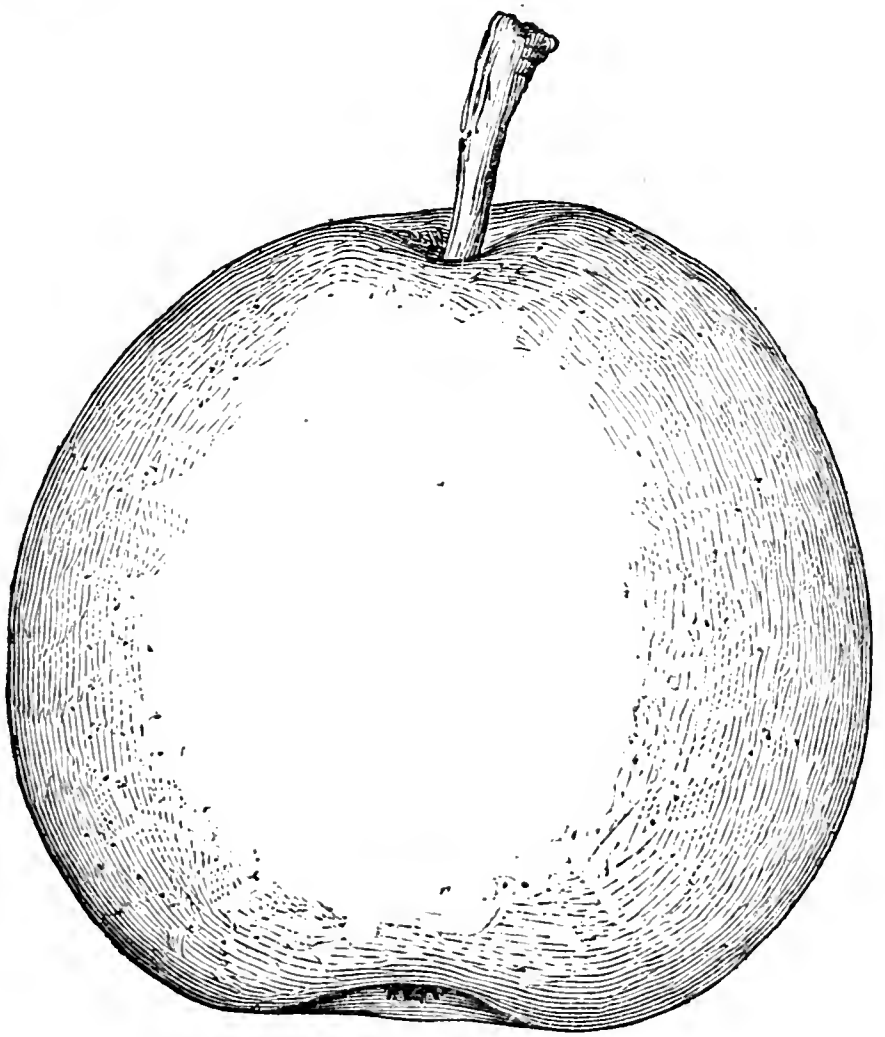


Fig. 4.—*Sheldon.*

Sheldon, (fig. 4.)—No American variety has exceeded this pear in the high character it has attained during the few years of its genersl cultivation.

At the meeting of the American Pomological Society in 1856, C. M. Hovey of Boston, said that he considered it the best pear in America, and that no foreign pear was superior to it; and at the meeting, six years afterwards, P. Barry remarked that he regarded it as one of the finest of all our pears. It originated in Western New York. It is a strong and vigorous grower, (the shoots being yellowish brown in color,) and forms a handsome tree. It bears well, although not usually so young as some other sorts. It grows on the quince only when double-worked, and then probably only for a limited number of years. Fruit rather above medium, sometimes quite large, roundish, somewhat flattened and occasionally approaching obovate. Whole surface covered more or less with a greenish russet, becoming cinnamon brown. Stalk short, in a narrow cavity; basin rather large. Flesh slightly granular, very juicy and melting, with a high, rich, brown Beurre flavor. Ripens middle and latter part of autumn.

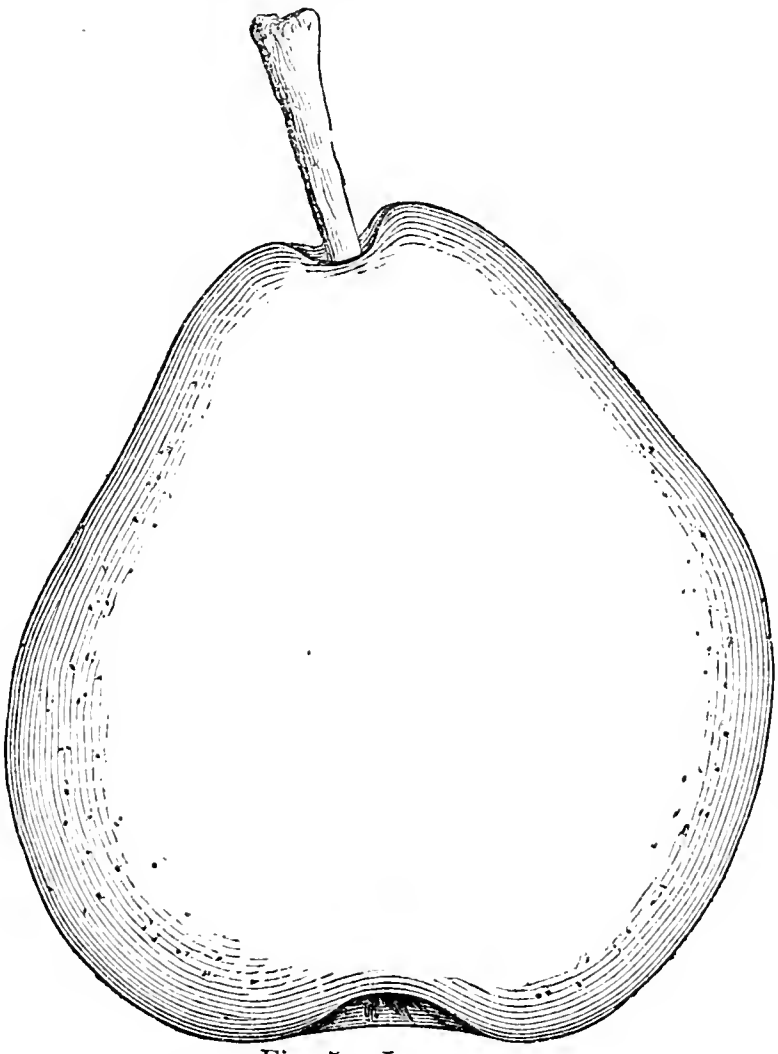


Fig. 5.—*Lawrence.*

Lawrence, (fig. 5.)—No early winter sort is at present more highly valued than the Lawrence. It originated at Flushing, L. I., and has now been generally introduced throughout the East and West. The tree is a moderate but stout and healthly grower, and is remarkable for retaining its leaves late in autumn. In most places it has proved a good bearer. The fruit is medium in size, obovate-pyriform; color clear yellow with numerous fine dots; stalk an inch or more long, set somewhat obliquely in a small cavity; calyx partly closed, set with fleshy wrinkles; flesh buttery, with a very sweet and excellent flavor. This pear keeps and ripens easily and is of uniform excellence. Its time of ripening varies somewhat with the warmth of the season —from late autumn to early winter.

JONES' SEEDLING, (fig. 6.)—A new variety which originated near Philadelphia. Although not extensively tested, it promises to be a valuable, fine and agreeable early winter pear. It is rather below medium in size, obovate-turbinate, being broad at the blossom-end, and tapering to the stalk; often a slight suture from stem to crown; color yellow; whole surface suffused with thin russet; stalk rather small, an inch long; calyx wide in a very shallow basin; flesh very juicy, melting, buttery, with a

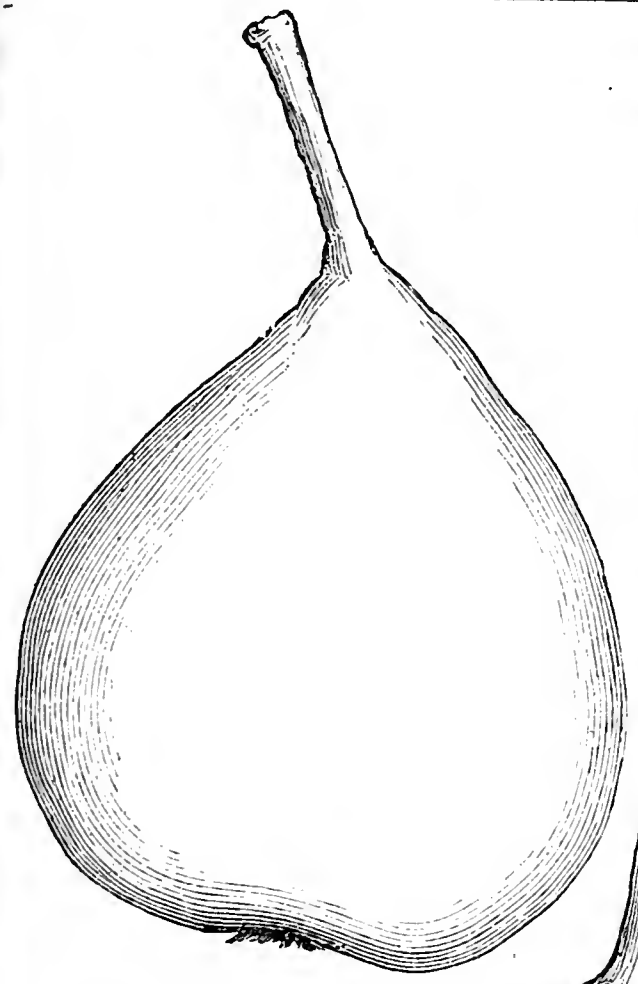


Fig. 6.—*Jones' Seedling.*

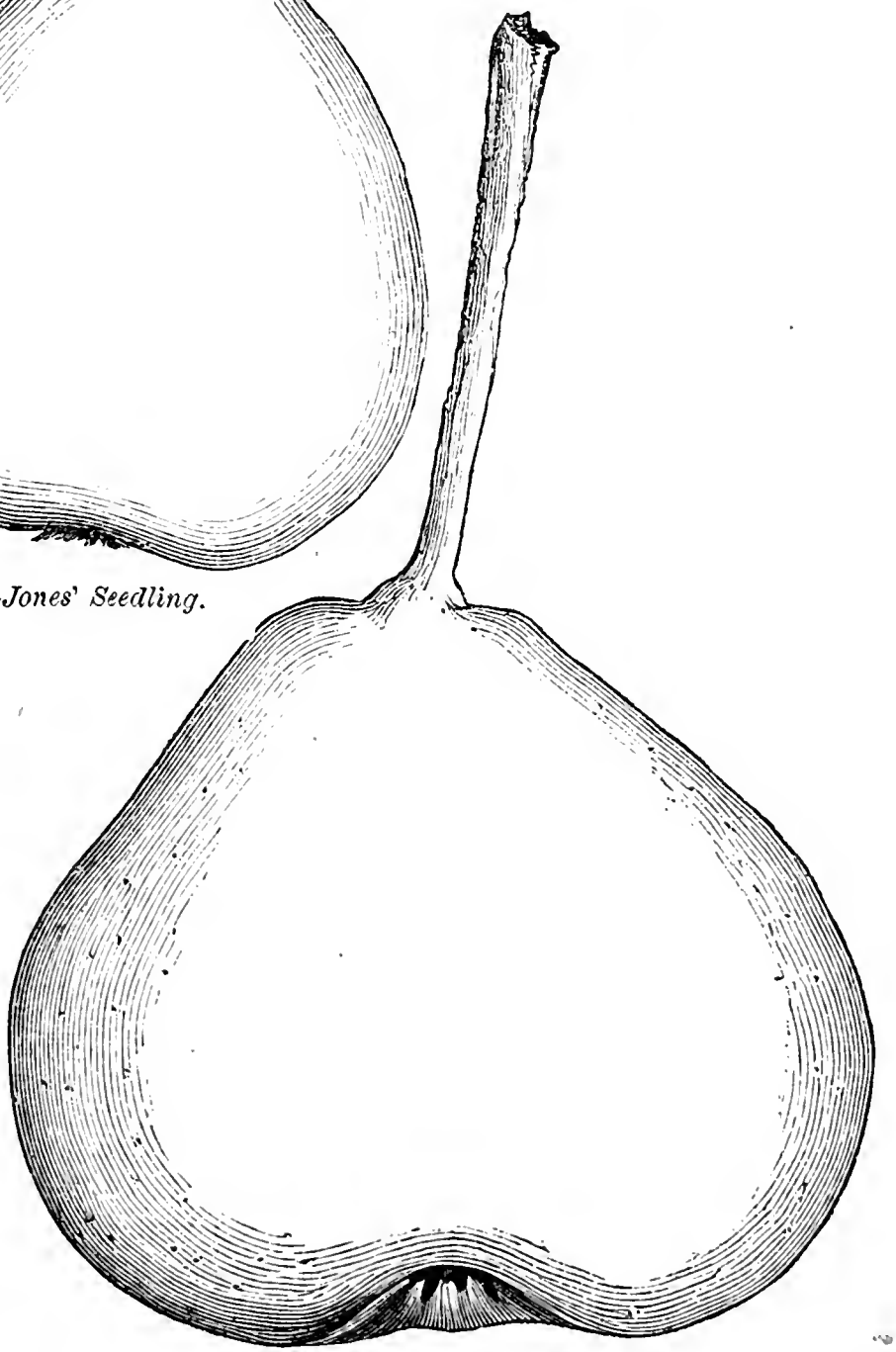


Fig. 7.—*Josephine de Malines.*

pleasant, sprightly, nearly sweet flavor. It is a great and early bearer, and the fruit is a remarkably easy keeper.

Josephine de Malines, (fig. 7.)—This is a foreign variety, and is one of the best early winter pears. The tree is a good grower and forms a handsome pyramid on the quince. The fruit is medium in size, roundish, broad and flattened; skin yellowish with small dots; stalk very long in a slight cavity; basin large; flesh a light salmon color towards the centre, buttery, of a sweet and peculiar flavor.

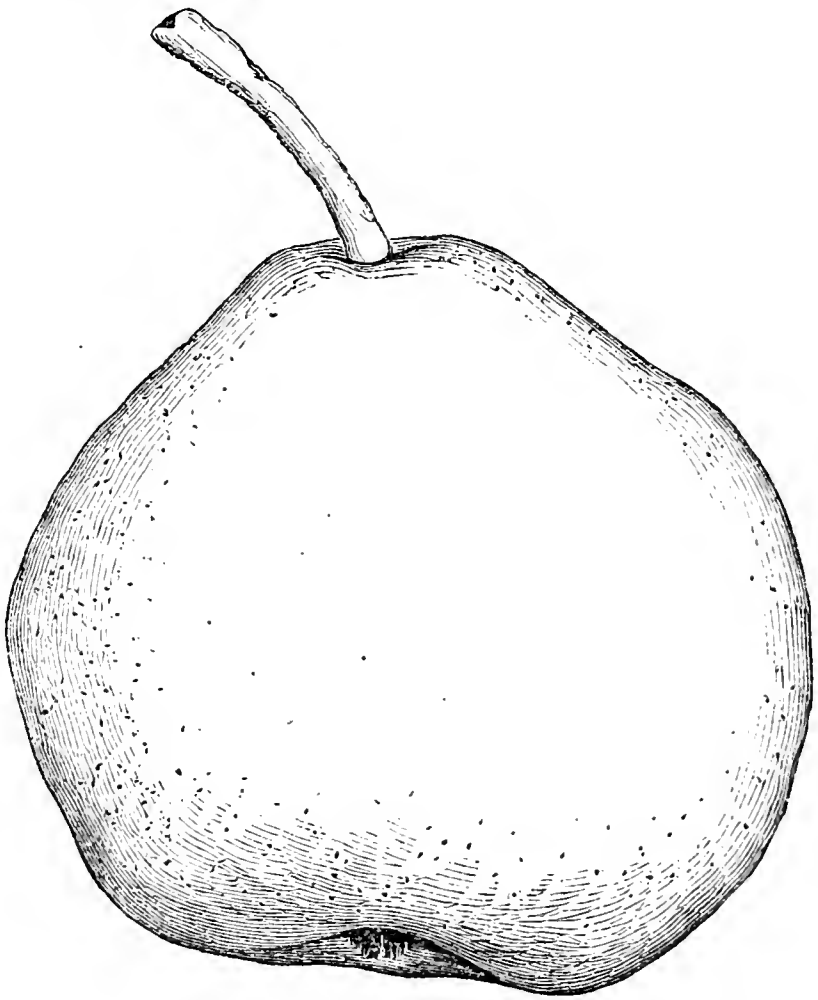


Fig. 8.—*Church.*

Church, (fig. 8.)—This pear was brought to notice by S. P. Carpenter of New Rochelle—a large tree growing in that vicinity, two feet in diameter, and bearing fifteen or twenty bushels annually. It is vigorous and spreading in growth, uniformly productive, and the fruit unvarying in its good quality. A dwarf tree, eight years of age, on the grounds of the writer, is thrifty and bears well.

The fruit on old trees is rather below medium, on young trees usually large; roundish, inclining to oblate, and tapering slightly towards the stem —often slightly ribbed at the crown; color, light yellow, with many small and inconspicuous dots; stalk an inch or more long, set in a slight cavity;

calyx closed, in a slightly furrowed basin; flesh fine, very buttery, melting, with a very sweet, rich and "very good" flavor. It ripens through September.

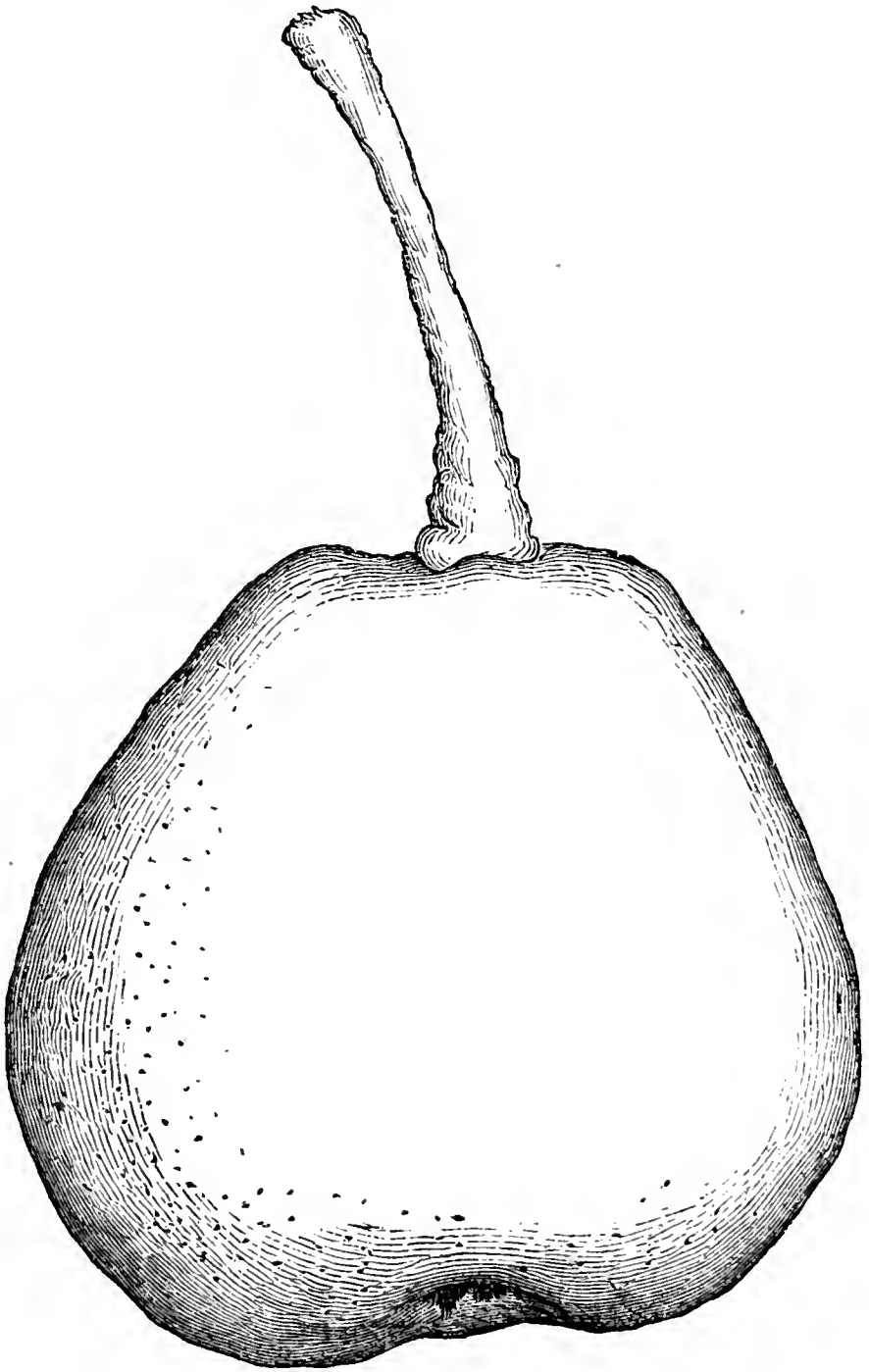


Fig. 9.—*Edmonds.*

EDMONDS, (fig. 9.)—This new variety recently introduced by Ellwanger & Barry, of Rochester, promises to stand among the highest for quality, although the fruit is not so handsome as many others. The tree is productive and a good grower. It ripens in September.

In size it varies from medium to large; form obovate, surface somewhat

wavy or irregular, stem long, stout and fleshy towards the base, set in a moderate, knobby cavity; basin ribbed or uneven; flesh yellowish-white, very fine-grained, melting, with a sweet, peculiar, delicious and excellent flavor—standing as "best" in the pomological scale, and being fully equal to the best Belle Lucratives, and possessing all the peculiar delicacy of the best grown specimens of the Des Nonnes.

The original is an old tree, and the pears being allowed to ripen and fall to the ground, their excellence was never developed nor discovered until submitted to house-ripening—another proof of the importance of rejecting no sort until this mode of ripening has been adopted.

NEW AND DESIRABLE FLOWERS.

Every season we have announced in the seedsmen's catalogues a list of new flowers, under the heading of novelties. These are principally sent out by the seedsmen of Europe. Some of them are improved varieties of well known species, perhaps accidental seedlings of the garden, though often the results of careful and somewhat systematic hybridization. Others are the discoveries of explorers among the wild flowers of Japan, China, and other countries, whose flora is comparatively unknown to the botanists and florists of the more civilized portions of the globe. To this collection we look mainly for evidences of progress in the floral art. Sometimes we are sadly disappointed, as the strangers introduced with such favorable recommendations to raise our expectations to the highest point, do not always bear acquaintance well. Some do not prove better than old friends of the same family, while others are not superior to old acquaintances whose company we have long ago discarded on account of their bad habits. Occasionally

Fig. 1.—*Tagetes Signata Pumila.*

we meet with an old and valued friend, a native of our own country, introduced as a stranger—an aristocratic count, or something of the kind, from a foreign land. Others prove most desirable acquisitions, and I will briefly describe a few of them, introduced during the past six or eight years.

TAGETES SIGNATA PUMILA, (fig. 1,) introduced by Vilmorin, of Paris, is a charming plant, from twelve to eighteen inches in height, forming a globular dense mass. The leaves are finely cut, flowers single bright yellow, marked with orange. A most profuse bloomer.

Fig. 2.—*Double Zinnia.*

THE DOUBLE ZINNIA, (fig. 2,) was first shown in the London Horticultural Society's exhibition in 1860. It was grown in this country in 1861, and no flower has gained such popularity in so short a time. It is admirably adapted to our climate, bears transplanting well, and is in all respects valuable. Every season has witnessed a great improvement in the form and color of the flowers. They are now of every shade of red, scarlet, orange yellow, and we are now looking for a good white.

The Double Portulacca, (fig. 3,) is a most beautiful flower, as double as the rose, and but for the difficulty in obtaining good seed cheap the single varieties would soon be discarded. The *double* flowers produce no seeds,

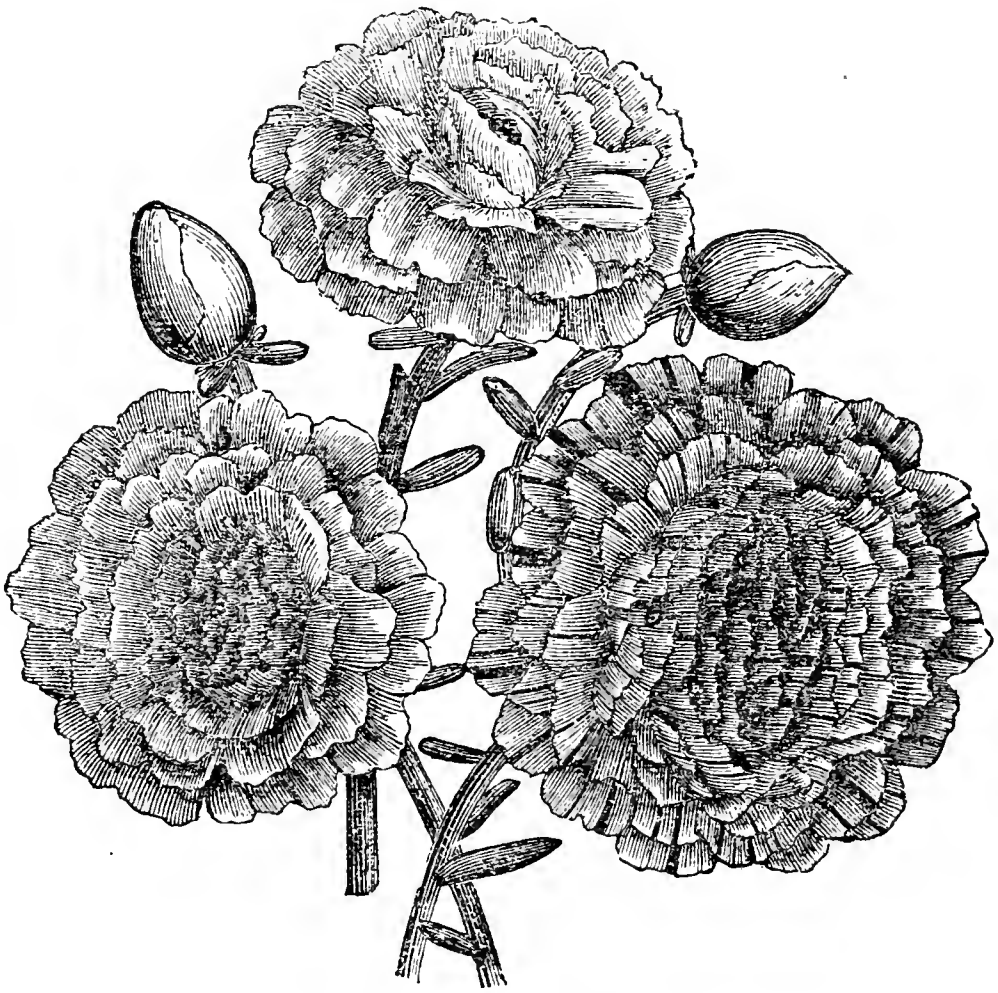


Fig. 3.—*Double Portulacca.*

and all our attempts at hybridization have failed. The best imported usually produce 75 per cent of double flowers, but occasionally there is a failure even in the best foreign seed. The engraving shows three flowers of the natural size, with buds, as grown by me the last season.

Dianthus Heddewigii, from Japan. A decided improvement on the Dianthus Sinensis. Single, very large, and of the most brilliant colors. This was followed by double varieties, very large and showy, though less brilliant in color than the single. Dianthus Lasciniatus, both double and single, has deeply cut edges. The double flower is three or four inches in diameter.

Rodanthe Atrosanguinea and R. Maculata Alba will please all who cultivate the everlasting flowers. The first is of a reddish purple color, and the latter pure white.

Agrostemma Ceolia Rosea Fringed Dwarf, is a great improvement on

Ceolia Rosea, of dwarf compact habit, flowers delicate rose, whitish center, toothed and fringed very prettily. Flowered here the present season for the first time.

Fig. 4.—*Helipterum Sanfordii.*

Helipterum Sanfordii, (fig. 4,) is one of the very best everlasting flowers, of dwarf tufted habit, with large globular clusters of bright golden yellow flowers. The engraving shows a branch of about the natural size and a plant reduced in size which exhibits the habit of the plant. Introduced to this country in 1864.

Tropeolum King of Tom Thumbs, the best dwarf Tropeolum we have ever grown, bluish green foliage, plant of dwarf globular habit, flowers of the most intense scarlet.

Waitzia Corymbosa, a very pretty everlasting, of compact growth, branching, flowers double, rosy white, yellow disk. Blooms freely in August and September.

Other novelties of this season's importations are promising, but I cannot speak decidedly in favor of those I have not named, except perhaps Antirrhinum Tom Thumb. This is decidedly pretty, not more than six inches in height.

J. V.

TRAINING GRAPES AS PYRAMIDS.

This mode of training, if skilfully and neatly performed, presents a fine ornamental appearance, and is well adapted to such gardens as a formal trellis might injure in beauty. It is also an easy and convenient mode for keeping new kinds in shape, until they are sufficiently tested, as a small tree trimmed bare, except a few of its limbs, furnishes a ready support. A larger tree, thus prepared, will answer for grapevines, intended to bear permanently. In this case, the most durable wood should be selected, such for example, as the red cedar. The constant exposure to the dampness and shade of the vine, tends to induce decay. This support is easily set in the ground by driving the sharpened end into a crow-bar hole. The vine may be allowed to grow two or three years previously.

Pyramidal Grape.

In training the vine to this support, a process for pruning may be adopted similar to that employed in fan or spur training—the main shoot or shoots passing spirally around the stem, and the spurs, or short canes, extending outwards and being supported by the diverging limbs. The pruning is best performed by allowing two shoots to grow in an upright

and spiral position, and allowing them to increase a foot and a half, or two feet in length, each year, the surplus being cut back.

The size of these supports must vary with their intended purposes and with the character of the variety. If for permanent bearing, or to continue twenty years or more, they should be much larger than for a few years trial. The Delaware and Rebecca do not need support so large as the Isabella and Concord. The latter, to afford ample room, should be twelve feet high or more, and the side limbs should extend about three feet at bottom, and be shorter as they approach the top. If the part which enters the ground is well coated or soaked in gas tar, this part will last as long as desired.

WINTER EVENINGS FOR FARMERS' BOYS.

Every farmer, whether his business be on a limited or an extensive scale, should labor some with his own hands. He should know practically how to perform all the different farm operations with skill, that he may instruct his men and take the lead in cases of emergency. By doing so he will avoid that feeling of dependance and helplessness which will occasionally come over every one who depends entirely on his hired men. If his farm is small, he may, if he chooses, spend most of his time in personal labor; but if it is extensive, his frequent examinations of every part, and proper supervision of its labors, will render much work from his own hands unadvisable and even unprofitable. But our object at present is to speak more particularly of farmers' sons. While they should learn to do all kinds of work, they should not be worn down by it. The development of the mind as well as of the body, is worth far more to them than large and hard-earned estates. They should not, on ordinary occasions, have to labor so severely as to unfit them, during the season of short days, for evening improvement. There is no greater benefit which a parent can confer upon his son, in order to fit him for success in life, than to give him a taste for intellectual cultivation. Every association should therefore be thrown around him, and every attraction offered to induce mental culture and refinement. The farmer, therefore, who cannot afford separate rooms in his dwelling for a parlor to receive company, and a study or library for his sons, should give up the former for the sake of the latter. A good study-room should at least be secured, whatever else may require to be sacrificed; and this should be made attractive in an intellectual, literary and scientific point of view, so far as may be practicable. Young men and boys will then be less disposed to stroll about during the long evenings of winter, or spend their time in idle talk and bar-rooms, stores and other places where the idle and uncultivated assemble, and where they often acquire the first lessons in smoking, drinking and gaming.

Among the various occupations for evenings, may be mentioned the following: Drawing designs of houses, barns and other farm buildings, and

planning their internal arrangement; sketching objects in natural history, writing essays on rural subjects; consulting and comparing the views of authors; and especially important, the practice of keeping a regular register of passing events. This register may be kept in a single blank book, embracing observations on the crops and the result of management, on the weather, including notices of the winds, clouds, storms, meteors, &c., on the appearances of birds, the advance of vegetation, and on various occurrences, either of an immediate personal nature, or from more widely extended observation. It may be deemed best to procure different blank books for different departments, as, for example, one on natural history, another on agriculture, and a third on the occurrences of the day. Parents should encourage their children to keep such records, as the practice not only improves them in writing, thinking, acquiring information and arranging their thoughts, but such records may be referred to in after years, and will be found interesting as well as valuable in many ways. In order to encourage young people in this practice as well as to perform it in a neat and finished manner, handsome and suitable blank-books may be given to them, as appropriate Christmas, New-Years or birth-day presents; or neat writing desks, or portfolios, furnished in the same way.

The many excellent designs which we receive for publication of various rural contrivances and structures, possessing much merit in themselves, but drawn in an imperfect and bungling manner, show the great and prevailing want of instruction in drawing, or encouragement of its successful study. Every facility should, therefore, be afforded for improvement in this art—pencils, and the best instruments for drawing plans and designs should not only be furnished, but the importance of executing the work in the neatest and most accurate manner, shown to the young artist. We once knew a boy who, without any instruction or guide, selected the most finished and finest steel portrait within his reach as a lesson to copy—and determined to execute the work well. He spent nearly an entire week on one eye and the nose, with great success, for the closest scrutiny could scarcely have discovered any inferiority to the original. Although such extreme care may not be advisable in ordinary cases, yet it is incomparably better than the more frequent hasty, careless, inaccurate, distorted and coarse productions so frequently seen.

An interesting winter employment may be afforded to young farmers, by comparing and digesting the many items of interest comprised in a farm diary kept during the preceding season. The results of various practices may be observed and compared, and valuable information thus derived in relation to the most profitable points in management. A memorandum book may be made from these examinations for the labors of every week during the coming year, which may include many suggestions for future observation and experiment. All these will not only enable the young farmer to reach a degree of perfection and profit which those who depend only on their

memory, cannot attain, but the practice will lead to order and system, and prevent the omission of many essential operations in farm management.

There is no class of scientific studies, connected with rural pursuits, more interesting and appropriate than those of the different branches of natural history, such as botany, mineralogy, geology, entomology, &c. The library and reading room, which every farmer who has children should provide for them, will be all the more interesting for the collection of minerals, the specimens of dried plants, or the cases of insects which it may contain. Skillful young men and boys will construct these cases with their own hands. A farmer's son, whose herbarium contained fourteen hundred species of plants, not possessing much pecuniary means, purchased the paper and bound with his own hands the nine neat and thick folio volumes which contain the specimens. This may not be usually necessary, but the more that young people learn to manufacture and help themselves, they will not only become more skillful and less dependent on others, but will acquire an interest which merely purchased objects will not give them.

WHAT SHALL FARMERS DO?

What should be the aim of the farmer in the present extraordinary position of his business? This is a very proper question to ask at the present time, when the labors of the past season have closed, and while some time yet remains, before the opening of another spring, for a thorough consideration of the subject and arrangement of future plans.

The high price of almost every farm product operates as a strong stimulant to every farmer to make the most of his land; but a serious obstacle is met at the very first step by the extreme scarcity and high wages of farm labor. This dilemma is very likely to lead many to the old and unprofitable course of *skim-culture*, unless prevented by proper intelligence on the subject. Farmers will be tempted, in the hope of doing all they can with a small amount of labor, to omit practices essential to high cultivation and success. They will try to plant and sow fifty acres of land with a force scarcely sufficient to go over thirty acres in the best manner. As a consequence, they will plow wider and shallower furrows, and harrow the land hastily, and trust to good luck in giving heavy crops in return. Heaps of manure will either lie unspread, or if actually applied, will receive less harrowing, and be badly intermixed with the soil. Broad corn-fields will be marked with uneven patches, and be encumbered before autumn with a heavy growth of weeds. In other words, they will have selected, by such management, the very worst system, and that the least adapted of all to the present emergency. Skim-culture requires more labor, for what it obtains, than high farming. Every skillful manager knows that it is easier and cheaper to obtain a thousand bushels of corn from fifteen acres than from fifty. It is

not because the successful farmer obtains occasionally a very large crop or a high price that he makes the business permanently profitable, but because he uniformly raises good crops without failure through all the vicissitudes of seasons. This he can only do by keeping his land in the best condition, and giving the best cultivation. The superficial manager sometimes sees an occasional or accidental good crop raised with little care; and he is tempted to try the same mode in other instances, with the hope that each will prove alike lucky, although the failures may be nine cases in ten—in the same way that weak-minded people venture their property in lottery tickets, although they know their chances are very slim for obtaining anything in return.

It should be a prominent aim at the present time to concentrate labor—not to spread it over an extended surface. The former, if well-directed, will be sure to bring certain returns; the latter, very uncertain profits at best, with a strong probability of failure. Cultivators, who uniformly raise good crops, are those who are careful never to waste labor—who do not apply manure to a wet soil where it cannot possibly afford a fair return; who avoid planting so late that a heavy growth is impossible; or who undertake so many operations that they can never properly accomplish any. They take time by the forelock—they refuse to begin any operation that they cannot carry through in the best manner—they keep all their operations in a compact shape—and by good calculation, and well laid plans, every thing is up to time. They thus obtain more from a given amount of labor than can be possibly reached in any other way. This is the very kind of management suited to the present emergency. The farmer who is compelled to pay two dollars a day to laborers, will receive more by such management than by spreading the labor over a broad and profitless territory.

Every one should know, long before spring commences, precisely what he is able to accomplish, and what he is going to do. If contingencies are depending, plans should be well laid for each contingency. Taking the number of days from the opening of spring until planting time, and allowing one-third at least for raining days and accidents, he should know by the amount required for each day's plowing, how he will come out in his undertakings. If he finds he has marked out too much, he ought to reduce at once the proposed extent of his operations. If he does not, he will be sure, in the first place, to do his work in a hurried manner, and secondly to plant too late—the two great leading causes of bad farming. These will be followed by weedy crops, because he will be behind hand all summer; and his labor, for which he pays two dollars a day, will really cost him four or five dollars, because it will be continually applied to a disadvantage,—to the wrong end of the lever. It is more than usually important, therefore, to examine and digest plans thoroughly during the present winter.

In the meantime, everything practicable should be done now that may interfere with the regular order of labor after spring opens. Fences should be repaired in open weather to prevent that worst of all interruptions—in-

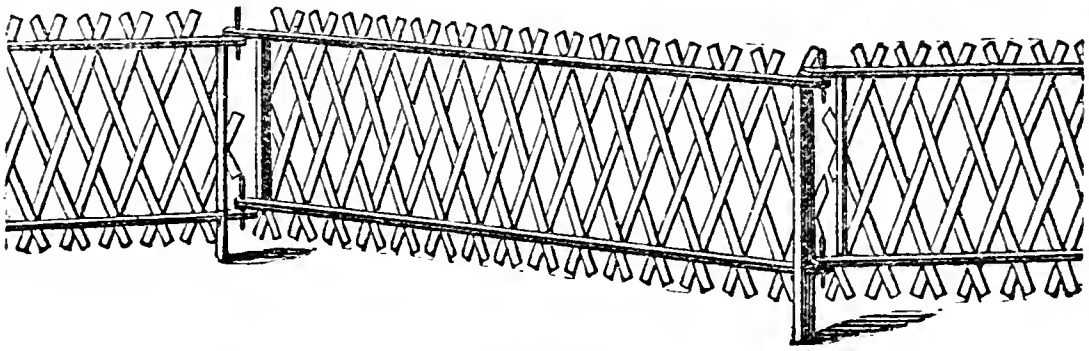
truding animals. A half-year's fuel should be procured and prepared for use. All the manure that is accessible should be drawn out, and spread in the best manner where it is intended to be used—it will be of more value to the coming crop for this early application, and the ground will not be cut up and poached by the horses and wagon wheels used for drawing out the manure on the soft soil of spring; and lastly, and by no means least, procure the very best implements, and have them completely ready when the campaign opens. A hoe that will enable the laborer to accomplish fifty per cent more in work, will not be long in paying for itself at present high wages. The plow that inverts the soil in the best manner, and runs with the least force of draught, will add many dollars' worth of time to the man and team who use it throughout the season.

There is another very essential point to success—and this is that every manager should give close attention to the execution of every part of his plans. An eminent stock-raiser made it a rule to place his hand daily on every one of his animals. If anything went wrong he was sure to detect it immediately. If any improvement was suggested he was able to see it carried out under his own inspection. The extensive farmer will not be able to perform continued labor, for he should witness so far as practicable the operations of every department. And yet if he is a skillful worker, with his own hands he can not only correct many imperfections in the work of his men, but often throw new life into them in cases of emergency. The limited farmer, who has less to oversee, may, to a greater or less degree, occupy himself with regular labor; but still if he is an observant man he will find that it is better to err by too much supervision than by a neglect of many important points involving considerable amounts, for the purpose of accomplishing a single day's work.

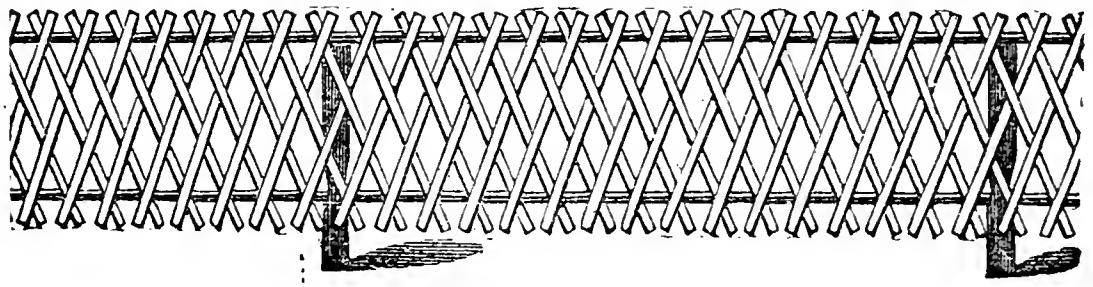
To sum up then—let the order for the coming season be—1st, well-digested plans; 2d, concentrated labor—or everything done in the best manner; 3d, the best tools in readiness; 4th, the performance of everything in winter that may interfere with spring and summer work; 5th, personal supervision of every department.

HAYNES' PORTABLE FENCE.

A few years ago a large number of patents were awarded to zigzag portable fences made of boards. Nearly all these were heavy and cumbersome, and liable to be blown over by winds. Generally they did not answer the purpose. More recently we have met with Haynes' portable fence, which we have found on trial to possess the advantages of cheapness, strength, lightness and neat appearance—at the same time this fence is easily secured against the wind. The accompanying figures represent it as erected according to two different modes. One is the zigzag form, the ends merely resting



Haynes' Worm Fence.



Haynes' Straight Fence.

on the earth or flat stones, and being easily moved from one place to another, as desired. The other is the straight fence, attached to fixed posts. The lengths are so light that 25 or 30 of them can be placed in a two-horse wagon, and two men will easily erect a hundred rods or more in a day. It is easily prevented from blowing over by placing stones in a corner made by thrusting a rod or stick through the fence.

The straight fence possesses the advantage of not requiring faced posts; round or crooked ones may be used by sawing and chipping out a slight notch for the ends to rest on.

A great advantage which this fence possesses is the great strength imparted by interlacing the cross bars, preventing any distortion or sagging. The stuff being sawed of the right size, it is put together with rapidity. The cross bars should be soaked in lime-wash or gas-tar to render them durable.

Where lumber is $2 per 100, the lengths may be made and sold at $1 each at a handsome profit, and at corresponding rates for other prices of lumber.

Single lengths may be used for farm gates, making a neat appearance. They also form excellent sheep and cattle racks, by connecting the ends with short panels made on purpose.

PHILADELPHIA BUTTER.—One reason that we have seen assigned for the acknowledged superiority of Philadelphia butter, is the care farmers in that section take to remove every cow whose cream, partaking of an oily character, does not separate freely from the milk, but is what dairy-women call *ropy*, and will never harden into anything but *oily* butter. The editor of the Rural Advertiser says he once owned one such cow, and her milk spoiled the butter of twenty cows.

FRUITS AND FRUIT CULTURE.

PEARS FOR GENERAL CULTIVATION.—At the last winter meeting of the Fruit Growers' Society of Western New-York, a ballot was taken with the following results:

SUMMER SORTS.

	Votes.		Votes.
Giffard,	11	Osband's Summer,	8
Tyson,	10	Brandywine and Bloodgood, each	2
Doyenne d'Ete and Rostiezer, each	9	Dearborn's Seedling,	1

AUTUMN SORTS.

	Votes.		Votes.
Bartlett and Sheldon, each,	16	Beurre Bosc,	4
Angouleme,	14	Howell,	3
Louise Bonne de Jersey,	13	Washington, Buffum, Des Nonnes, Onondaga Kingsessing, each	2
Anjou,	9	Clairgeau, Church, Superfin, Dix, each	1
Flemish Beauty, Diel, and Belle Lucrative, each,	8		

WINTER SORTS.

	Votes.		Votes.
Lawrence,	15	Josephine de Malines, Columbia, Beurre Gris d'Hiver Nouveau, each,	2
Winter Nelis,	11	Belle Williams, Aremberg, Duc d'Bordeaux, Beurre Bachelier, Alencon, Jaminette, and Jones' Seedling, each	1
Easter Beurre,	8		
Winkfield,	5		
Glout Morceau,	3		

Doyenne d'Ete—C. L. Hoag had found it to crack for the past two years. H. E. Hooker found it to succeed poorly on the quince—overbearing and not proving good. Dr. Sylvester thought that by thinning, this evil might be avoided; while it bears so early, that we may have the fruit almost as soon, if not quite as soon as planted. The only objection to the *Giffard* was its early decaying—which others stated could be prevented by picking early. The same remark was made by several other members in relation to the *Osband's Summer*. This sort, H. E. Hooker said, was not a good bearer, and G. Ellwanger regarded it as of very moderate quality. Several members had found it to bear well only on quince, while a few had it bear abundantly on pear stock. The *Brandywine* had not been extensively tried; a few members had found it a poor bearer. The *Tyson* was highly commended by all who spoke of it. C. L. Hoag of Lockport, said it was remarkably exempt from blight. The *Bloodgood* was not rated high by members, and some thought it should be discarded. P. Barry however, who had a bearing tree for 25 years, had found it uniformly good. The *Rostiezer* was universally commended; the only objection was its tendency to blight. The *Washington* had proved valuable and reliable by the few who had tried—bearing very early on pear stock, and succeeding on no others. The *Buffum* has proved very hardy, a handsome grower, exceedingly productive, and when picked before fully ripe, of fine quality. The tendency of the *Belle Lucrative* to overbear, and as a consequence to become insipid,—and its variable tendency from highest quality to poor,—were the objections mentioned by many, while others always found it good. The *Beurre d'Anjou* appeared

to have no defects, except that of insipidity on young trees, which however disappeared as the trees became older. *Beurre Diel* had proved a fine rich but slightly coarse pear—valuable for its lateness, but apt to spot: young trees and dwarfs moderate bearers, but old standard trees bearing abundantly. W. Sharp of Lockport, had been able to obtain only $18 a bushel for it in New-York, on account of the spots, while the Lawrence brought $24. No objection was made to the *Seckel, Sheldon, Angouleme,* and *Louise Bonne of Jersey*, except that the flavor of the latter was not of highest character, while its fine growth and great productiveness placed it high for general value. Several cultivators had found it the most profitable pear for market. The *Flemish Beauty* appeared to be waning somewhat in reputation—cracking badly with several members—although of the highest value at the West. The *Beurre Bosc* was strongly approved, the only drawback being tenderness of the tree.

A Profitable Orchard.—Thorough preparation and good management are the most economical, even in the fertile regions of the West. The following description of a young orchard is given in the Country Gentlemen by E. H. Skinner, of McHenry county, Ill., a widely known and successful cultivator of fruit. The description would not be less striking if one could be added representing some other orchards managed on the slip-shod principle, growing among weeds and grass, dying from want of cultivation and broken down and browsed by cattle:

My young apple orchard of five acres I wrote you about, set three years ago this November, was this fall a sight to look at. We gathered 103 bushels of Wagener and 14½ barrels of New-York Pippin (Ben Davis) from it, and sold at five dollars per barrel as soon as gathered.

This should be enough to convince sensible people that *it pays to subsoil and prepare land thoroughly for an orchard!* This orchard of five acres has already paid for itself, and I would to-day refuse $1,500, were it offered me for it. Have just sold ten acres of orchard set out six years, for $200 per acre. This we call a good orchard, though it can never equal the one above mentioned, simply for want of first preparing the land. What I once called good preparation I now call "slip-shod."

My dear sir, the facts are simply these—to have an extra orchard, we must go to the bottom and make the whole field as mellow as a garden bed, *not less than twenty inches deep.* We were at this kind of work when it froze up, with four men, four teams and two plows, and could not fit up more than half an acre per day. Some, as they pass by, laugh at me for my extravagant notions as they call them, or my "one idea," but I have shown them this summer that one good idea is better than a dozen poor ones. On one acre and nineteen rods of land I raised 162½ barrels of extra apples, getting an extra price for them. This acre and nineteen rods netts over $1,000—one thousand dollars! *Whose corn-field pays better?* Nearly one-third sold at eight dollars per barrel, and most of the balance at seven

dollars per barrel. The variety, Carolina Red June, is one that has been thrown out by some cultivators simply for want of proper cultivation. Without cultivation it is one month later in ripening, and worthless here. With good cultivation it is a good apple; with extra cultivation it is an extra apple. It only wants good feeding.

Apples for Market.—Among the varieties in whose favor a large vote has been given by experienced cultivators for Erie, Pa., are the following: Baldwin, Rhode Island Greening, Jonathan, Roxbury Russett, Westfield Seek-no-further—and less tested, Tompkins County King and Northern Spy. Various cultivators have other favorites.

Best Varieties of Hardy Grapes.—The Fruit Growers' Society of Western New-York, took a vote from its members on the best varieties of the grape for succession, in that district. Thirty-one ballots were given with the following result:

	Votes.		Votes.
Delaware	20	Rebecca	21
Diana	26	Concord	14
Isabella	25	Creveling	12
Hartford Prolific	23	Catawba	9
Iona, Perkins, Allen's Hybrid, To Kalon, and Northern Muscadine, each	2	Lydia, Adirondac and Israella, each	1

The Best Strawberries for Family Use.—At the summer meeting of the Fruit Growers' Society of Western New-York, at Rochester in 1865, a ballot was taken for the best 6 varieties for family use, and resulted in the following vote—those receiving the highest number would, of course, be understood as being the more general favorites in Western New-York—33 votes being given in all:

	Votes.		Votes.
Triomphe de Gand	30	Jenny Lind	4
Early Scarlet	26	Crimson Cone, for Canning	3
Russell and Wilson, each	23	Agriculturist	3
Hooker	22	Buffalo, Austin and Longworth, each	2
Burr's New Pine	12	Red Alpine, White Alpine, Cutter's Seedling, Jenny's Seedling, Genesee, and La Constante, each	1
Hovey's Seedling	8		
Victoria and Brighton Pine, each	5		

Plowing among Trees.—In plowing orchards, in addition to the usual precaution of using oxen, or one horse placed before the other ad tandem, use a plow with a movable beam, set so as to run as far to the left as possible when plowing away *from* the trees, and set so as to run to the right when plowing up *towards* them.

Raspberries.—At the summer meeting of the Fruit Growers' Society of Western New-York, in 1865, H. E. Hooker, a distinguished cultivator of Rochester, named the following as the best six varieties for general cultivation, viz: Brinckle's Orange, Hudson River Antwerp, Franconia, Knevett's Giant, Hornet, and Black Cap. Charles Dowing named Brinckle's Orange, Franconia, Hudson River Antwerp, Vice President French, Fastolff and Clarke, a new variety originated at New Haven. These varieties were generally regarded by the members present, as the best.

Raising Peaches far North.—L. Bartlett, of Warner, N. H., states that he obtains regular crops of peaches by keeping the branches bent down near the earth where they are confined by hooked wooden pins. The covering of snow protects the fruit-buds from the cold. He has found trees thus treated to ripen fruit ten days earlier than when entirely exposed. Covering such prostrate branches with corn-fodder or with a dense mass of evergreen boughs in the absence of snow has answered equally well. It is more difficult to protect them standing above ground, as they are exposed on all sides to the wind, and do not receive the warmth of the earth.

Horticultural Brevities.—One good Tree or Plant cared for, is worth a dozen poor or neglected.

Hardy Sorts, Low Heads, Moderate Growth for Severe Climates.

Kill the Weeds and keep out the Cattle.

Remember that low heads make much the best trees!

Kill the Worms, and sacredly spare the Birds to help you!

Shade for Summer and Shelter for Winter!

Be not like some, always "trimming up" your trees!

Keep soil mellow and free from weeds around Shrubs and Plants!

Tobacco juice and smoke kills plant lice and injures many men!

Small fruits, remember, commence bearing so soon!

Most cultivated plants thrive poorly in the shade!

Flowers—Emblems of Beauty and Innocence—Earth's kisses, God's smiles.

O! for a spot where Summer smiles and Flowers perennial bloom!

How pleasant and healthful for Ladies to cultivate Flowers.

Botany and living Sciences before dead languages.

Most plants winter best covered with leaves or litter in the fall.

A fine, well-turfed lawn is one of the very handsomest home adornments.

Home, Children, Flowers, Music—true Sweets of Life! F. K. Phœnix.

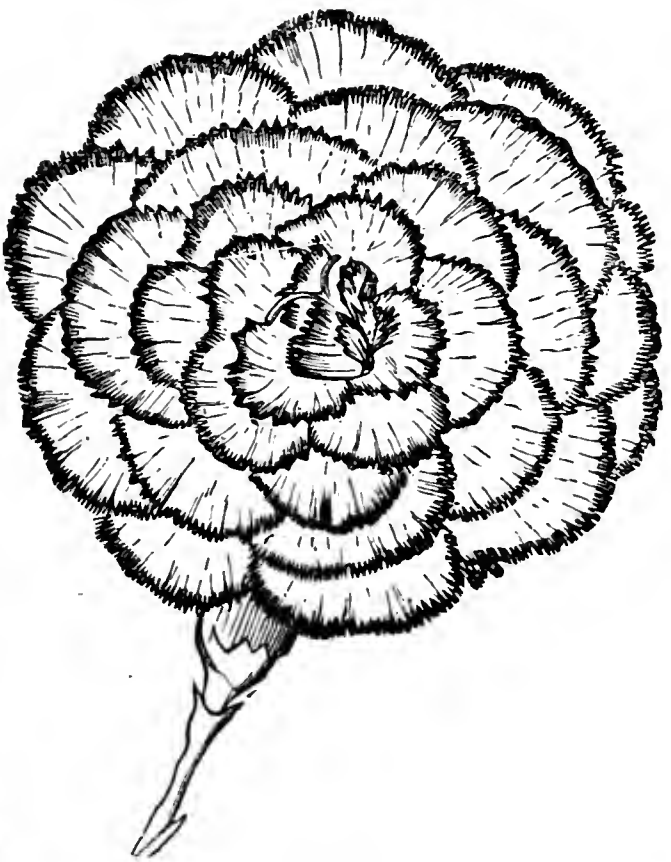
Fruit Trees of Handsome Growth for Shade.—Among the handsomest growing pear trees, that bear fruit of excellent quality and grow rapidly, are Buffum, Howell, Flemish Beauty, and Washington. Skinless is also a rapid grower, but not quite so symmetrical in form. Urbaniste is a handsome tree, but grows rather slowly. Jaminette is a fine grower. Among cherry trees of good form, are Black Tartarian, Burr's Seedling, Coe's Transparent, Napoleon Bigarreau, Downer, Reine Hortense, and Black Heart.

Apple Orchards.—The best market varieties at present generally cultivated are the Baldwin and Rhode-Island Greening. These stand first on the list of most market orchardists, but others think that the Roxbury Russet for its long keeping and adaptation to spring marketing, will prove more profitable. The Tompkins County King is an excellent and showy apple and sells at high prices, but is less productive than the above. When fruit of very fine quality is more appreciated, the Northern Spy will probably take a high stand. There are several other varieties that may be added to the

above, the value of which cultivators differ upon, such as Peck's Pleasant, Golden Russet, Fall Pippin, Seek-no-Further, Jonathan, Newtown Pippin, Hubbardston Nonsuch, Esopus Spitzenburgh, &c. Trees do best when transplanted when young, say two or three years from graft, not more. Thirty-five feet is a suitable distance asunder. Setting out "natural" trees will do where they happen to be on hand, and where the owner has not certainly fixed on the sorts; and it is also well suited to the northwestern regions of the United States, where severe winters frequently injure or kill trees worked near the surface of the ground.

With regard to markets 15 years hence, we cannot speak with certainty, but rather in relation to present management. Judging, however, from the past, from the rapid increase of population, from the inherent fondness of good fruit in all the human family, from the fact that fruit if not saleable is an excellent feeding for domestic animals, and especially from the fact that fruit on well-managed orchards, thinned and selected, will always bring cash readily, no matter how abundant poorer apples may be, we think that it will not be hazardous to plant more orchards—unless, as is generally the case, they are neglected or but half cared for.

CULTURE OF FLOWERS.



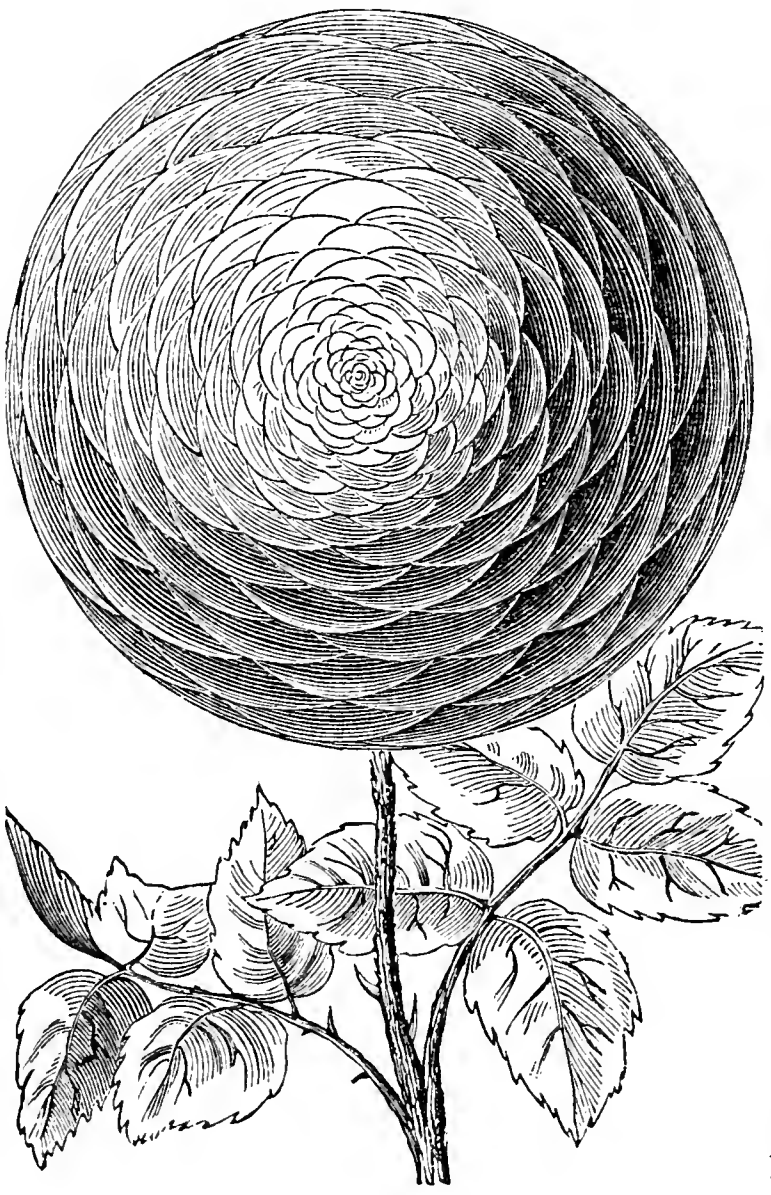
Pink.

The following excellent practical suggestions were kindly furnished us, in reply to inquiries, by C. L. Allen of Brooklyn—one of the most enthusiastic and successful cultivators of flowers with whom we are acquainted.

It has always been hard work for my thoughts and feelings to ooze out at the point of a pen, particularly so when they are dwelling upon flowers—the purest, sweetest, loveliest things God ever made, except little children. Were I to try I could not do them justice. I cannot even think, much less write, as well as they deserve.

The question is not now whether we are are to have

flowers or not, but when and how to get the best and finest varieties, and what kind of cultivation will bring them nearest perfection. With us in the city, the question is, how shall we manage our two to four hundred square feet of garden so as to have flowers at all times. Most people answer it by going to the greenhouse—buying say $25 worth of plants—put them out—let them dry up and die, and say they don't know what is the trouble, but they cannot raise flowers.



Perfect Rose.

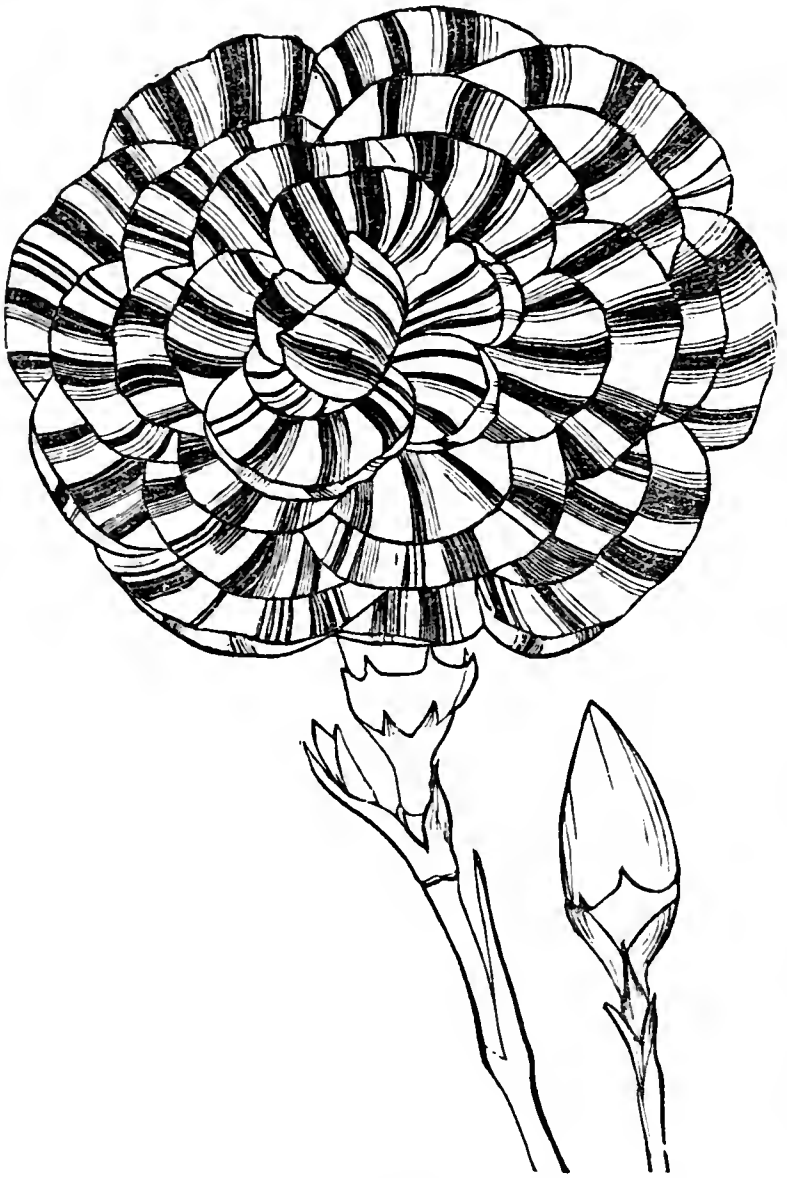
To answer all the questions in full, would be to write a volume, which of course I cannot do—consequently I must dwell briefly on each point:

1st. What is the most common cause of failure? Not having a sufficient love for them to devote the time and attention necessary to obtain a thorough knowledge of their nature and habits. It is as easy to raise a flower as to do any thing else, when you know how.

2d. What are the principal requisites necessary for success? Good soil, good seed, and good care, will in every case produce good flowers, and plenty of them.

3d. What time for sowing—early, late, or medium, &c.? That depends wholly upon what you want to sow; some things *must* be planted early, others must be late. If one rule was to apply to all seeds, I should say the medium by all means. Seeds that are sufficiently hardy to live out all winter, should in all cases be sown as soon as the ground is in order. For Mignionette, Candytuft, Alyssum, Phlox, Drummondii, a succession of sowing

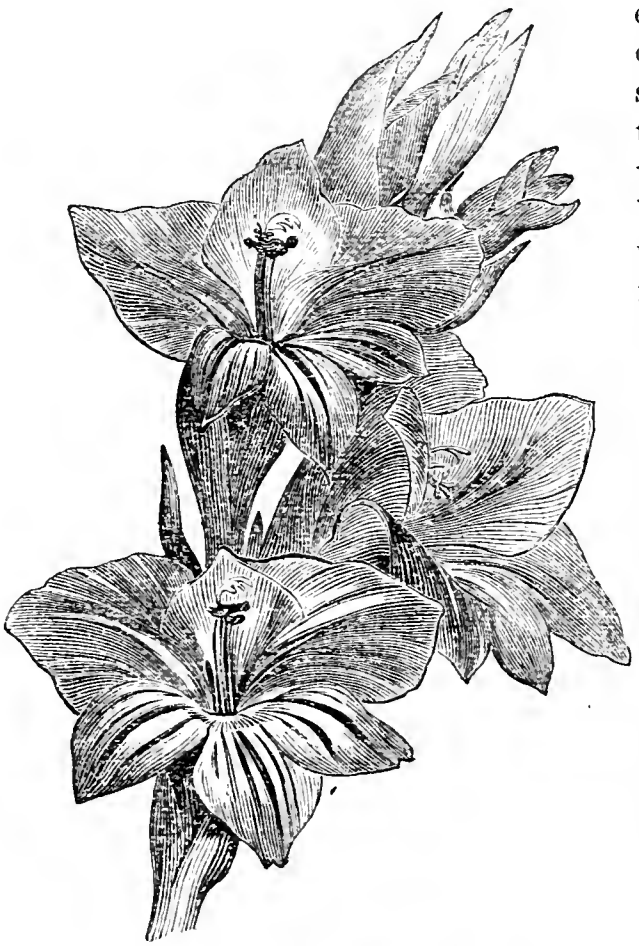
is indispensable. There can be no general rule laid down for sowing—each plant has peculiarities of its own, that demadd special treatment in order to have it succeed well.



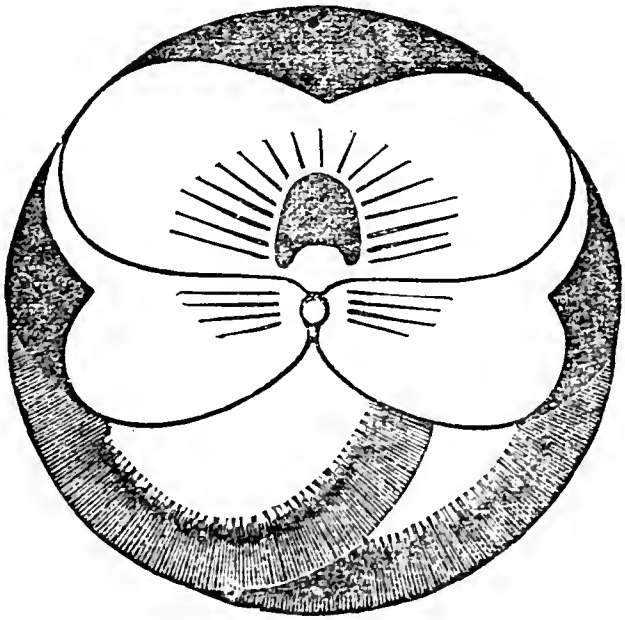
Carnation.

4th. What flowers are the most difficult to raise? Those we know the least about. One plant will do as well as another, providing you know how to manage it. I find no difficulty in raising anything I undertake, simply because I will not buy a seed or plant without first finding out whether it is likely to succeed in my soil and situation. By many the Tuberose is considered the most difficult of all our garden pets to manage; there is nothing in my garden that does better, or gives me less trouble. I treat them as follows: Take the flowering bulbs and break off all the offsetts; do not leave a single one; put them in a light friable loam, with a liberal mixture of leaf-mold and well rotted cow manure; in case of drouth give them plenty of water, and the work is done, and you will soon be amply rewarded by delicious perfumes. For early flowering, I start them in pots about the first of 3rd mo. (March.)

5th. What are the most essential points to produce success in germination? That depends altogether on what you want to germinate; in this, as in all other branches of floriculture, knowledge is success. The most common cause of failure is planting too deep; secondly, in not having the soil properly prepared. Some gardeners do not sow, but literally bury their seeds, then cover them with soil too coarse to cover over potatoes, and then, of



Gladiolus Gandavensis.



Pansy.

course, marvel that their seeds do not come up. Do not sow seeds of delicate plants until the ground is warm; do not sow when it is wet; the soil should be nearly dry; put the seed on the top, then sift on through a fine sieve, fine mold to the depth of from one-eighth to one-half inch, according to the size of the seed. Should it remain dry a few days, use the sprinkler, and success is certain. After the seeds have sprouted, rain is all that is needed.

6th. What treatment in growth yields the most satisfactory results? How with regard to pinching in, distance asunder, manuring, shading, &c.? I raise plants on purpose to *pinch* them, and do it as fast as they flower, but at no other time; the more you cut flowers, the more you get; always encourage growth of plant; never dictate the shape it may choose; as for distance asunder, that depends upon circumstances. My ground is completely covered, (or soon will be,) because I want a great variety on a small space. Where there is room, it is decidedly preferable to give each plant sufficient room to grow without crowding its neighbor. Verbenas should be put in rows three feet apart; Balsams, the same; Asters, one and a half feet. As for manuring, that is the most important part of the whole. Flowers must have rich soil to do well. My experience has been somewhat limited, but it has taught me not to expect large re-

turns from small investments. For most plants you cannot use too much. I cover my ground with three inches in depth, every fall, of well rotted cow manure. Do not use it until it is two years old, as plants are too delicate to stand the heat from new manure.

Lilium Longiflorum.

7th. What is the best treatment for Cypress vine? I prepare my ground as fine as possible, sow the seed on top, barely cover them with fine mold, at evening sprinkle with boiling hot water; if the following day bids fair for a "scorcher," cover with a board. They are sure to be nicely up within 48 hours from time of sowing. I cover my fence with that beautiful vine. Should sow in a circle, as I used to do in Union Springs, if I could spare the room.

8th. Please furnish a list, &c.? My choice is as follows:

1. Roses.
2. Tuberoses.
3. Fuchsias.
4. Gladiolus.
5. Asters—Truffaut's are the best.
6. Verbenas.
7. Phlox Drummondii.
8. Heliotrope.
9. Balsams—Smith's or Glenny's are best.
10. Mignionette.
11. Lilies—Japonica, Lancifolium, &c.
12. Alyssum.
13. Candytuft.
14. Pansies.
15. Feverfew.
16. Carnations.
17. China Pinks.
18. Lemon Scented Verbena.
19. Geraniums — Rose, Fish, Lady Washington.
20. Lantanas.
21. Ageratum
22. Spirea.
23. Tigridias.
24. Dielytra.
25. Double Zinnia.

This list comprises those that I cannot do without; of course I have many others. It would be but the commencement of the list if I had room, which some day it may be my good fortune to have.

How to have a Good Lawn.—Make the soil deep, rich and mellow by subsoiling or hand trenching, as circumstances may dictate. If not now fertile, work in thoroughly and intimately a large quantity of fine manure, taking the greatest care that this manure be evenly distributed, or else green spots and patches will disfigure the lawn. Sow very early in spring, and roll or brush in a dense seeding of lawn grass, which may be obtained at Thorburn's and other large city seed stores. It should be applied at the rate of at least two bushels per acre. If sown very early, it will come up quickly and evenly, and should be mown when a few inches high, repeating the process every week through the season, and will in a few weeks furnish a fine, handsome, close turf.

FARMING AND RURAL ECONOMY.

Clover in Rotation.—One of the best courses in which clover is brought in largely, and consequently one in which the soil, whether light or heavy, may be constantly improved, is the following:—

First year.—Clover—collect all the coarse manure in heaps, either to rot down with straw, or to be composted, ready for autumn use. In autumn, spread this over the clover very evenly, to remain and wash into the soil till spring.

Second year.—Turn over the sod in the spring to a medium depth—mellow the surface with Shares' Harrow—mark, and plant the corn. Cultivate as often as once a week from the time the corn is up, until too large for the horse to pass—at least six times in all, or from the middle of June to the end of July, in the Northern States. Hoeing is of secondary importance, and is useless unless the ground is weedy.

Third year.—Plow and sow early in spring with oats, barley or spring wheat, accompanied with a heavy seeding of clover.

Fourth year.—Cut the clover early for hay, and when it has a good second start, turn it under for wheat. If the land is not very rich, or if it is heavy and liable to heave, spread over the surface a moderate coat of fine manure after the plowing, and harrow it in before seeding.

Fifth year.—Seed down clover again with the wheat.

Six and Seventh years—the land may remain in clover two years, but not longer, when it is again manured in autumn as before, to be plowed for corn the following spring.

If the land is not strong, or if there is not a large supply of manure, the oats, which is rather exhausting, should be omitted in this course, supplying its place with barley, peas or early beans.

Smooth Meadows.—The general use of the mowing machine will, we trust, make a great improvement in the external appearance of farms. Stumps, bushes, stone heaps and obtruding rocks, must disappear. Hillocks and hollows must be reduced or filled up by good plowing and thorough harrowing. The roller must have its share in this improvement. The surface of the land having been cleared of large obstructions and stones, small stones may be pressed into the soil by the use of this implement. Some of our best and neatest farmers make it a rule thus to pass over their meadows every spring. If the soil is light, gravelly, or not adhesive, but little care is necessary, but where clay forms a considerable constituent, caution must be used not to touch the surface when it is so wet as to become crusted by the operation. It should always be so dry that the earth will crumble and not pack. Some have pronounced the roller positively injurious by not observing this care.

Renovating old Meadows.—Where the land admits of a regular rotation, the best renovation is to plow up, manure and re-seed heavily. If lightly seeded, the grass will be coarse and the crop less heavy. A very thick seeding makes a fine feed, like that from old grass lands.

If the land cannot be plowed, an excellent mode is to harrow the surface thoroughly with a very sharp harrow, early in spring, when the soil will crumble finely, and sow grass seed. If the surface has been coated with fine manure the previous autumn, the seed will take with more certainty, and the growth be much stronger. In addition to this, a fine, even top-dressing the following autumn will be a great improvement. Scattering the manure in lumps, or spreading coarse stuff, will be of little use, unless afterwards finely broken up and evenly spread. The top-dressing should be repeated as the fertility of the soil may require, once in one to three years. If the surface tends to produce the growth of moss, the addition of lime or ashes with the top-dressing, and before the harrowing, will be useful.

Thick Seeding Clover.—A correspondent of the Country Gentlemen, in Orleans county, N. Y., says that while he has seen grain sown so thickly as to fail in securing a good plump seed, he has never seen clover so thick as to make any difference in the quality of the seed. He finds that a peck of clover seed and half a peck of timothy are not too much, but succeed better than a smaller amount. The second growth is always less branching and more uniform than the first growth.

Fire-proof Shingles.—J. Mears states in the Boston Cultivator, that after an experience of eleven years, and using seven forges in his blacksmith shop, he has never seen a shingle on fire nor has a nail started. White-wash was made in a large trough, of a bushel of lime, half a bushel of salt, and five or six pounds of potash. The shingles were set in up to the bands for two hours, and then turned end for end. When laid on the roof they were brushed over at intervals of two or three years after. Quite dry shingles would absorb this wash the best, and with the bunches opened.

Grain Scoop.—A correspondent of the Genesee Farmer has successfully used a grain scoop for filling bags made as shown in fig. 1. One hand grasps the bow handle and the other handle at the end. A half bushel is easily scooped up at one operation, and the bags filled in one-half the time required in using the common scoop shovel.

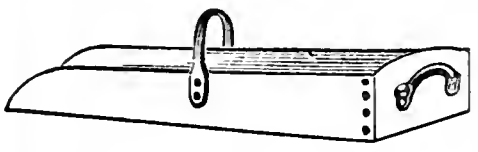


Fig. 1.—*Grain Scoop.*

Corn Fodder in Drills.—H. S. Collins of Conn., states that he can grow twice as much corn fodder on an acre of land, by sowing it in thick drills three feet apart, and cultivating twice, as by simple broadcast sowing. Our own experiments give a result in favor of drills nearly as great as this, besides leaving the ground clean.

Manure from Cows.—S. Williams of Waterloo, keeps this kind of manure perfectly loose and easily scattered and spread for garden purposes, by

using turner's hard wood shavings for bedding. These prevent the manure from becoming compressed and hardened into a solid mass.

Contrivance for Hiving Bees, (fig. 2.)—Take a board as large as the bottom of the hive, bore a number of holes through it, and insert corn cobs through these holes; then nail securely a handle 8 or 10 feet long, to this board. Nail a narrow board so as to form a sort of hood over the cobs when it is set up. Make a slanting hole with a crow-bar in the ground, and thrust the pole or handle into this hole. If these cobs are dyed of a dark brown color, the bees will be almost sure to light upon them. But should they light on the branch of a tree a few gentle taps against the limb, will induce them to leave it and adhere to the cobs. These, from their rough surface, will enable the bees to hold on firmly. When they have settled, take out the pole, lay the instrument flat, and place the hive on the board which holds the swarm, and the thing is done. In large apiaries two or three of these may be on hand for use.

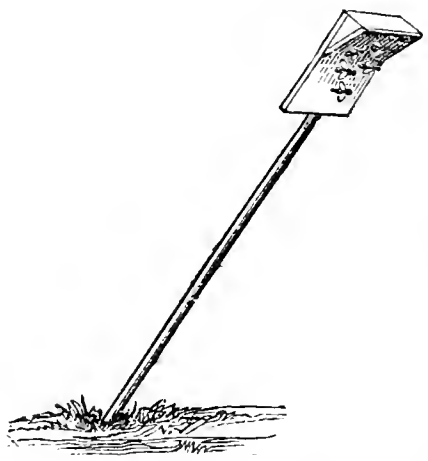


Fig. 2.—*Bee hiver—made of board with corn-cobs set in.*

Drill Cultivation.—The great scarcity of labor in this country should induce farmers to resort to a more rapid and wholesale mode of cultivating their crops. A horse which takes but one row at a time, requiring one man's entire attention, can not perform labor profitably, although this may be the only mode for rough, stony, or imperfectly cultivated land. If stones, roots and other obstructions are all removed, and the soil made uniformly fine and mellow, a better system of management may be adopted. The crops may be planted in perfectly straight and parallel rows by drilling machines, and in cultivation several rows taken at once. In England, Garrett's horse-hoe is successfully used for this purpose, dressing out at once many rows of root-crops, and cleaning a strip seven or eight feet wide at a passing. The drills being perfectly parallel, in consequence of having been planted by a machine, all that is necessary in cultivating with Garret' s horse-hoe is for the operator to watch a single row only, and guide the blades within an inch of this row. The others all do the same. This implement is not only used for roots, beans, &c., but in the cultivation of drilled wheat. It is used first when the plants are only an inch high, and not only cuts up the weeds, but accelerates the growth of the crop by the pulverization of the soil. Its use is discontinued when the roots have extended so as to fill the spaces between the rows—although doubtless even at this time, a surface-dressing would do more good than harm.

Piling Cord Wood.—In piling cord wood place the bark side upward, as it will then turn off the water, keeping the wood dryer, and preventing the bark from dropping off and being lost when it is moved.

Utility of Clover Roots.—On all compact, heavy and tenacious soils there is nothing better than a crop of clover to loosen and render it friable. Any one who has seen the difference between the state of pulverization in every inverted piece of sward land where only timothy and other similar grasses have grown, and where a dense mass of clover roots have struck down deeply and penetrated every part, will need no further argument on this subject. The fertilizing effect of the clover crop is also one of its most important advantages.

Gas Tar.—The advantages of this material as a preservative of all porous woods, where exposed to much moisture, cannot be too fully appreciated. We know an instance where a common pine vat, constantly exposed to moisture and air, rotted in two years; it was replaced by another, coated when very dry and warm, with two applications of hot coal tar; after the lapse of 15 years it is still sound. Fence posts might doubtless be rendered very durable by first seasoning thoroughly, and then immersing 2 or 3 feet of the lower ends, for a few minutes, in a large kettle or cauldron of coal tar. For the more porous kinds of cedar and other woods, into the pores of which the tar could penetrate freely, it would be most valuable.

This material is also excellent for all mortices, joints of gates and of the boards in fences where decay is otherwise apt to commence soonest. The only objection to its use on fully exposed surfaces, is that the black color absorbs the sun's rays too freely, and, by heating, tends to produce warping and cracking. For such purposes lime-wash is valuable.

Apples for Stock.—Never throw away windfalls or poor apples, or allow them to waste, no matter how abundant the crop may be. Moderate and regular quantities fed to milch cows late in the fall and in winter, will improve their condition and appearance, and increase their milk. The health of horses will be improved by a portion of this succulent food, when confined to hay and grain. The richer sorts of apples are excellent for fattening and keeping store-pigs. Fed to sheep in connection with hay and grain, they produce an excellent effect. Provide, therefore, ample dry bins in your barn and other cellars for storing these refuse apples, and they will save a vast amount of grain.

Materials for Repairs.—Every farmer, and especially those who are some distance from mechanics' shops, should be well provided with all the usual materials for repairing tools, implements, &c., as the delay in their use is often many times greater than the cost of putting them in order. Provide boxes with apartments, and purchase at hardware stores a supply of screws and nails of different sizes, screw-bolts with nuts, and nuts alone, rivets, coarse and fine annealed iron wire, copper wire and pieces of copper straps, common and tarred cord, twine, scraps of leather, paint with paint brushes, varnish and all the necessary tools. The great flexibility of copper wire and copper straps render them very useful on many occasions.

Rotation.—1. Corn, with all the coarse winter manure. 2. Peas or bar-

ley. 3. Wheat, with a top-dressing of fine manure or compost, to be followed by clover, and then corn again. On very strong soils, oats may take the place of barley. We have known this rotation to be varied by allowing the clover to remain one year, and then to turn it over and sow wheat with clover—the second crop of clover to remain two or three years, to be inverted for corn as before.

Corn Fodder.—Corn fodder is very liable to heat or become mouldy, unless packed away where it can receive constant ventilation, the mode of which must be according to circumstances. If in stacks, the stacks should be small, with three or four poles or rails set upright in the centre, to form a chimney for the hot air to escape. If packed away in barns, it must not be in large masses. Large varieties of corn, with coarse stalks, usually form crevices enough for some air to circulate; but small corn with fine stalks, and especially corn sown thick for fodder, packs very solidly together; and there is always enough juice in the stalks themselves, no matter how dry the leaves may be, to produce heating.

Remedy for Birds Pulling Corn.—I have almost entirely prevented the birds from taking up corn this season, by sowing *soaked* corn liberally around the planted field, especially near grass fields, where our red-winged black birds are most plenty. This season has been especially troublesome on account of the frequent showers keeping the ground soft, so that the birds could easily pull up the young corn. But although I planted my corn without any tar, and used no gun or poison, by liberal feeding, they did not make me one hour's work in re-planting 18 acres.

Value of Leaves.—The time will come when the value of fallen leaves for littering stables, mulching the ground, and protecting tender plants, will be better understood than at present. For littering stables, they have one great advantage over straw. Their broad surface and the stratified position in which they always arrange themselves, not only effectually exclude cold currents of air, but render them more perfect non-conductors, and exclude the cold better than any other similar substance. They make a fine soft bedding for horses; and as a component part of manure are not so coarse as straw, and soon decay, giving a fine texture to the compost they form. They impart similar advantages when used as a mulch, namely, lightness of covering and perfect protection. For covering tender plants they are peculiarly fitted—being always so dry as not to suffocate or rot the plant, and the thin plates of air interposed between them, entirely excluding frost if sufficient depth is given. A late number of the Genesee Farmer mentions the case of a gardener who has had remarkable success with roses, the tender kinds of which he keeps through the winter in open ground by a thorough covering with leaves. When a foot in thickness, with a few branches of evergreens on the top to prevent them from blowing away, no frost can penetrate them.

Many farmers have a large supply of leaves in their woods in hollows or low places; the winds will sometimes sweep them into heaps two or three

feet in thickness, and they may be scooped up with large baskets, and drawn in double-topped wagon boxes with great facility. In any woods they are easily and rapidly raked into heaps for the same purpose. It often happens when there is no snow on the ground in the winter, that farmers can draw leaves better than at any other time. In portions of the country where snow has not fallen, and where forest leaves are abundant, the work should not be omitted. The scarcity of fodder, and the consequent value of straw renders it especially desirable at the present time to save and use to the best advantage everything of the kind.

CELLAR DRAINS.

To secure sufficient drainage, add to prevent the channels from becoming choked by sediment, much depends on the form of the bottom of the channel. We had recently occasion to take up and repair a cellar drain which had become obstructed, and had ceased to discharge water; and found the difficulty to result chiefly from a flat bottom, formed by placing horse-shoe tile in the usual manner on a plank bottom, as shown in fig. 1. The water which had passed into the drain, spread itself over the whole bottom; the current was shallow and week, and was incapable of carrying off the small particles of solid matter which it contained, and they were deposited, as a necessary consequence, in the bottom. Successive layers finally choked the whole channel. Channels for a similar purpose, either above or below ground, are frequently made of boards or plank alone, with a flat bottom, and with a similar result. Had the *corner* instead of the flat side, been placed downwards, the water would have been thrown together or concentrated, and instead of depositing sediment, would have swept it off freely, and left the channel clear. The accompanying figures show this result distinctly; the first (fig. 2) representing the water as spread over the flat bottom, and the second (fig. 3) the same amount of water collected together in the angle formed by placing the boards in a different position.

FIG. 1. — *Horse-shoe tile wrongly placed.*

FIG. 2. — *Box-channel wrongly placed.*

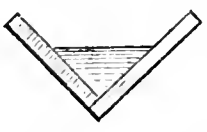


FIG 3—*Box channel properly set.*

In constructing a drain for similar purposes of *tile,* the curved portion should always be placed below. If horse-shoe tile is used, it should be inverted, (fig. 4,) and covered with a stout sole, flat stone or plank. If tubular or pipe tile (fig. 5) is employed, no difficulty will occur—although the results will be less striking than in an angle—and a small tile will be better than one too large.

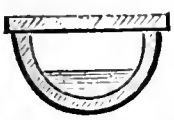
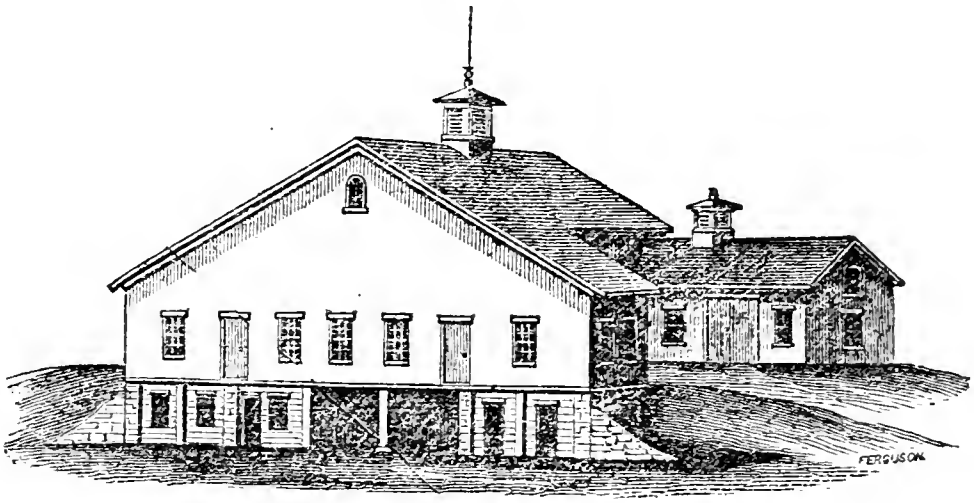


FIG. 4—*Inverted horse-shoe.*

FIG.5—*Tubular tile.*

These precautions are not required in common land drainage, as the water, before entering, becomes thoroughly filtered, provided the drains are deep

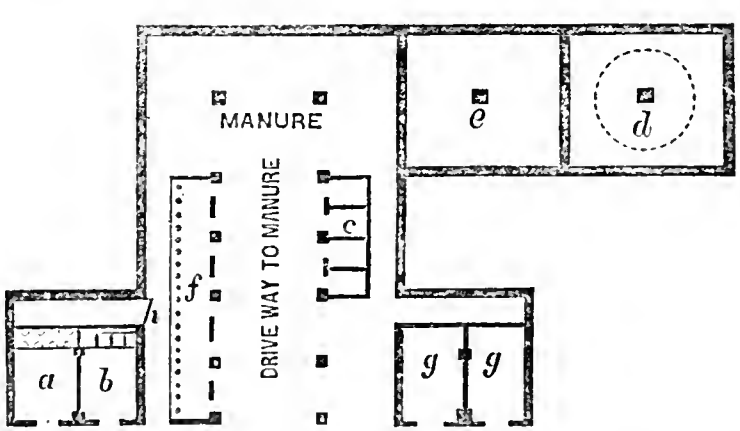
enough. They should be entirely beyond the reach of frost, which, by disturbing the soil, always produces some muddy water. In loose or porous soils, the depth should be greater than in those of a compact or clayey nature. In this latitude the depth should never be less than three feet for the former, nor less than two and a half for the latter.



DESIGN OF A BASEMENT BARN.

BY W. J. MORRIS, NEAR FAIR-HAVEN, CONN.

The arrangements are entirely my own, and I think very convenient. When you are in at any door you are prepared to go into any part of the building without going from under cover. The barnyard is exactly south of the barn —contains 4,800 square feet—the barn cellar 3,200 square feet. The barnyard wall is built of stone, 60 by 80 feet, with gate on each southeast and southwest corner—is 4 feet high, 18 inches thick at the top, 30 inches at the bottom, laid in lime mortar and the top cemented.

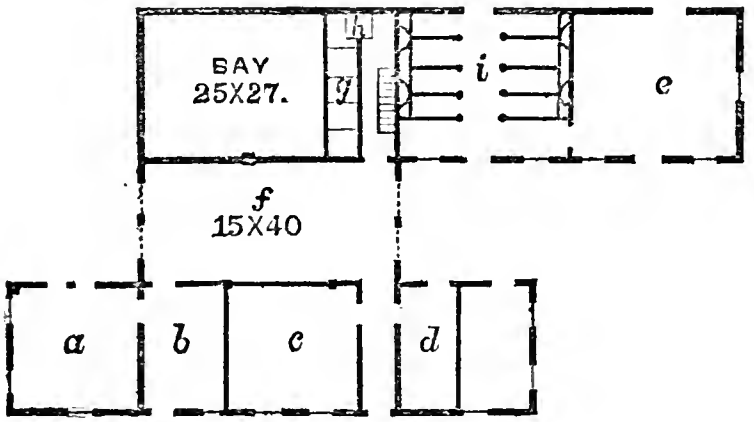


CELLAR TO BARN.—*a*, hen house—*b*, calf pen—*c*, root bins—*d*, cistern under carriage house—*e*, underpinning to horse stable—*f*, cow stalls, with stanchions—*g g*, pig pens—*h*, slide for cattle fodder.

The root bins are built double sided. The cow stalls are on the plan of those of Isaac Garret, Esq. of Delaware county, Pa., mentioned in the Co. GENT. of July 10, 1862. The pig pens and troughs are the same as

those mentioned in Co. Gent., vol. 12, page 234. In addition to the cistern, I have a supply of water for the entire basement, brought in pipes from a spring about 1,800 feet distant.

My manurial resources I consider excellent. On the 15th of Nov., 1861, I commenced a drain from a muck pond—laid a 6 inch glazed pipe with cemented joints a distantance of 700 feet—the greatest depth excavated was 20 feet 6 inches—the least depth 8 feet 6 inches—most of the distance had to be curbed. The surface of the pond is about 5 acres in extent, and the depth of the muck is from 3 to 12 or 15 feet. The pipe is laid with a fall of 6 inches per 100 feet, and drains the pond 4½ feet below the surface of the muck. Owing to the bad weather this was not completed until the next April. When the water was let on to the pipe there was discharged in the first twenty-four hours about 2,500 hogsheads, or 100 hogsheads per hour. I am now hauling out the muck, and think it will tell a good tale in returns of grain and grass.



Principal Floor to Barn.—*a*, large tools and implements—*b*, room for cutting feed—*c*, bay—*d*, small tools—*e*, carpenter shop—*f*, threshing floor—*g*, grain bins—*h*, water closet—*i*, horse stables—*k*, carriage house.

DOMESTIC ECONOMY.

Keeping Grapes in Winter.—The following brief statement of the the discussions which took place at the meeting of the Fruit Growers' Society last winter contains several valuable suggestions in relation to this subject:

The discussion was opened with remarks on the best mode of keeping grapes. Judge Larowe of Steuben Co., had kept grapes till the middle of July as follows: He uses crocks or jars holding about 2 gallons; laid a round board in the bottom, filled with grapes, and then sealed them air tight with a compound of rosin and tallow. They were placed in a cold room and allowed to remain there, unless the thermometer is likely to run down to zero, when they are carried to the cellar. It is important to have the grapes well ripened, in which case they will not freeze nearly so easily as apples. G. Ellwanger had never succeeded till he had kept his grapes in the barn by first packing them in 12 and 24 lb. boxes, and as soon as danger from frost occurs, placing them in very large boxes, encased all around with a stratum of dry leaves a foot thick—under, around, and above them. Most agreed on the importance of packing them away in good, well ripened, (but not over ripe) condition, with the removal of all the imperfect berries. H. N. Langworthy had found the Rebecca to keep better when not too ripe or dead

ripe. Dr. Sylvester had found three important requisites in keeping grapes, viz., perfect maturity, coolness of temperature and as dry an air as possible. Judge Larowe was very emphatic in favor of perfect maturity for good keeping. He said the cheaper way was first to cure them, or evaporate the moisture, and then pack them away with alternating layers of straw, in boxes or shelves. They would thus keep till April. Mr. Olmsted of Genesee Co., kept them in drawers holding 25 pounds each, in a cool room, one box piled on another. He had found them thus to to keep nearly as well as apples—they do not freeze so easily as apples. He said a neighbor has a cellar half above ground, where he keeps them in large quantity on racks. He finds the Isabella, Diana and Rebecca to keep best.

Keeping Eggs.—The great point in keeping eggs is to have them *stand on end*--some housekeepers are very sure that it is quite indispensable that the small end should be down; others are equally sure that they should rest on the large end. Both are very successful. They may be packed in oats, dry sawdust, or any other material that will hold them in this position. They should be kept in a cool, dry room.

Making Vinegar.—Vinegar is made from cider by exposing it in barrels not quite full, with the bung open, in a warm place, as the south side of a building, to the full action of the sun's rays. The addition of a quart or two, or even a gallon of molasses to each barrel, hastens fermentation, and makes better vinegar. The addition of a sheet of brown paper placed upon the surface also hastens fermentation, by giving additional facility to the action of the air. The mother in vinegar consists of the concrete organic matter in the cider, which promotes fermentation, and then settles to the bottom in a sort of gelatinous mass. We suppose the old-fashioned way of separating the vinegar from it, described by Dean Swift, is as good as any, namely—

"First rack slow, then rack quick,
Then rack slow till you come to the thick."

Purifying by distillation makes the vinegar nearly colorless, but this mode is only adopted for druggists. Vinegar is sometimes manufactured in the course of a day or two with great rapidity, by allowing it to trickle through small holes in the bottom of a pan placed on the top of and fitting a barrel, which is filled with shavings. The vinegar runs down the surface of the shavings, and is thus thinly exposed to the air, which causes a rapid fermentation, completing the process, if skillfully conducted, in forty eight hours.

How to Make a Foot Muff.—Those who take long rides in winter, are often obliged to resort to artificial means to keep their feet warm; hence hot bricks, heated blocks of wood and jugs filled with hot water are variously used. The foot muff is a great improvement on all these. It may be made in different ways, one of the cheapest and most simple of which is as follows: Let the tinman, make a square box, about one foot square, and two inches thick, so as to hold water. A screw, turned by a button, is inserted into one of the narrow sides —the screw hole should be large enough to admit a funnel. The box should be perfectly water-tight, the screw hole being the only place for the admission and and egress of the water. If a suitable screw cannot be procured, solder in a short tin tube, about an inch long, to receive a cork, which is to be tightly pressed in. This box, when filled with hot water, which may be done in a few seconds, will retain heat a long time; but its efficiency may be greatly increased by encasing it with the muff. The box itself may be first covered with a piece of coarse carpeting, and then a sheep skin, tanned with the wool on, sewed on the upper large flat side of the box, somewhat in the form of a broad shoe, with the wool inwards, and large enough to receive both feet. This essentially completes the foot-muff. The more expensive ones are covered with furs instead of sheepskin; and if the skin extends around the whole box, the heat of the water will be retained a longer time. A well made muff of this kind, filled with hot water and placed in the bottom of a sleigh, will continue warm for half a day.

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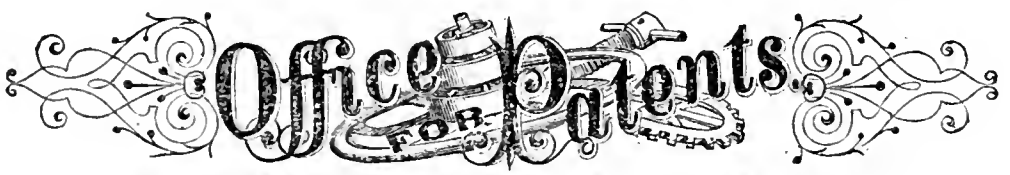

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DR. McLANE'S

AMERICAN WORM SPECIFIC OR VERMIFUGE.

No diseases to which the human body is liable are better entitled to the attention of the philanthropist than those consequent on the irritation produced by WORMS in the stomach and bowels. When the sufferer is an adult, the cause is very frequently overlooked, and consequently the proper remedy is not applied. But when the patient is an infant, if the disease is not entirely neglected, it is still too frequently ascribed, in whole or part, to some other cause. It ought here to be particularly remarked, that although but few worms may exist in a child, and howsoever quiescent they may have been previously, no sooner is the constitution invaded by any of the numerous train of diseases to which infancy is exposed, than it is fearfully augmented by their irritation. Hence it too frequently happens that a disease otherwise easily managed by proper remedies, when aggravated by that cause, bids defiance to treatment, judicious in other respects, but which entirely fails in consequence of worms being overlooked. And even in cases of greater violence, if a potent and prompt remedy be possessed, so that they could be expelled without loss of time, which is so precious in such cases, the disease might be attacked, by proper remedies, even-handed, and with success.

Symptoms which cannot be mistaken.—The countenance is pale and leaden colored, with occasional flushes, or a circumscribed spot on one or both cheeks; the eyes become dull; the pupils dilate; an azure semi-circle runs along the lower eyelid; the nose is irritated, swells, and sometimes bleeds; swelling of the upper lip; occasional headache, with humming or throbbing of the ears; an unusual secretion of saliva; slimy or furred tongue; breath very foul, particularly in the morning; appetite variable, sometimes voracious, with a gnawing sensation of the stomach, at others entirely gone; fleeting pains in the stomach; occasional nausea and vomiting; violent pains throughout the abdomen; bowels irregular, at times costive; stools slimy, not unfrequently tinged with blood; belly swollen and hard; urine turbid; respiration occasionally difficult, and accompanied by hiccough; cough sometimes dry and convulsive; uneasy and disturbed sleep, with grinding of the teeth; temper variable, but generally irritable, &c.

Whenever the above symptoms are found to exist, Dr. McLANE'S VERMIFUGE MAY

MAY BE DEPENDED ON TO EFFECT A CURE.

The universal success which has attended the administration of this preparation has been such as to warrant us in pledging ourselves to the public to RETURN the MONEY in every instance where it proves ineffectual, "providing the symptoms attending the sickness of the child or adult warrant the supposition of worms being the cause." In all cases the medicine to be given in strict accordance with the directions.

We pledge ourselves to the public that DR. McLANE'S VERMIFUGE DOES NOT CONTAIN MERCURY IN ANY FORM; and that it is an innocent preparation, and not capable of doing the slightest injury to the most tender infant.

DIRECTIONS.—Give a child from two to ten years old, a tea-spoonful in as much sweetened water every morning, fasting: if it purges through the day, well; but if not, repeat it again in the evening. Over ten, give a little more; under two, give less. To a full grown person, give two teaspoonfuls.

Beware of Counterfeits and all Articles purporting to be Dr. McLane's—The great popularity of DR. McLANE'S GENUINE PREPARATIONS has induced unprincipled persons to attempt palming upon the public counterfeit and inferior articles, in consequence of which the proprietors have been forced to adopt every possible guard against fraud. Purchasers will please pay attention to the following marks of genuineness,

1st.—The external wrapper is a fine Steel Engraving, with the signatures of C. McLANE, and FLEMING BROS.

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The LIVER PILLS have the name stamped on the lid of the box, in red wax.

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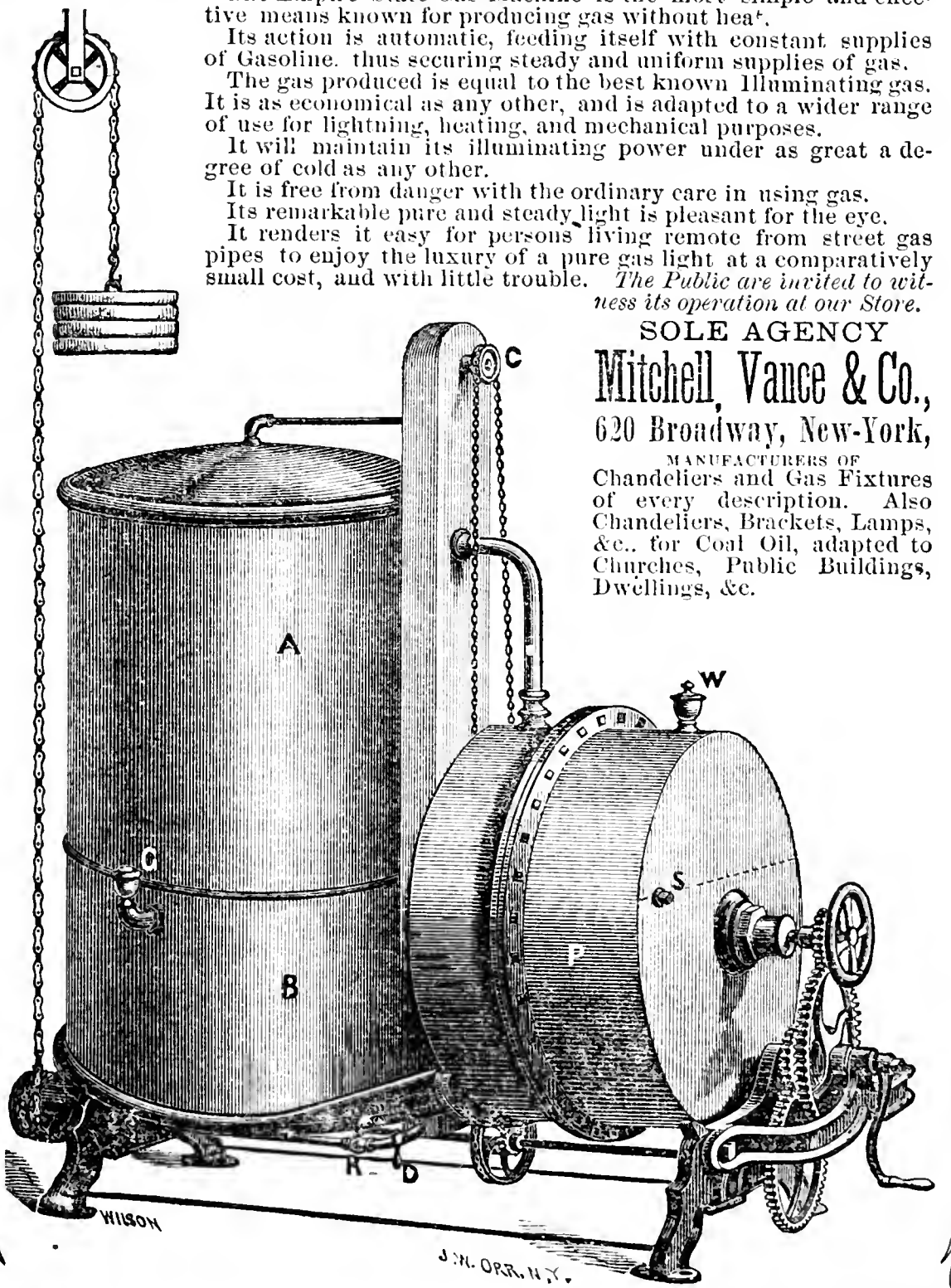

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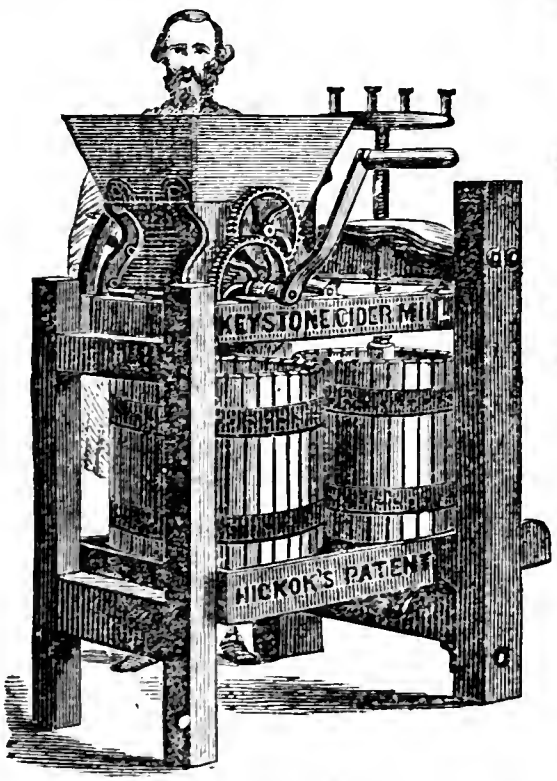

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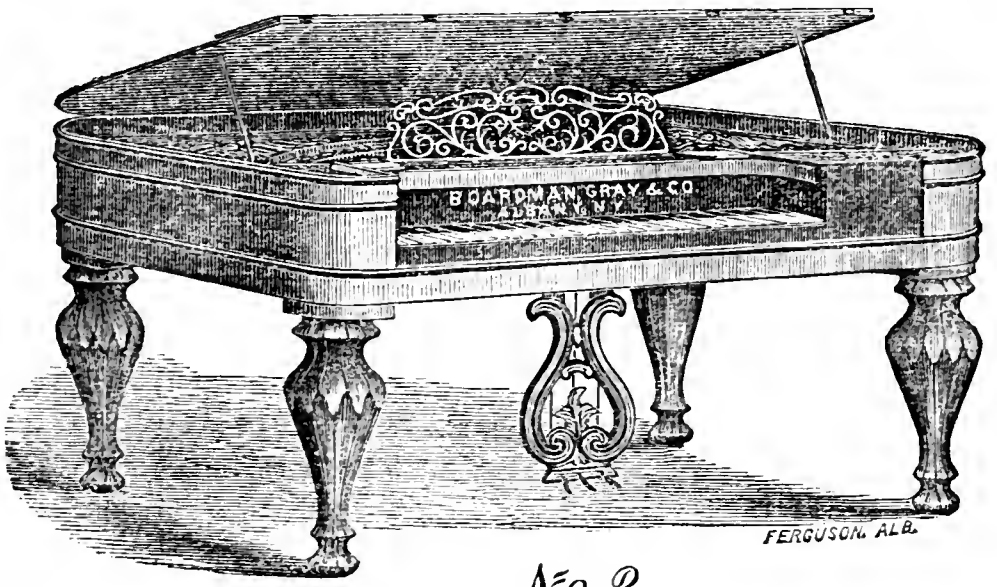

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These Pianos are being adopted in all the LARGE SEMINARIES AND SCHOOLS in this Country, being found more durable, and keeping in tune longer than any Piano made in the old way with wooden cases.

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CELEBRATED LIVER PILLS.

FOR THE CURE OF

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In offering to the public Dr. McLANE'S CELEBRATED LIVER PILL, as a remedy for LIVER AND BILIOUS COMPLAINTS, we presume no apology will be needed. The great prevalence of LIVER COMPLAINT AND BILIOUS DISEASES OF ALL KINDS, throughout the United States, and peculiarly in the West and South, where, in the majority of cases, the patient is not within the reach of a regular physician, requires that some remedy should be provided, that would NOT IN THE LEAST IMPAIR THE CONSTITUTION AND YET BE SAFE AND EFFECTUAL. That such is the true character of Dr. McLANE'S LIVER PILLS, there can be no doubt. The testimony we lay before you, and the great success which has INVARIABLY attended their use, will, we think, be sufficient to convince the most incredulous. It has been our sincere wish, that THESE PILLS should be fairly and fully tested, and stand or fall by the effects produced. That they have been so tested, and that the result has been in every respect favorable, we CALL THOUSANDS TO WITNESS who have experienced their beneficial effects.

Dr. McLANE'S LIVER PILLS are not held forth or recommended (like most of the popular medicines of the day,) as universal cure-alls, but simply for LIVER COMPLAINTS, and those symptoms connected with a deranged state of that organ.

DISEASES OF THE LIVER.

The Liver is much more frequently the seat of disease than is generally supposed. The function it is designed to perform, and on the REGULAR EXECUTION of which depends not only the general health of the body, but the powers of the STOMACH, BOWELS, BRAIN, and the whole nervous system, shows its vast and vital importance to human health. When the Liver is seriously diseased, it in fact not only DERANGES THE VITAL FUNCTIONS OF THE BODY, but exercises a powerful influence over the mind and its operations, which cannot easily be described. It has so close a connection with other diseases, and manifests itself by so great a variety of symptoms, of a most doubtful character, that it misleads more physicians, even of great eminence, than any other vital organ. The intimate connection which exists between the liver and the brain, and the great dominion which I am persuaded it exercises over the PASSIONS of mankind, convince me that many unfortunate beings have committed acts of deep and criminal atrocity, or become what fools term hypochondriacs, from the simple fact of a DISEASED STATE OF THE LIVER. I have long been convinced that more than one-half of the complaints which occur in this country, are to be considered as having their seat in a DISEASED STATE OF THE LIVER. I will enumerate some of them. INDIGESTION, STOPPAGE OF THE MENSES, DERANGED STATE OF THE BOWELS, IRRITABLE AND VINDICTIVE FEELINGS AND PASSIONS, from trifling and inadequate causes, of which we afterwards feel ashamed; last, though not least, more than THREE-FOURTHS of the diseases enumerated under the head of CONSUMPTION, have their seat in a diseased liver. This is truly a frightful catalogue.

Symptoms of a Diseased Liver.—Pain in the right side, under the edge of the ribs, increasing on pressure; sometimes the pain is in the left side; the patient is rarely able to lie on the left side; sometimes the pain is felt under the shoulder-blade, and it frequently extends to the top of the shoulder, and is sometimes mistaken for a rheumatism in the arm. The stomach is affected with loss of appetite and sickness; the bowels in general are costive, sometimes alternating with lax; the head is troubled with pain, accompanied with a dull, heavy sensation in the back part. There is generally a considerable loss of memory, accompanied with a painful sensation of having left undone something which ought to have been done. A slight dry cough is sometimes an attendant. The patient complains of weariness and debility; he is easily startled; his feet are cold or burning, and he complains of a prickly sensation of the skin; his spirits are low, and although he is satisfied that exercise would be beneficial to him, yet he can scarcely summon up fortitude enough to try it. In fact, he distrusts every remedy. Several of the above symptoms attend the disease; but cases have occurred when few of them existed, yet examination of the body, after death, has shown the Liver to have been extensively deranged.

Ague and Fever.—Dr. McLANE'S LIVER PILLS IN CASES OF AGUE AND FEVER, when taken with Quinine, are productive of the most happy results. No better cathartic can be used preparatory to, or after taking Quinine. We would advise all who are afflicted with this disease to give them A FAIR TRIAL.

DIRECTIONS.—Take two or three pills going to bed, every second or third night. If they do not purge two or three times by next morning, take one or two more; but a slight breakfast should invariably follow their use. The Liver Pills may be used where purging simply is necessary. As an anti-bilious purgative, they are inferior to none, and in doses of two or three, they give astonishing relief in Sick Headache; also, in slight derangements of the Stomach.

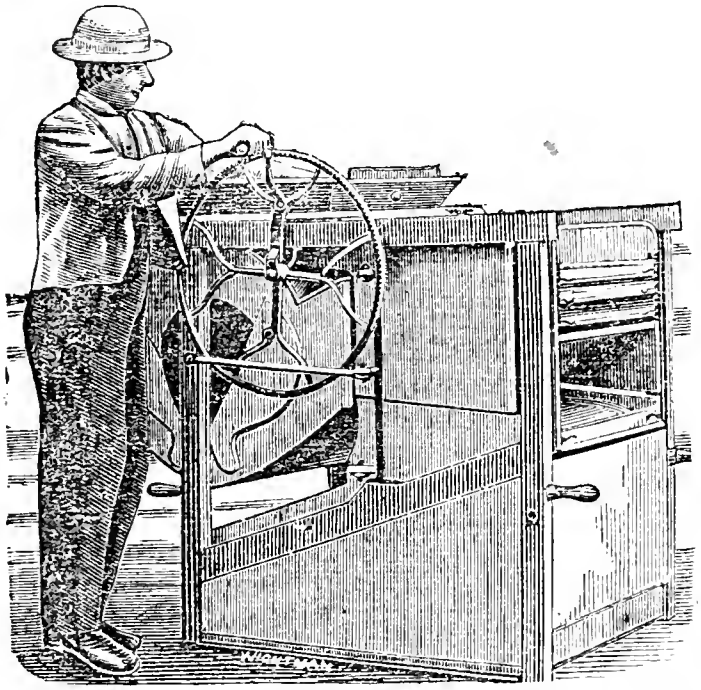
Prepared only by FLEMING BROS., Pittsburgh, Penn.,

Sole Proprietors of Dr. McLane's Liver Pills, Vermifuge & Lung Syrup.

Sold by Dealers Everywhere.

The Proprietors will forward per mail to any part of the United States or the British Provinces, One Box Liver Pills, on the receipt of order enclosing twelve 3 cent P. O. Stamps, or One Vial of Vermifuge on the receipt of thirteen 3 cent P. O. Stamps.

NUTTING'S
FAN MILL AND SEPARATOR.



Through the individual and combined efforts of Mr. Nutting, Mr Warren and Mr. Doty, aided by the suggestions of practical farmers, and a long and thorough series of tests and experiments, this machine is now brought to a degree of *perfection* and *rapidity* of *work* never before attained by it or any other known grain cleaning apparatus.

Within reach of EVERY FARMER is now placed an *infallible* means of *selecting* and *purifying* the *largest* and *best* of all kinds of seed for sowing, and of preparing, in the most *perfect* and *speedy* manner, grain of all kinds for market. He may select the *largest*, *most perfect* and *earliest ripened* grains of each crop, and thus soon produce new and better varieties of grain, and at the same time know with absolute certainty that any foul seeds in his crop are not from seeds of his own sowing, but an evil in the land itself, which must be treated accordingly. The machine is now operated by an improved cog gear, which runs smoothly and still. It is built of the best material, and with *special* reference to durability. Every effort will be made to place the manufacture of the machine on a par with the great demand for it, that orders may not, as heretofore, accumulate far in excess of the supply, and thus be unavoidably neglected. Circulars sent on application. Price of Machine, $35.

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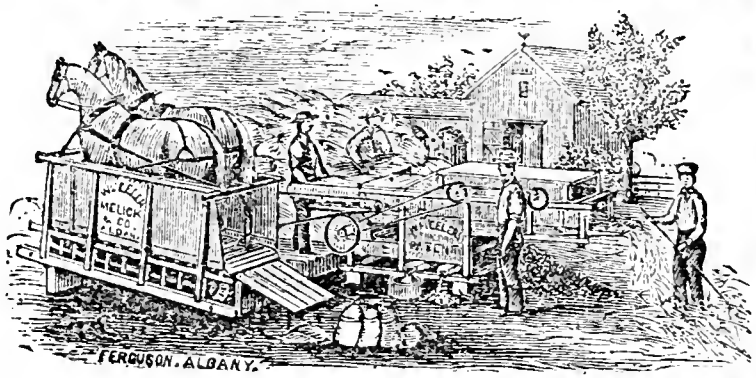

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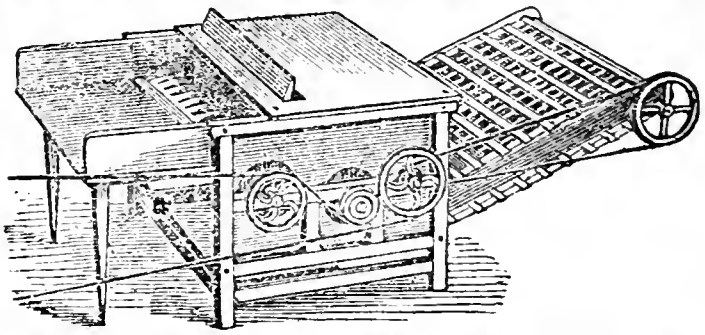

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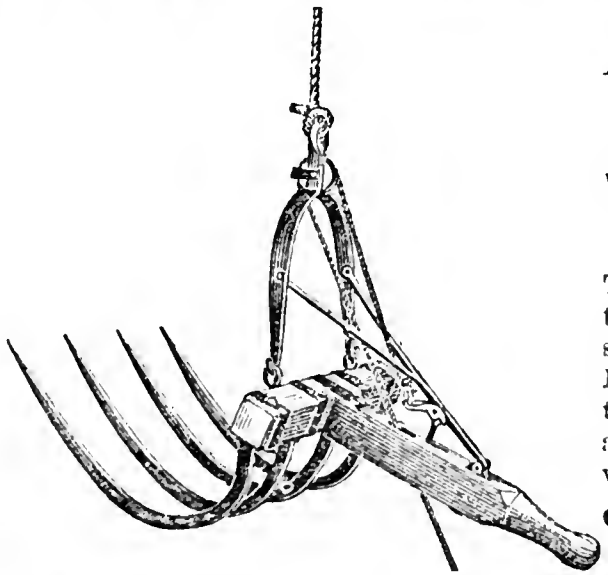

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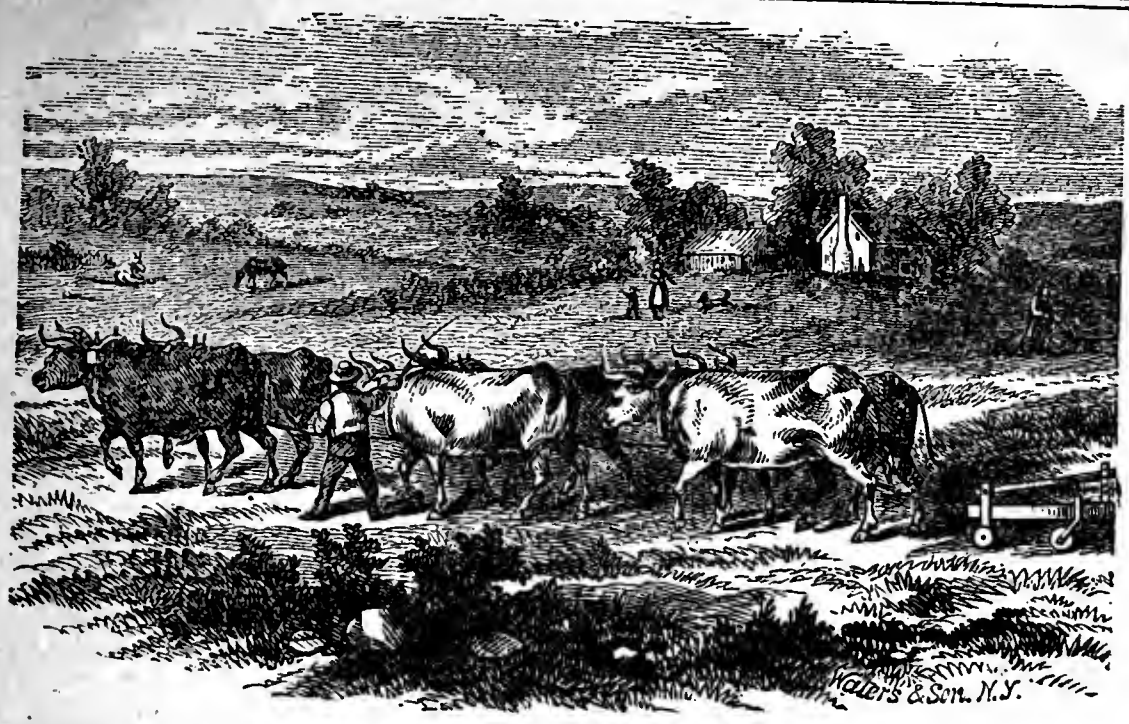

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