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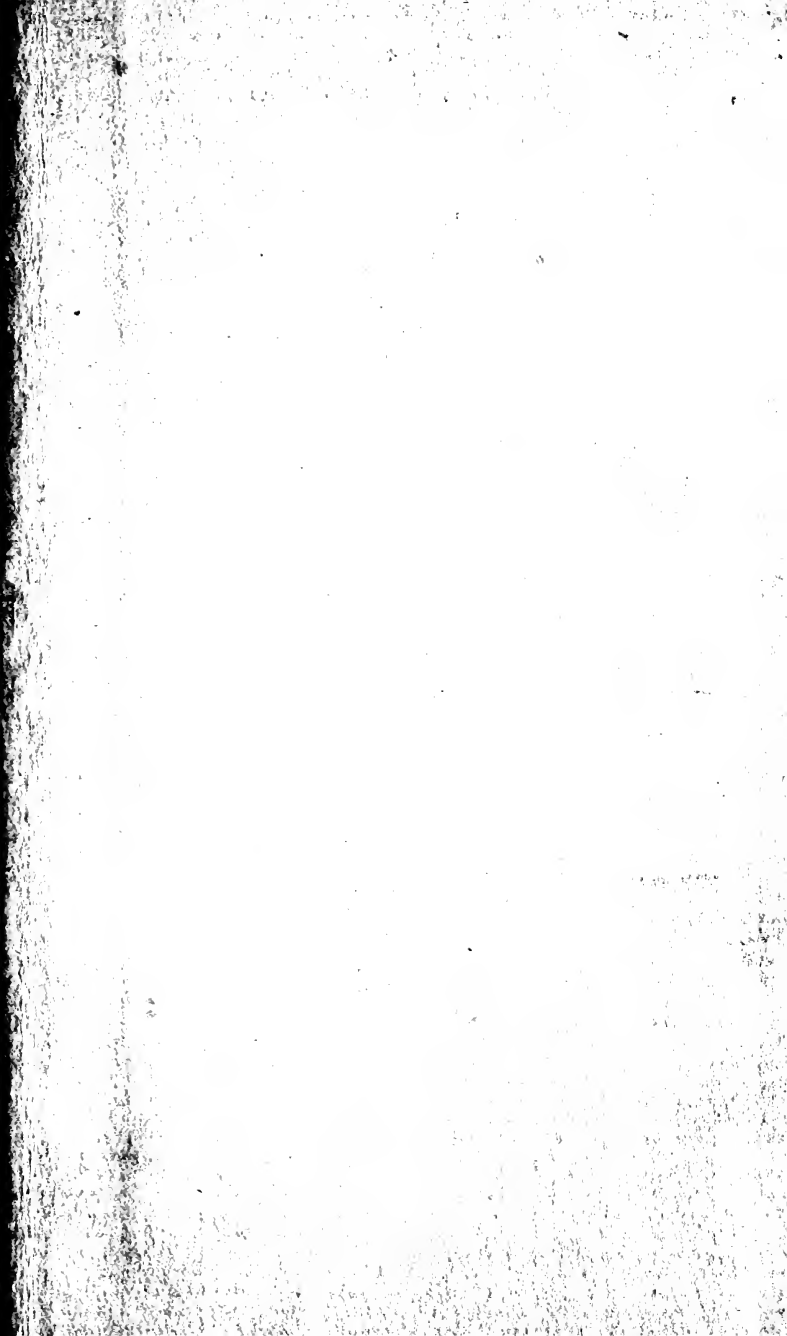
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THE
ILLUSTRATED ANNUAL
REGISTER OF RURAL AFFAIRS
AND
CULTIVATOR ALMANAC,
FOR THE YEAR 1856,

CONTAINING PRACTICAL SUGGESTIONS FOR

THE FARMER AND HORTICULTURIST,

EMBELLISHED WITH ONE HUNDRED AND FIFTY ENGRAVINGS,
INCLUDING HOUSES, FARM BUILDINGS, IMPLEMENTS,
DOMESTIC ANIMALS, FRUIT, FLOWERS, &c.

BY J. J. THOMAS.

ALBANY, N. Y.:

LUTHER TUCKER & SON, 397 BROADWAY,
OFFICE OF "THE CULTIVATOR" AND "THE COUNTRY GENTLEMAN."

1856

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INDEX.

	<i>Page.</i>		<i>Page.</i>
Agricultural Papers	268	Dick's Cheese Press	245
Animals, Improved	261	Equinoxes and Solstices	151
Apples, Descriptive List of	197	Eclipses of the Year	150
Summer	197	Farm House, Substantial	175
Autumn	199	Flannel, How to Wash	265
Winter	202	Flat Irons, to Clean	265
Apricots, Descriptive List of	219	Flower Garden, Circular	238
Ants, Black, to Destroy	266	Dropmore	237
Astronomical Signs Explained	150	Flowering Plants, Herbaceous	239
Automaton Gate, Winegar's	254	Bulbous	241
Barns, Side Hill or Cellar	182	Food for Sick Animals	268
Lewis F. Allen's	179	Fruits, Descriptive Lists of	197
Large Dairy	185	Fruit Trees, Depredators on	237
Basement, Plan of	187	Fire Blight and Black Knot on	237
Side Hill, in Usual Form	184	General Rules for Planting and Managing	236
Balky Horses	263	Gardens, Stealing from	259
Bee Stings, to Cure	265	Gilt Frames, Should be Varnished	265
Brass, to Clean	266	Glass Stoppers, to Remove	265
Bread Puddings, &c.	266	Gothic Country House	167
Breaking Halters	267	General Rules for Building	177
Building, General Rules for	177	Grape Houses	233
Bushel, United States Standard	259	Grapes, Culture of	230
Butter Dairies, Management of	242	Descriptive Lists of	229
Churning Milk and Cream	250	Native and Foreign	229
Room	253	Soil and Propagation	230
Proper Time for Churning	250	Pruning and Training	230
Temperature of Cream at Churn- ing	249	Management of, in Vinery	236
Chief Points in Butter Making	251	Griddle Cakes, to Prevent Sticking	265
To Make Butter Come	266	Hedges for Flooded Lands	268
Churns	251	Hemlock Beer for the Sick	266
Calendar Pages	153	Hints on Construction of Dwellings	165
Carriage House and Stable	188	Houses, Grape	233
Smaller do.	190	Cottage Gothic Farm	169
Cattle, Improved	263	Gothic Country	167
Cattle, Cure for Wounds in	265	General Rules for Building	177
Carpets, Care of	265	Cheese Dairy	247
Cheese Dairies, Management of	242	Hints on Construction of	165
Introductory Remarks	242	Italian Country	171
Plan of House	247	Italian Farm Cottage	173
Rennet, Preparation of	243	Poultry	191
Scalding the Curd	244	Square Farm Cottage	174
Steamer for	245	Substantial Farm	175
Cheese Presses	245	School, Designs for	191, 192, 195
Cherries, Descriptive List of	223	Ink Spots, to Remove	265
Churning Apparatus	252	Interesting Facts for Farmers	267
Cracks in Stoves, to Stop	265	Kendall's Cheese Press	246
Colors Fading, to Prevent	265	Kendall's Churn	252
Coru and Cob-Mill, Scott's	259	Linen, to Put Gloss on	266
Cottage Gothic Farm House	169	Marble Fire Places and Tables, to Clean	265
Customary Notes	149	Mince Pie Meat, How to Keep	266
Day and Night, to Ascertain Length of	151	Moths, to Drive Away	265
Ditch Digger, Pratt's	256	Mowing Machine, Allen's	257
Directions for Finding the True Time	151	Nectarines, Descriptive List of	218
Dog Power Churn	252	Ornamental Planting	237
Door Knobs, How to Clean	265	Parsnips for Hogs	268
Dairies, Butter and Cheese	242	Paste, Adhesive, How Made	265

	<i>Page.</i>		<i>Page.</i>
Posts, Durability of.....	268	Steamer for Cheese Dairy.....	245
Preserves, Fermenting.....	266	Silks, How to Wash.....	265
Pumpkins, to Dry.....	265	Sausage Meat, How to Preserve,.....	266
Pumps, Frozen, How to Thaw.....	266	Signs of the Zodiac.....	152
Planting, Deep and Shallow.....	268	Striking Illustration.....	267
Planting, Ornamental.....	237	Strawberries, Descriptive List of.....	226
Plowing, Benefit of Deep.....	265	How to Plant.....	227
Plowing Headlands.....	267	Staminate and Pistillate Varieties.....	226
Parks, Trees for.....	238	Square Farm Cottage.....	174
Plants, Select List of.....	239	Substantial Farm House.....	175
Peaches, Descriptive Lists of.....	215	School Houses, Designs for...192, 195,	196
Comparative Forms of.....	216	Remarks on.....	192
Pears, Descriptive List of.....	207	Plan of Floor for.....	193
Summer.....	207	Design for Seats of.....	194
Autumn.....	209	Swine, Suffolk.....	261
Winter.....	213	Berkshire.....	263
Plums, Descriptive Lists of.....	220	Thermometer Churn.....	251
Poultry House, Design for.....	191	Tide Table.....	152
Putty, to Remove Old.....	265	Table of Principal Bodies in Solar Sys-	152
Rennet, Preparation of.....	243	tem.....	152
Rising and Setting of Planets.....	151	Trees for Parks.....	238
Rat Trap, a Good One.....	265	Vines and Shrubs.....	239
Rust on Knives, &c., to Remove.....	266	Wash for Barns.....	263
Shrubs and Vines.....	239	Weeds, the way they Multiply.....	267
Self-Acting Cheese Press.....	245	Weekly Examinations.....	266
Sheep, South Down.....	263	Wind-Mill, Halladay's.....	258

ENGRAVINGS.

	<i>No. Figures.</i>	<i>Page.</i>		<i>No. Figures.</i>	<i>Page.</i>
Allen's Mowing Machine.....	2	257	Gothic Country House.....	3	166
Apples, Figures of.....	11	198	Grape Vines, Pruning and Training.....	7	231
Apricots, " ".....	2	219	Grape Houses.....	5	234
Automaton Gate.....	1	255	Halladay's Wind Mill.....	1	258
Barns.....	11	179	Italian Country House.....	3	171
Carriage Houses and Stables.....	7	188	Italian Farm Cottage.....	2	173
Cattle.....	2	260	Leaves of the Peach.....	3	215
Cedar of Lebanon.....	1	238	Peaches, Figures of.....	7	216
Circular Flower Garden.....	1	238	Pears, Figures of.....	12	207
Cheese Dairy House.....	2	247	Plums, Figures of.....	11	220
Cheese Presses.....	3	245	Poultry House.....	1	191
Cherries, Figures of.....	15	223	Pratt's Ditch Digger.....	1	256
Churns.....	2	251	Room for Butter Dairy.....	3	253
Cottage Gothic Farm House.....	4	169	School Houses.....	8	192
Dairy Steamer.....	1	245	Scott's Corn and Cob Mill.....	1	259
Deodar Cedar.....	1	239	Sheep.....	1	262
Dropmore Garden.....	1	237	Square Farm Cottage.....	3	174
Flowering Plants.....	4	240	Substantial Farm Residence.....	4	175
Flowers of the Peach.....	2	217	Strawberries, Figures of.....	7	227
Flowers of the Strawberry.....	4	226	Swine.....	2	261

THE
CULTIVATOR ALMANAC,
1856.

ASTRONOMICAL CALCULATIONS IN EQUAL OR CLOCK TIME.

CUSTOMARY NOTES.

VENUS will be morning star until July 19th, then evening star until May 10th, 1857. MARS will be morning star until April 1st, then evening star until June 7th, 1857. JUPITER will be evening star until March 5th, then morning star until September 26th, then evening star until April 11th, 1857. SATURN will be evening star until June 24th, then morning star until December 31st, then evening star until July 10th, 1857.

The Moon will run lowest this year on October 6th, to the 3d degree of Sagittarius, having a declination of $28^{\circ} 36' 1.2''$ south. It will run highest on the 18th of October, to the 3d degree of Gemini, having a declination of $28^{\circ} 35' 32.2''$ north. This declination is about a *maximum*, by which the Moon can run much further north and south than the Sun ever can by about $5^{\circ} 8' 48''$. The longitude of the Moon's ascending node, Jan. 1st, $30^{\circ} 11.1'$ and on the 31st of December it will be $10^{\circ} 51.4'$. Apparent obliquity of the ecliptic July 9th, $23^{\circ} 27' 36.11''$.

The Sun will be north of the equator this tropical year, dating from the solstice of December, 1855, 186 days, 11 hours, 4 minutes; and south of it 178 days, 18 hours, 47 minutes; showing a difference of 7 days, 16 hours, 17 minutes, which is caused by the slower motion of the Earth when near its aphelion in July.

Distance of the EARTH from the Sun July 2d, 96,702,364 miles; its mean distance March 31st and October 2d, 96,103,000 miles.

Mars will move from east to west, past stars in the sky, from February 24th to May 14th, a distance of about 18° . Jupiter will move in the same manner from July 29th to November 24th, a distance of 9° . Saturn moves in the same direction until February 23d, and from October 26th to the end of the year. Venus moves directly, or from west to east, all of the year.

The Planet Jupiter will be eclipsed by the Moon on the 19th of August, visible. It disappears at 1 o'clock and 5 minutes, in the morning at Washington, and reappears at 1 hour and 59 minutes. Mercury will be visible in the west soon after sunset about Jan. 29th, May 23d, and September 19th; also in the east, before sunrise, about March 18th, July 16th, and November 5th.

Saturn's rings will be visible all of this year, with the aid of a telescope, their southern surface being now turned toward the Earth.

GOOD FRIDAY, March 21. EASTER SUNDAY, March 23. PENTECOST, May 11.

1.12.28 Chivers 35800 1.10 Darling 675 - Binding

ECLIPSES IN THE YEAR 1856.

There will be two Eclipses of the Sun, and two of the Moon this year, the latter being visible.

I. A Total Eclipse of the Sun, April 5th. Invisible.

II. A Partial Eclipse of the Moon, April 20th, in the morning. Visible. Magnitude 8.544 digits, or over two-thirds of the moon, on the northern limb. See the following table.

III. An Annular Eclipse of the Sun, Sept. 28th. Invisible in the United States.

IV. A Partial Eclipse of the Moon, October 13th, in the evening. Visible. Magnitude 11.976 digits (nearly total,) on the southern limb. See the table.

NOTE.—The beginning of the Eclipse of October 13th occurs before the Moon rises in the United States, hence that body will rise with the Eclipse upon it. The time of rising will be about 5 o'clock 17 m., and the size of the Eclipse $3\frac{1}{2}$ digits in most of the States.

PRINCIPAL PLACES.	ECLIPSE OF APRIL 20TH.—MORNING.			ECLIPSE OF OCTOBER 13TH. EVENING.	
	Begins.	Middle.	Ends.	Middle.	Ends.
	H. M.	H. M.	H. M.	H. M.	H. M.
Portland	2 53	4 25	5 58	6 13	7 47
Boston	2 50	4 22	5 55	6 10	7 44
Providence	2 49	4 21	5 54	6 9	7 43
Lowell	2 49	4 21	5 54	6 9	7 43
Newport	2 49	4 21	5 54	6 9	7 43
Concord	2 48	4 20	5 53	6 8	7 42
Montpelier.....	2 44	4 16	5 49	6 4	7 38
Hartford.....	2 44	4 16	5 49	6 4	7 38
New Haven	2 42	4 12	5 45	6 2	7 36
Troy	2 40	4 10	5 43	6 0	7 34
New-York.....	2 38	4 8	5 41	5 58	7 32
Newburgh.....	2 38	4 8	5 41	5 58	7 32
Philadelphia.....	2 34	4 4	5 39	5 54	7 28
Utica	2 34	4 4	5 39	5 54	7 28
Baltimore.....	2 28	4 0	5 33	5 48	7 22
Auburn.....	2 28	4 0	5 33	5 48	7 22
Washington	2 26	3 58	5 31	5 46	7 19
Rochester	2 23	3 55	5 28	5 43	7 17
Buffalo	2 19	3 51	5 24	5 39	7 13
Pittsburgh	2 14	3 46	5 19	5 34	7 8
Detroit	2 2	3 34	5 7	5 22	6 56
Columbus.....	2 2	3 34	5 7	5 22	6 56
Cincinnati	1 57	3 29	5 2	5 17	6 51
Louisville	1 52	3 24	4 57		6 46
Indianapolis.....	1 50	3 22	4 55		6 44
Chicago	1 44	3 16	4 49		6 38
Madison	1 36	3 8	4 41		6 30
Springfield	1 36	3 8	4 41		6 30
St. Louis.....	1 33	3 5	4 38		6 27
Iowa City	1 27	2 59	4 32		6 21
Oregon City	*11 30	1 2	2 35		
San Francisco	*11 24	0 53	2 29		

Middle of the Eclipse be- fore the Moon rises.

* Even'g of 19th of April.

ASTRONOMICAL SIGNS EXPLAINED.

- ☉ Sun, ☾ Moon, ☿ Mercury, ♀ Venus, ♂ Mars, ♃ Jupiter,
- ♄ Saturn, ♅ Uranus, ♆ Neptune.

EQUINOXES AND SOLSTICES.		BOSTON.			CINCINNATI.			S. FRANCISCO.		
		D.	H.	M.	D.	H.	M.	D.	H.	M.
Vernal Equinox	March	20	5	5 m.	20	4	11 m.	20	1	39 m.
Summer Solstice.....	June	21	1	54 m.	21	1	0 m.	20	10	23 ev.
Autumnal Equinox ..	September...	22	4	9 ev.	22	3	15 ev.	22	0	43 ev.
Winter Solstice.	December...	21	9	55 m.	21	9	1 m.	21	6	29 m.

RISING AND SETTING OF PLANETS.

The figures in the following table are correct for all places on or near the latitudes of Boston and New-York; the longitude of different places having no sensible effect upon the given times. When the hour is *less* than six, it is in the morning; and when *greater* than 6 it is in the evening.

Date.	Planet.	Boston.	New-York.	Date.	Planet.	Boston.	New-York.
January 2	Venus rises..	H. M. 3 52	H. M. 3 48	July 2	Mars sets....	H. M. 11 49	H. M. 11 50
" 11	Mars rises ...	11 36	11 36	" 16	Mercury ris..	3 15	3 20
" 29	Mercury sets..	6 35	6 38	" 21	Jupiter rises..	10 26	10 26
February 2	Venus rises..	4 45	4 40	August 2	Mars sets....	10 21	10 24
" 11	Jupiter sets ..	6 51	6 53	" 11	Saturn rises..	1 52	1 57
" 21	Saturn sets... 2 56	2 51	2 51	" 21	Venus sets ...	7 16	7 13
March 2	Venus rises..	5 8	5 4	Sept'r 2	Jupiter rises..	7 33	7 33
" 18	Mercury ris..	5 16	5 13	" 19	Mercury sets..	6 44	6 47
" 21	Saturn sets... 1 6	1 1	1 1	" 21	Venus sets ...	6 37	6 38
April 2	Venus rises..	4 48	4 47	October 2	Jupiter rises..	5 22 ^e	5 27 ^e
" 11	Mars sets....	5 16	5 16	" 11	Saturn rises..	10 10	10 15
" 21	Jupiter rises..	3 59	3 59	" 21	Venus sets ...	6 8	6 13
May 2	Venus rises..	4 14	4 15	Nov'r 5	Mercury ris..	5 2	5 1
" 11	Saturn sets... 1 44	1 39	1 39	" 11	Jupiter sets... 2 30	2 30	2 30
" 23	Mercury sets.. 9 16	9 10	9 10	" 21	Venus sets ... 6 18	6 24	6 24
June 2	Venus rises.. 3 50	3 55	3 55	Dec'r 2	Mars sets.... 7 40	7 46	7 46
" 11	Mars sets.... 0 59	1 0	1 0	" 11	Jupiter sets... 0 33	0 33	0 33
" 21	Jupiter rises.. 0 23	0 23	0 23	" 21	Venus sets ... 7 24	7 29	7 29

DIRECTIONS FOR FINDING THE TRUE TIME.

The Sun is on the meridian at 12 o'clock on four days only in the year. It is sometimes as much as $16\frac{1}{2}$ minutes before or after twelve when its shadow strikes the noon-mark on the sun-dial. On each calendar page of this Almanac is shown the exact time when the Sun reaches the meridian, or the shadow the noon-mark: and in order to set a clock or watch correctly, it must, when it is noon by the sun-dial or noon-mark, be set at the time indicated in the Almanac. Thus, on the 25th of January, when the Sun is on the noon-mark, the watch must be set 12 minutes and 34 seconds past twelve, which will be the true time. The practice of setting time-pieces by the rising or setting of the Sun or Moon, is not strictly correct; as the unevenness of the earth's surface and intervening objects, such as hills and forests, near the points of rising and setting, occasion a deviation in every place, from the time expressed in the Almanac, which time is adapted to a smooth, level horizon. The only means of keeping correct time is by the use of a noon-mark, or a meridian line.

TO ASCERTAIN THE LENGTH OF THE DAY AND NIGHT.

At any time of the year, add 12 hours to the time of the Sun's setting, and from the sum subtract time of rising, for the *length of the day*. Subtract the time of setting from 12 hours, and to the remainder add the time of rising next morning, for the *length of the night*. These rules are equally true for *apparent* time.

TABLE OF THE PRINCIPAL BODIES IN THE SOLAR SYSTEM.

NAMES.	Mean Diameter.	Mean distance from the Sun.	Revolution around the Sun.	Revol'n on axis.	V'lety prim. in orbit.	Size, the Earth being 1.	D'nsty as 1.	Light as 1.
	Miles.	Miles.	Yrs. Days	d. h. m.	Miles.			
THE SUN ...	883,246	.....	.....	25 9 59	.....	1,412,921.101	0.252	infin.
Mercury ...	3,224	36,814,000	88	1 .. 5	1,827	0.053	1.120	6.680
Venus	7,687	68,787,000	224	.. 23 21	1,338	0.909	0.523	1.911
The Earth ..	7,912	95,103,000	1	.. 23 56	1,138	1.000	1.000	1.000
The Moon....	2,180	95,103,000	1	27 7 43	38	0.020	0.615	1.000
Mars	4,189	144,908,000	1 321	1 .. 37	921	0.125	0.948	0.431
Jupiter	89,170	494,797,000	11 215	.. 9 56	496	1,456.000	0.238	0.037
Saturn	79,042	907,162,000	29 167	.. 10 25	368	771.000	0.138	0.011
Uranus	35,112	1,824,290,000	84 6	1 13 33	259	80.000	0.242	0.003
Neptune....	41,500	2,554,000,000	164 226	.....	208	143.000	0.140	0.001

NOTE.—There are now *thirty-three* small planets, called Asteroids, between the orbits of Mars and Jupiter. The names of which are as follow: Flora, Clio, Vesta, Iris, Metis, Eunomia, Hebe, Psyche, Thetis, Melpomene, Massilia, Fortuna, Lutetia, Calliope, Thalia, Parthenope, Irene, Egeria, Astræa, Juno, Ceres, Pallas, Hygeia, Themis, Phocæa, Proserpine, Euterpe, Bellona, Amphitrite, Polymnia, Pomona, Urania, and Euphrosyna. Eight of these were discovered in 1852.

TIDE TABLE

The calendar pages of this Almanac exhibit the time of high-water at New-York and Boston. To find the time of high-water at any of the following places, *add* to, or *subtract* from, the time of high-water at New-York, as below. (There is a great deal of uncertainty about the tides, in consequence of the direction and *strength* of the winds.)

H. M.		H. M.		H. M.	
Albany	add 6 31	Hellgate	add 1 41	Portland	add 1 39
Annapolis, Md.	sub. 1 51	Marblehead	add 1 49	Portsmouth	add 2 9
Annapolis, N. S.	add 1 49	Machias	add 1 54	Providence	sub. 0 41
Amboy	sub. 0 39	Mobile Point	add 1 54	Québec, Canada ..	add 8 49
Baltimore	add 5 7	New Bedford	sub. 1 40	Richmond	sub. 2 25
Bridgeport	add 2 0	New Haven	add 2 4	Salem	add 2 19
Cape Split	add 2 0	New London	sub. 0 21	Sandy Hook, N. J. .	sub. 0 50
Eastport	add 2 9	Newport	sub. 1 55	St. John, N. B.	add 2 49
Halifax, N. S.	sub. 2 15	Norfolk	sub. 0 41	Sunbury	add 0 19
Holmes's Hole	add 1 4	Plymouth	add 2 19	Windsor	add 2 49

SIGNS OF THE ZODIAC, WITH THE TIME OF THE SUN'S ENTERING EACH

SPRING SIGNS.—♋ *Pisces*, March 20.—♈ *Aries*, April 19.—♉ *Taurus*, May 20.—Spring, 92d. 20h. 49m.

SUMMER SIGNS.—♊ *Gemini*, June 21.—♋ *Cancer*, July 22.—♌ *Leo*, August 22.—Summer, 93d. 14h. 15m.

AUTUMN SIGNS.—♍ *Virgo*, September 22.—♎ *Libra*, October 23.—♏ *Scorpio*, November 21.—Autumn, 89d. 17h. 46m.

WINTER SIGNS.—♐ *Sagittarius*, December 21.—♑ *Capricornus*, January 20.—♒ *Aquarius*, February 19.—Winter, 89d. 1h. 1m.

MOON'S PHASES.	D	Boston		N. York.		Baltimore.		Pittsburgh.		Cincinnati.	
		H	M	H	M	H	M	H	M	H	M
NEW MOON	7	6	33 e	6	21 e	6	11 e	5	58 e	5	40 e
FIRST QUARTER	14	10	59 m	10	47 m	10	37 m	10	24 m	10	5 m
FULL MOON.....	21	10	45 e	10	33 e	10	23 e	10	10 e	9	51 e
LAST QUARTER.....	30	3	51 m	3	39 m	3	29 m	3	16 m	2	57 m

DAY OF MONTH.	DAY OF WEEK.	Shadow at the noon mark.	CALENDAR For Boston, N England, New-York State, Michigan, Wisconsin and Iowa.					CALENDAR For N.York City, Philadelphia, Connecticut Penn., New-Jersey, Ohio, Indiana, Illinois					CALENDAR For Baltimore, Virginia, Kentucky, Missouri and California.				
			SUN			MOON	H. W.	SUN		MOON	H. W.	SUN		MOON	H. W.		
			rises.	sets.	rises	H. W. Bost	rises	sets	rises.	H. W. N. Y.	rises	sets	rises.	H. W.			
1	T	H M S	H M	H M	H M	H M	H M	H M	H M	H M	H M	H M	H M	H M			
2	W	12 3 42	7 30 4	38 0 51	5 5	7 24 4	4 44	0 49	2 55	7 19 4	49 0 48						
3	T	12 4 11	7 30 4	39 1 53	6 9	7 24 4	45 1 50	3 49	7 19 4	50 1 48							
4	F	12 4 39	7 30 4	40 2 57	7 10	7 24 4	46 2 54	4 50	7 19 4	51 2 50							
5	S	12 5 6	7 30 4	41 4 8	8 13	7 24 4	47 4 3	5 53	7 19 4	52 3 57							
6	S	12 5 34	7 30 4	42 5 21	9 17	7 24 4	48 5 15	6 57	7 19 4	53 5 9							
7	M	12 6 0	7 30 4	43 6 31	10 10	7 24 4	49 6 24	7 50	7 19 4	54 6 17							
8	T	12 6 27	7 30 4	44 sets	11 0	7 24 4	50 sets	8 40	7 19 4	55 sets							
9	W	12 6 53	7 30 4	45 5 31	11 46	7 24 4	51 5 37	9 26	7 19 4	56 5 43							
10	T	12 7 18	7 30 4	46 6 50	morn.	7 24 4	52 6 55	10 13	7 19 4	57 7 0							
11	F	12 7 43	7 29 4	47 8 11	0 33	7 24 4	53 8 14	10 58	7 19 4	58 8 17							
12	S	12 8 7	7 29 4	48 9 28	1 18	7 23 4	54 9 30	11 46	7 18 4	59 9 32							
13	S	12 8 31	7 29 4	49 10 45	2 6	7 23 4	55 10 45	morn	7 18 5	0 10 45							
14	M	12 8 54	7 28 4	50 11 56	2 15	7 23 4	56 11 55	0 31	7 18 5	1 11 54							
15	T	12 9 16	7 28 4	51 morn	3 38	7 22 4	57 morn	1 18	7 17 5	2 morn							
16	T	12 9 38	7 27 4	53 1 9	4 27	7 22 4	58 1 7	2 7	7 17 5	3 1 4							
17	W	12 9 59	7 27 4	54 2 21	5 20	7 22 4	59 2 17	3 0	7 17 5	4 2 13							
18	T	12 10 19	7 26 4	55 3 32	6 24	7 21 5	0 3 27	4 4	7 16 5	5 3 22							
19	F	12 10 38	7 26 4	56 4 41	7 35	7 21 5	1 4 35	5 15	7 16 5	6 4 28							
20	S	12 10 57	7 25 4	58 5 45	8 53	7 20 5	3 5 38	6 33	7 15 5	7 5 31							
21	S	12 11 15	7 24 4	59 6 41	9 59	7 19 5	4 6 35	7 39	7 14 5	8 6 27							
22	M	12 11 33	7 23 5	0 rises	10 53	7 18 5	5 rises	8 33	7 14 5	9 rises							
23	T	12 11 49	7 22 5	1 5 30	11 40	7 18 5	6 5 35	9 20	7 13 5	10 5 40							
24	W	12 12 5	7 22 5	3 6 34	ev. 22	7 17 5	8 6 37	10 2	7 12 5	12 6 42							
25	T	12 12 20	7 21 5	4 7 34	0 58	7 16 5	9 7 37	10 38	7 12 5	13 7 40							
26	F	12 12 34	7 20 5	5 8 33	1 31	7 15 5	10 8 37	11 11	7 11 5	14 8 38							
27	S	12 12 47	7 20 5	6 9 36	2 2	7 15 5	11 9 36	11 42	7 10 5	15 9 38							
28	S	12 13 0	7 19 5	7 10 30	2 33	7 14 5	12 10 29	ev. 13	7 10 5	16 10 28							
29	M	12 13 12	7 18 5	9 11 36	3 5	7 13 5	13 11 34	0 45	7 9 5	17 11 32							
30	T	12 13 23	7 17 5	10 morn	3 39	7 12 5	15 morn	1 19	7 8 5	19 morn							
31	W	12 13 33	7 16 5	11 0 40	4 16	7 12 5	16 0 37	1 56	7 8 5	20 0 34							
31	T	12 13 42	7 15 5	13 1 49	4 56	7 11 5	17 1 44	2 36	7 7 5	21 1 40							

REMARKABLE EVENTS IN JANUARY.

1. Norfolk burnt by Ld Dunmore, 1776.
4. Treaty between G.B. & U.S. signed,
7. Joseph Denny died, 1812. [1784.
8. Eli Whitney, inventor cotton gin, d.
10. Stamp act passed, 1765. [1825.
11. Linnæus the botanist died, 1778.
13. Halley the astronomer died, 1742.
15. Spenser the poet died, 1559.
16. Battle of Corunna, 1809.
17. Battle of the Cowpens, 1781.
19. Peter 2d of Russia died, 1730.
20. First English parliament, 1265.
21. Plague broke out at Edinb. 1647.
22. Great earthquake in S.Amer. 1834.
24. Frederick the Great born, 1712.
29. Timothy Pickering died, 1829.

MOON'S PHASES.		Boston.	N York.	Baltimore.	Pittsburgh	Cincinnati.
	D	H M	H M	H M	H M	H M
NEW MOON	6	5 52 m	5 40 m	5 30 m	5 17 m	4 59 m
FIRST QUARTER...	12	9 23 e	9 16 e	9 6 e	8 52 e	8 34 e
FULL MOON.....	20	4 56 e	4 44 e	4 34 e	4 21 e	4 3 e
LAST QUARTER	28	8 57 e	8 45 e	8 35 e	8 22 e	8 4 e

DAY OF MONTH.	DAY OF WEEK.	Shadow at the noon mark.	CALENDAR For Boston, N England, New-York State, Michigan, Wisconsin and Iowa.				CALENDAR For N. York City, Philadelphia, Connecticut, Penn., New-Jersey, Ohio, Indiana, Illinois.				CALENDAR For Baltimore, Virginia, Kentucky, Missouri and California.			
			SUN		MOON	H. W.	SUN		MOON	H. W.	SUN		MOON	H. W.
			rises.	sets.	rises.	Bost	rises.	sets.	rises.	N. Y.	rises.	sets.	rises.	sets.	rises.
1	F	12 13 51	7 14	5 14	2 57	5 54	7 19	5 18	2 51	3 34	7 6	5 22	2 46	
2	S	12 13 59	7 13	5 15	4 8	7 10	7 9	5 19	4 2	4 50	7 5	5 23	3 55	
3	S	12 14 6	7 11	5 16	5 16	8 32	7 7	5 20	5 9	6 12	7 4	5 24	5 1	
4	M	12 14 12	7 10	5 18	6 14	9 48	7 6	5 22	6 7	7 28	7 3	5 25	6 0	
5	T	12 14 17	7 9	5 19	sets	10 45	7 5	5 23	sets	8 25	7 2	5 26	sets	
6	W	12 14 22	7 8	5 20	5 44	11 36	7 4	5 24	5 48	9 16	7 1	5 27	5 52	
7	T	12 14 26	7 7	5 22	7 5	morn	7 3	5 25	7 8	10 3	7 0	5 28	7 10	
8	F	12 14 28	7 6	5 23	8 29	0 23	7 2	5 26	8 30	10 47	6 59	5 29	8 31	
8	S	12 14 31	7 5	5 25	9 40	1 7	7 1	5 28	9 40	11 29	6 58	5 31	9 39	
10	S	12 14 32	7 4	5 26	10 56	1 49	7 0	5 29	10 53	morn	6 57	5 32	10 51	
11	M	12 14 32	7 2	5 27	morn	2 31	6 59	5 30	morn	0 11	6 56	5 33	morn	
12	T	12 14 32	7 1	5 29	0 9	3 15	6 58	5 31	0 6	0 55	6 55	5 34	0 2	
13	W	12 14 31	7 0	5 30	1 23	3 55	6 57	5 32	1 18	1 35	6 54	5 35	1 13	
14	T	12 14 29	6 58	5 31	2 34	4 40	6 56	5 33	2 28	2 20	6 53	5 36	2 21	
15	F	12 14 27	6 57	5 33	3 40	5 37	6 54	5 34	3 34	3 17	6 52	5 38	3 26	
16	S	12 14 23	6 55	5 34	4 39	6 59	6 53	5 36	4 32	4 39	6 50	5 39	4 24	
17	S	12 14 19	5 54	5 35	5 28	8 29	6 51	5 37	5 21	6 9	6 49	5 40	5 14	
18	M	12 14 14	6 52	5 36	6 7	9 53	6 50	5 38	6 1	7 33	6 48	5 41	5 55	
19	T	12 14 9	6 51	5 38	6 41	10 49	6 49	5 40	6 36	8 29	6 47	5 42	6 31	
20	W	12 14 3	6 50	5 39	rises	11 29	6 48	5 41	rises	9 9	6 46	5 43	rises	
21	T	12 12 56	6 48	5 41	6 27	ev. 5	6 46	5 43	6 28	9 45	6 44	5 45	6 31	
22	F	12 13 48	6 47	5 42	7 27	0 40	6 45	5 44	7 28	10 20	6 43	5 46	7 28	
23	S	12 13 40	6 45	5 43	8 27	1 7	6 43	5 45	8 27	10 47	6 42	5 47	8 26	
24	S	12 13 32	6 44	5 45	9 28	1 36	6 42	5 47	9 27	11 16	6 40	5 48	9 25	
25	M	12 13 22	6 42	5 46	10 30	2 5	6 40	5 48	10 27	11 45	6 38	5 49	10 24	
26	T	12 13 12	6 40	5 47	11 35	2 33	6 38	5 49	11 31	ev. 13	6 37	5 50	11 27	
27	W	12 14 2	6 38	5 48	morn	3 2	6 37	5 50	morn	0 42	6 35	5 51	morn	
28	T	12 12 51	6 37	5 49	0 43	3 33	6 35	5 51	0 38	1 13	5 34	5 52	0 32	
29	F	12 12 40	6 37	5 50	1 51	4 12	6 35	5 52	1 45	1 52	6 34	5 51	1 39	

REMARKABLE EVENTS IN FEBRUARY.

- | | |
|---|--|
| 3. Death of Bonaparte's mother, 1836. | 15. Rome declared a Republic, 1798. |
| 4. Gen. Wade Hampton died, 1835. | 16. Death of Lindley Murray, 1826. |
| 6. Birthday of Aaron Burr, 1756. | 18. Vermont admitted into Union, 1791. |
| 7. Earthquake in Philadelphia, 1812. | 18. William Wirt died, 1834. |
| 9. Hooper, bishop of Gloucester, burnt | 20. James I. of Scotland murd. 1437. |
| 10. Great comet appeared 1680. [1555. | 20. British evacuated Egypt, 1803. |
| 11. Revolution in St. Domingo, 1807. | 20. Arthur Young died, 1820. |
| 12. Jane Grey beheaded, 1534. | 21. Eugene de Beauharnois died, 1824. |
| 13. Cotton Mather died at Boston, 1728. | 22. Great snow in New-England, 1717. |
| 13. Ethan Allen died, 1789. | 22. British stamp act repealed, 1766. |

MOON'S PHASES.		Boston.	N. York.	Baltimore.	Pittsburgh.	Cincinnati.
	D	H M	H M	H M	H M	H M
NEW MOON	6	3 55 e	3 43 e	3 33 e	3 20 e	3 2 e
FIRST QUARTER	13	9 52 m	9 40 m	9 30 m	9 17 m	8 59 m
FULL MOON.....	22	11 21 m	11 9 m	10 59 m	10 45 m	10 27 m
LAST QUARTER.....	29	9 48 m	9 36 m	9 26 m	9 12 m	8 54 m

DAY OF MONTH.	DAY OF WEEK.	CALENDAR For Boston, N. England, New-York State, Michigan, Wisconsin and Iowa.				CALENDAR For N. York City, Philadelphia, Connecticut, Penn., New-Jersey, Ohio, Indiana, Illinois				CALENDAR For Baltimore, Virginia, Kentucky, Missouri and California.				
		Shadow at the noon mark.		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.
		Afternoon	H M S	H M	H M	H M	H M	H M	H M	H M	H M	H M	H M	H M
1	T	12 12 28	6 36	5 51	2 59	5 2	6 35	5 53	2 51	2 42	6 33	5 52	2 44	
2	M	12 12 15	6 35	5 52	3 54	6 42	6 34	5 53	3 46	4 2	6 31	5 53	3 39	
3	T	12 12 2	6 33	5 53	4 51	7 58	6 32	5 54	4 44	5 38	6 30	5 54	4 38	
4	W	12 11 49	6 31	5 54	5 34	9 32	6 30	5 55	5 29	7 12	6 29	5 55	5 23	
5	T	12 11 35	6 30	5 55	6 8	10 30	6 29	5 56	6 6	8 10	6 27	5 56	6 0	
6	W	12 11 21	6 28	5 56	sets	11 20	6 27	5 57	sets	9 0	6 26	5 57	sets	
7	T	12 11 6	6 26	5 57	7 15	morn	6 25	5 57	7 15	9 44	6 25	5 58	7 15	
8	W	12 10 51	6 25	5 58	8 32	0 4	6 24	5 59	8 31	10 25	6 24	5 59	8 29	
9	T	12 10 36	6 23	5 59	9 50	0 45	6 22	6 0	9 46	11 5	6 22	6 0	9 44	
10	W	12 10 20	6 21	6 0	11 6	1 25	6 20	6 1	11 2	11 48	6 20	6 1	10 57	
11	T	12 10 4	6 20	6 2	morn	2 8	6 19	6 2	morn	morn	6 18	6 2	morn	
12	W	12 9 48	6 18	6 3	0 22	2 46	6 17	6 3	0 16	0 26	6 17	6 3	0 10	
13	T	12 9 31	6 16	6 4	1 31	3 25	6 16	6 4	1 25	1 5	6 15	6 4	1 18	
14	W	12 9 14	6 14	6 5	2 34	4 12	6 14	6 5	2 27	1 52	6 14	6 5	2 19	
15	T	12 8 57	6 13	6 6	3 27	5 6	6 12	6 7	3 21	2 46	6 13	6 6	3 13	
16	W	12 8 39	6 11	6 7	4 9	6 34	6 11	6 8	4 3	4 14	6 11	6 7	3 57	
17	T	12 8 22	6 9	6 9	4 44	8 11	6 9	6 9	4 39	5 51	6 10	6 8	4 34	
18	W	12 8 4	6 7	6 10	5 12	9 36	6 7	6 10	5 8	7 16	6 8	6 9	5 4	
19	T	12 7 46	6 6	6 11	5 36	10 30	6 6	6 11	5 33	8 10	6 6	6 10	5 30	
20	W	12 7 28	6 4	6 12	5 56	11 9	6 4	6 12	5 55	8 49	6 5	6 11	5 53	
21	T	12 7 9	6 2	6 13	6 16	11 41	6 2	6 13	6 15	9 21	6 3	6 12	6 15	
22	W	12 6 51	5 0	6 14	rises	ev. 10	6 1	6 14	rises	9 50	6 2	6 13	rises	
23	T	12 6 33	5 59	6 15	8 23	0 38	5 59	6 15	8 20	10 18	6 1	6 14	8 18	
24	W	12 6 14	5 57	6 17	9 26	1 5	5 58	6 16	9 23	10 45	6 0	6 15	9 19	
25	T	12 5 55	5 55	6 18	10 34	1 32	5 56	6 17	10 29	11 12	5 59	6 16	10 23	
26	W	12 5 37	5 53	6 19	11 40	2 1	5 54	6 18	11 34	11 41	5 57	6 17	11 28	
27	T	12 5 18	5 52	6 20	morn	2 29	5 52	6 19	morn	ev. 9	5 56	6 18	morn	
28	W	12 5 0	5 50	6 21	0 47	3 3	5 51	6 20	0 40	0 43	5 54	6 19	0 33	
29	T	12 4 41	5 48	6 22	1 49	3 45	5 49	6 21	1 42	1 25	5 53	6 20	1 34	
30	W	12 4 23	5 46	6 23	2 44	4 39	5 47	6 22	2 37	2 19	5 52	6 21	2 30	
31	T	12 4 5	5 45	6 24	3 27	6 2	5 46	6 23	3 21	3 42	5 50	6 22	3 15	

REMARKABLE EVENTS IN MARCH.

1. The Cultivator commenced, 1833.
2. Jews banished from Spain, 1492.
3. War declared between U. S. and Algiers, 1815. [1776.
4. Americans took Dorchester Heights, [1776.
5. Aurora Borealis first seen in England, 1716.
6. Revolution in Warsaw, 1794.
7. Great Earthquake at London, 1750.
8. British soldiers plundered Boston, 1776.
9. Great Eruption of Mt. Etna, 1669.
10. Groton burnt by Indians, 1676.
11. Remarkable eruption of Vesuvius, 1835.
12. Indians attack Northampton, 1676.

MOON'S PHASES.	D	Boston.		N. York.		Baltimore.		Pittsburgh		Cincinnati.	
		H	M	H	M	H	M	H	M	H	M
NEW MOON	5	1	9 m	0	57 m	0	47 m	0	33 m	0	15 m
FIRST QUARTER (+12th)	11	†	0 8 m	11	56 e	11	46 e	11	33 e	11	15 e
FULL MOON.....	20	4	30 m	4	18 m	4	8 m	3	54 m	3	36 m
LAST QUARTER	27	6	42 e	6	31 e	6	20 e	6	7 e	5	49 e

DAY OF MONTH.	DAY OF WEEK.	Shadow at the noon mark.	CALENDAR For Boston, N. England, New-York State, Michigan, Wisconsin and Iowa.				CALENDAR For N. York City, Philadelphia, Connecticut, Penn., New-Jersey, Ohio, Indiana, Illinois.				CALENDAR For Baltimore, Virginia, Kentucky, Missouri and California.			
			SUN r. sets.		MOON H. W rises. Post		SUN r. sets		MOON H. W rises. N. Y.		SUN r. sets.		MOON rises.	
			H	M	S	H	M	H	M	H	M	H	M	H	M
1	T	12 3 47	5 43	6 26	4 14	7 42	5 45	6 24	4 9	5 22	5 46	6 23	3 55	
2	W	12 3 29	5 42	6 28	4 34	9 11	5 44	6 26	4 31	6 51	5 45	6 24	4 28	
3	T	12 3 11	5 40	6 29	4 52	10 9	5 42	6 27	4 50	7 19	5 43	6 25	4 49	
4	F	12 2 53	5 38	6 30	sets	10 56	5 40	6 28	sets	8 38	5 41	6 26	sets	
5	S	12 2 36	5 36	6 31	7 21	11 35	5 38	6 29	7 19	9 10	5 40	6 27	7 17	
6	S	12 2 18	5 34	6 32	8 39	morn	5 36	6 30	8 36	9 57	5 38	6 28	8 32	
7	M	12 2 1	5 32	6 33	9 58	0 17	5 34	6 31	9 5	10 39	5 36	6 29	9 48	
8	T	12 1 44	5 31	6 34	11 13	0 59	5 32	6 32	10 6	11 18	5 35	6 30	11 0	
9	W	12 1 28	5 29	6 35	morn	1 38	5 31	6 33	morn	11 58	5 33	6 31	morn	
10	T	12 1 11	5 27	6 36	0 39	2 18	5 29	6 34	0 30	morn	5 31	6 32	0 24	
11	F	12 0 55	5 26	6 37	1 21	3 15	5 28	6 35	1 14	0 41	5 30	6 33	1 6	
12	S	12 0 39	5 24	6 38	2 18	3 47	5 26	6 36	2 12	1 27	5 28	6 34	1 55	
13	S	12 0 24	5 23	6 40	2 46	4 47	5 25	6 37	2 40	2 27	5 27	6 35	2 35	
14	M	12 0 9	5 21	6 41	3 18	6 11	5 24	6 38	3 14	3 51	5 26	6 36	3 8	
15	T	morn.	5 19	6 42	3 42	7 42	5 22	6 39	3 38	5 22	5 24	6 37	3 35	
16	W	11 59 39	5 18	6 43	4 3	9 0	5 21	6 40	4 1	6 40	5 23	6 38	3 59	
17	T	11 59 25	5 16	6 44	4 31	9 54	5 19	6 41	4 20	7 34	5 22	6 39	4 20	
18	F	11 59 11	5 14	6 45	4 40	10 32	5 17	6 42	4 40	8 12	5 20	6 40	4 40	
19	S	11 58 58	5 13	6 47	rises	11 6	5 16	6 44	rises	8 46	5 19	6 41	rises.	
20	S	11 58 45	5 11	6 48	7 19	11 33	5 14	6 45	7 15	9 13	5 17	6 42	7 12	
21	M	11 58 32	5 10	6 49	8 25	ev. 3	5 13	6 46	8 20	9 43	5 16	6 43	8 15	
22	T	11 58 20	5 8	6 50	9 31	0 32	5 11	6 47	9 26	10 12	5 14	6 44	9 20	
23	W	11 58 9	5 6	6 51	10 40	1 35	5 10	6 48	10 34	10 42	5 13	6 45	10 27	
24	T	11 57 57	5 5	6 52	11 43	1 33	5 9	6 49	11 36	11 13	5 12	6 46	11 28	
25	F	11 57 47	5 3	6 53	morn	2 8	5 7	6 50	morn	11 48	5 10	6 46	morn	
26	S	11 57 37	5 2	6 54	0 40	2 46	5 6	6 51	0 32	ev. 26	5 9	6 47	0 25	
27	S	11 57 27	5 1	6 55	1 24	3 32	5 5	6 52	1 18	1 12	5 8	6 48	1 12	
28	M	11 57 18	4 59	6 56	2 3	4 32	5 3	6 53	1 58	2 12	5 6	6 49	1 53	
29	T	11 57 9	4 58	6 58	2 34	5 55	5 2	6 54	2 31	3 35	5 5	6 50	2 27	
30	W	11 57 1	4 56	6 59	3 0	8 15	5 0	6 55	5 58	5 5	5 3	6 51	2 56	

REMARKABLE EVENTS IN APRIL.

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|---|--|
| 1. Gen. John Armstrong died, 1843. | 9. Bacon, the philosopher, died 1670. |
| 2. The American Farmer established, 1819. | 10. Gen. Gates died, 1806. |
| 3. Death of Bishop Heber, 1825. | 11. Last king of Poland died, 1798. |
| 4. Embargo law passed by Congress, | 12. Constantinople taken, 1204. |
| 5. Danton guillotined, 1794. [1812. | 13. Cairo taken by the Turks, 50,000 people massacred, 1517. |
| 6. Richard (Cœur de Lion,) killed, 1190. | 14. Embargo law repealed, 1814. |
| 7. First settlement of Ohio, 1788. | 16. Battle of Culloden, 1746. |
| | 11. Death of Rowland Hill, 1833 |

MOON'S PHASES.		Boston.	N. York.	Baltimore	Pittsburgh.	Cincinnati.
	D	H M	H M	H M	H M	H M
NEW MOON	4	9 58 m	9 46 m	9 36 m	9 23 m	9 5 m
FIRST QUARTER	11	4 1 e	3 49 e	3 39 e	3 26 e	3 8 e
FULL MOON.....	19	7 12 e	7 1 e	6 50 e	6 37 e	6 19 e
LAST QUARTER (26th)	27	0 50 m	0 38 m	0 28 m	0 14 m	*11 56 e

DAY OF MONTH.	DAY OF WEEK.	Shadow at the noon mark.	CALENDAR For Boston, N. England, New-York State, Michigan, Wisconsin and Iowa.				CALENDAR For N. York City, Philadelphia, Connecticut, Penn., New-Jersey, Ohio, Indiana, Illinois				CALENDAR For Baltimore, Virginia, Kentucky, Missouri 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 S	H M	H M	H M	H M	H M	H M	H M	H M	H M	H M	
1	T	11 56 54	4 55 7	0 3 24	8 42	4 59 6	5 56	3 23	6 22	5 26	5 2	3 23		
2	F	11 56 47	4 53 7	1 3 49	9 38	4 57 6	5 57	3 50	7 18	5 16	5 3	3 51		
3	S	11 56 41	4 52 7	2 4 14	10 24	4 56 6	5 58	4 16	8 4	5 06	5 4	4 18		
4	S	11 56 35	4 50 7	3 sets	11 8	4 54 6	5 59	sets	8 48	4 58	6 55	sets		
5	M	11 56 30	4 49 7	4 8 48	11 53	4 53 7	0 8 42	9 33	4 57	6 56	8 36			
6	T	11 56 25	4 48 7	5 10 7	morn	4 52 7	1 9 54	10 15	4 56	6 57	9 47			
7	W	11 56 21	4 47 6	6 11 6	0 35	4 51 7	2 10 59	10 56	4 55	6 58	10 51			
8	T	11 56 17	4 46 7	7 12 0	1 16	4 50 7	3 11 53	11 38	4 51	6 59	11 46			
9	F	11 56 14	4 45 7	8 morn	1 58	4 49 7	4 morn	morn	4 53	7 0	morn			
10	S	11 56 12	4 44 7	9 0 43	2 43	4 48 7	5 0 37	0 23	4 52	7 1	0 31			
11	S	11 56 10	4 43 7	10 1 18	3 31	4 47 6	6 1 14	1 11	4 51	7 2	1 8			
12	M	11 56 9	4 42 7	11 1 44	4 27	4 46 7	7 1 41	2 7	4 50	7 3	1 37			
13	T	11 56 8	4 41 7	12 2 7	5 35	4 45 7	8 2 5	3 15	4 49	7 4	2 2			
14	W	11 56 8	4 40 7	13 2 27	7 54	4 44 7	9 2 26	4 34	4 48	7 5	2 24			
15	T	11 56 8	4 39 7	14 2 44	8 3	4 43 7	10 2 44	5 43	4 47	7 6	2 44			
16	F	11 56 9	4 38 7	15 3 3	9 0	4 42 7	11 3 4	6 40	4 46	7 7	3 5			
17	S	11 56 10	4 37 7	16 3 22	9 45	4 42 7	11 3 24	7 25	4 46	7 7	3 26			
18	S	11 56 12	4 36 7	17 3 44	10 21	4 41 7	12 3 47	8 1	4 45	7 8	3 51			
19	M	11 56 15	4 36 7	18 rises	10 58	4 40 7	13 rises.	8 35	4 44	7 9	rises			
20	T	11 56 18	4 35 7	19 8 29	11 32	4 40 7	14 8 23	9 12	4 44	7 10	8 17			
21	W	11 56 22	4 34 7	20 9 37	ev. 6	4 39 7	15 9 30	9 40	4 43	7 10	9 22			
22	T	11 56 26	4 33 7	21 10 35	0 41	4 38 7	16 10 28	10 21	4 43	7 11	10 20			
23	F	11 56 30	4 32 7	22 11 25	1 16	4 37 7	17 11 19	10 56	4 42	7 12	11 12			
24	S	11 56 36	4 32 7	23 morn	1 57	4 37 7	18 11 59	11 37	4 42	7 13	11 53			
25	S	11 56 42	4 31 7	24 0 4	2 41	4 36 7	19 morn	ev. 21	4 41	7 14	morn			
26	M	11 56 48	4 30 7	25 0 37	3 32	4 35 7	19 0 33	1 12	4 40	7 15	0 29			
27	T	11 56 55	4 29 7	26 1 3	4 31	4 35 7	20 1 1	2 11	4 40	7 16	0 58			
28	W	11 57 2	4 29 7	27 1 29	5 42	4 34 7	21 1 28	3 22	4 39	7 16	1 26			
29	T	11 57 10	4 28 7	28 1 51	6 58	4 34 7	22 1 51	4 38	4 39	7 17	1 51			
30	F	11 57 18	4 27 7	28 2 15	8 2	4 33 7	23 2 11	5 42	4 38	7 18	2 18			
31	S	11 57 26	4 26 7	29 2 42	9 1	4 32 7	23 2 45	6 41	4 37	7 18	2 48			

REMARKABLE EVENTS IN MAY.

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|---|---|
| 4. Seringapatam taken by the British, 1779. | 9. Spaniards took Pensacola, 1781. |
| 5. Battle of Prague, 42,000 killed, 1757. | 10. Ticonderoga taken, 1775. |
| 5. France formed into an empire, 1804. | 10. Battle of Lodi, 1796. |
| 7. Death of James M. Garrett, 1843. | 11. Great eruption of Mount Etna, 1537. |
| 8. Robert Morris died, 1806. | 12. Vienna taken by Napoleon, 1809. |
| | 13. Cardinal Fesch died, 1839. |

MOON'S PHASES.		Boston.	N. York.	Baltimore.	Pittsburgh.	Cincinnati.
	D	H M	H M	H M	H M	H M
NEW MOON	2	6 55 e	6 44 e	6 33 e	6 21 e	6 3 e
FIRST QUARTER.....	10	9 6 m	8 54 m	8 44 m	8 31 m	8 13 m
FULL MOON.....	18	7 8 m	6 56 m	6 56 m	6 32 m	6 14 m
LAST QUARTER	25	5 33 m	5 22 m	5 11 m	4 58 m	4 40 m

DAY OF MONTH.	DAY OF WEEK.	Shadow at the noon mark.	CALENDAR For Boston, N. England, New-York State, Michigan, Wisconsin and Iowa.				CALENDAR For N. York City, Philadelphia, Connecticut, Penn., New-Jersey, Ohio, Indiana, Illinois.				CALENDAR For Baltimore, Virginia, Kentucky, Missouri 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.	
1	S	11 57 35	4 26	7 30	3 10	9 54	4 32	7 24	3 15	7 34	4 37	7 19	3 20	
2	M	11 57 45	4 25	7 31	sets	10 47	4 31	7 25	sets	8 27	4 37	7 19	sets	
3	T	11 57 55	4 25	7 32	8 48	11 34	4 31	7 26	8 41	9 14	4 36	7 20	8 33	
4	W	11 58 5	4 24	7 32	9 48	morn	4 30	7 26	9 41	10 0	4 36	7 20	9 33	
5	T	11 58 15	4 24	7 33	10 38	0 20	4 30	7 27	10 32	10 44	4 36	7 21	10 26	
6	F	11 58 26	4 23	7 34	11 15	1 4	4 29	7 27	11 10	11 27	4 35	7 21	11 4	
7	S	11 58 37	4 23	7 35	11 46	1 47	4 29	7 28	11 41	morn	4 35	7 22	11 37	
8	S	11 58 49	4 23	7 35	morn	2 30	4 29	7 29	morn	0 10	4 35	7 23	morn	
9	M	11 59 0	4 22	7 36	0 10	3 17	4 28	7 29	0 7	0 57	4 34	7 24	0 4	
10	T	11 59 12	4 22	7 36	0 30	4 4	4 28	7 30	0 28	1 44	4 34	7 24	0 27	
11	W	11 59 24	4 22	7 37	0 50	4 53	4 28	7 30	0 50	2 33	4 34	7 24	0 49	
12	T	11 59 36	4 22	7 37	1 8	5 52	4 28	7 31	1 9	3 32	4 34	7 25	1 9	
13	F	11 59 49	4 22	7 38	1 26	6 55	4 28	7 31	1 28	4 35	4 34	7 25	1 30	
14	S	after'n	4 22	7 38	1 47	7 50	4 28	7 32	1 50	5 30	4 34	7 26	1 53	
15	S	12 0 14	4 22	7 38	2 9	8 46	4 28	7 32	2 14	6 26	4 34	7 26	2 18	
16	M	12 0 27	4 22	7 39	2 38	9 36	4 28	7 32	2 43	7 16	4 34	7 26	2 49	
17	T	12 0 39	4 22	7 39	rises	10 20	4 28	7 33	rises	8 0	4 34	7 27	rises	
18	W	12 0 52	4 22	7 39	8 27	11 3	4 28	7 33	8 20	8 43	4 34	7 27	8 12	
19	T	12 1 5	4 22	7 39	9 20	11 44	4 28	7 33	9 14	9 24	4 34	7 27	9 7	
20	F	12 1 18	4 22	7 39	10 3	ev. 25	4 28	7 34	9 58	10 5	4 34	7 27	9 52	
21	S	12 1 31	4 22	7 39	10 40	1 7	4 29	7 34	10 35	10 47	4 35	7 28	10 30	
22	S	12 1 44	4 23	7 39	11 7	1 51	4 29	7 34	11 4	11 31	4 35	7 28	11 1	
23	M	12 1 57	4 23	7 40	11 22	2 37	4 29	7 34	11 21	ev. 17	4 35	7 28	11 19	
24	T	12 2 9	4 23	7 40	11 56	3 27	4 29	7 34	11 56	1 7	4 35	7 28	11 55	
25	W	12 2 22	4 23	7 40	morn	4 21	4 29	7 35	morn	2 1	4 35	7 29	morn	
26	T	12 2 35	4 23	7 40	0 19	5 21	4 29	7 35	0 20	3 1	4 35	7 29	0 22	
27	F	12 2 47	4 24	7 40	0 44	6 25	4 30	7 35	0 46	4 5	4 36	7 29	0 49	
28	S	12 2 59	4 24	7 40	1 11	7 25	4 30	7 35	1 15	5 5	4 36	7 29	1 19	
29	S	12 3 11	4 24	7 40	1 45	8 31	4 30	7 35	1 51	6 11	4 36	7 29	1 56	
30	M	12 3 23	4 25	7 40	2 25	9 34	4 31	7 35	2 32	7 14	4 37	7 29	2 38	

REMARKABLE EVENTS IN JUNE.

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|--|---|
| 1. Boston port bill went into operation, 1774. | 6. Jeremy Bentham died, 1832. |
| 2. Earthquake at Cairo, 40,000 people destroyed, 1754. | 6. Patrick Henry died, 1799. |
| 3. Jethro Tull died, 1740. | 7. Mahomet I. died, 632. |
| 4. St. Pauls, London, burnt 1561. | 8. Nero committed suicide, 68. |
| 5. First public ascension in a balloon, 1783. | 10. First Dutch emigrants landed at New-York, 1610. |
| | 11. Death of Roger Bacon, 1294. |
| | 11. New-York city incorporated, 1665. |

MOON'S PHASES.	D	Boston.	N. York.	Baltimore	Pittsburgh.	Cincinnati.
		H M	H M	H M	H M	H M
NEW MOON	2	4 46 m	4 35 m	4 24 m	4 11 m	3 53 m
FIRST QUARTER	10	2 38 m	2 26 m	2 16 m	2 3 m	1 45 m
FULL MOON.....	17	4 47 e	4 35 e	4 25 e	4 12 e	3 54 e
LAST QUARTER	24	10 18 m	10 6 m	9 56 m	9 43 m	9 25 m
NEW MOON	31	4 24 e	4 13 e	4 2 e	3 49 e	3 31 e

DAY OF MONTH. DAY OF WEEK.	Shadow at the noon mark.		CALENDAR For Boston, N.England, New-York State, Michigan, Wisconsin and Iowa.				CALENDAR For N.York City, Philadelphia, Connecticut, Penn., New-Jersey, Ohio, Indiana, Illinois				CALENDAR For Baltimore, Virginia, Kentucky, Missouri and California.										
			Afternoon		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	S	H	M	H	M	H	M	H	M	H	M	H	M				
1 T	12	3	35	4	25	7	40 sets	10	32	4	31	7	34 sets	8	12	4	37	7	29 sets		
2 W	12	3	46	4	26	7	40 8 28	11	25	4	32	7	34	8	21	9	5	4	37	7	29 8 14
3 T	12	3	58	4	27	7	40 9 11 morn	4	33	7	34	9	5	9	52	4	38	7	29	8	59
4 F	12	4	8	4	27	7	39 9 44	0	12	4	33	7	33	9	39	10	37	4	38	7	28 9 34
5 S	12	4	19	4	28	7	39 10 12	0	57	4	34	7	33	10	8	11	16	4	39	7	28 10 5
6 S	12	4	29	4	29	7	39 10 33	1	36	4	35	7	33	10	31	11	53	4	40	7	28 10 29
7 M	12	4	39	4	29	7	39 10 53	2	13	4	35	7	33	10	52	morn	4	40	7	28	10 51
8 T	12	4	48	4	30	7	38 11 12	2	51	4	36	7	32	11	12	0	31	4	41	7	27 11 13
9 W	12	4	57	4	31	7	38 11 30	3	29	4	37	7	32	11	31	1	9	4	42	7	27 11 33
10 T	12	5	5	4	32	7	38 11 49	4	10	4	37	7	32	11	52	1	50	4	42	7	27 11 54
11 F	12	5	13	4	33	7	37 morn	4	52	4	38	7	31	morn	2	32	4	43	7	26 morn	
12 S	12	5	21	4	33	7	37 0 11	5	42	4	39	7	31	0	14	3	22	4	44	7	26 0 18
13 S	12	5	28	4	34	7	36 0 37	6	41	4	40	7	30	0	42	4	21	4	45	7	25 0 47
14 M	12	5	35	4	35	7	36 1 10	7	43	4	41	7	30	1	16	5	23	4	45	7	25 1 22
15 T	12	5	41	4	36	7	35 1-51	8	50	4	42	7	29	1	58	6	30	4	46	7	24 2 5
16 W	12	5	46	4	37	7	34 2 46	9	29	4	43	7	29	2	53	7	9	4	47	7	24 3 1
17 T	12	5	51	4	37	7	34 rises	10	41	4	44	7	28	rises	8	21	4	48	7	23 rises	
18 F	12	5	56	4	38	7	33 8 38	11	31	4	45	7	28	8	33	9	11	4	49	7	23 8 28
19 S	12	6	0	4	39	7	32 9 9	ev.16	4	46	7	27	9	5	9	56	4	50	7	22 9 2	
20 S	12	6	3	4	40	7	32 9 35	0	59	4	46	7	26	9	33	10	39	4	50	7	21 9 31
21 M	12	6	6	4	41	7	31 9 59	1	42	4	47	7	26	9	59	11	22	4	51	7	21 9 58
22 T	12	6	8	4	42	7	30 10 23	2	26	4	48	7	25	10	24	ev. 6	4	52	7	20 10 24	
23 W	12	6	10	4	43	7	29 10 46	3	12	4	49	7	24	10	48	0	52	4	53	7	19 10 50
24 T	12	6	11	4	44	7	28 11 13	3	58	4	50	7	23	11	17	1	38	4	53	7	18 11 21
25 F	12	6	12	4	45	7	27 11 45	4	48	4	51	7	22	11	50	2	28	4	54	7	17 11 56
26 S	12	6	12	4	46	7	26 morn	5	44	4	52	7	21	morn	3	24	4	55	7	16 morn	
27 S	12	6	11	4	47	7	25 0 23	6	54	4	52	7	20	0	27	4	34	4	56	7	16 0 35
28 M	12	6	10	4	48	7	24 1 10	8	10	4	53	7	19	1	17	5	50	4	56	7	15 1 24
29 T	12	6	9	4	49	7	23 2 5	9	28	4	54	7	18	2	12	7	8	4	57	7	14 2 20
30 W	12	6	6	4	50	7	22 3 7	10	30	4	54	7	18	3	14	8	10	4	58	7	14 3 21
31 T	12	6	4	4	51	7	21 sets	11	22	4	55	7	17	sets	9	2	4	59	7	13 sets	

REMARKABLE EVENTS IN JULY.

1. The Horticulturist established, 1836.
2. Washington arrived at Cambridge, 1775.
3. Ft. Erie taken by Gen. Brown, 1814.
4. Death of Adams and Jefferson, 1826.
5. Battle of Chippewa, 1814.
6. Battle of James river, 1781.
6. Chief Justice Marshall died, 1835.
7. John Huss burnt, 1415.
8. Edward Burke died, 1797.
10. London Bridge burnt, when 3,000 people perished in the flames, 1212.
28. A. J. Downing drowned by the burning of the Henry Clay, 1852.

MOON'S PHASES.	D	Boston.	N. York.	Baltimore.	Pittsburgh.	Cincinnati.
		H M	H M	H M	H M	H M
FIRST QUARTER.....	8	7 38 e	7 26 e	7 16 e	7 3 e	6 45 e
FULL MOON... (*15th)	16	1 11 m	0 59 m	0 49 m	0 36 m	0 18 m
LAST QUARTER.....	22	4 24 e	4 12 e	4 2 e	3 48 e	3 30 e
NEW MOON.....	30	6 30 m	6 18 m	6 8 m	5 55 m	5 37 m

DAY OF MONTH	DAY OF WEEK.	CALENDAR For Boston, N. England, New-York State, Michigan, Wisconsin and Iowa.						CALENDAR For N. York City, Philadelphia, Connecticut, Penn., New-Jersey, Ohio, Indiana, Illinois.				CALENDAR For Baltimore, Virginia, Kentucky, Missouri and California.														
		Shadow at the noon mark.		SUN rises.	SUN sets.	MOON sets.	H. W Post	SUN rises.	SUN sets.	MOON sets.	H. W N. Y.	SUN rises.	SUN sets.	MOON sets.												
		H	M	S	H	M	H	M	H	M	H	M	H	M	H	M										
1	F	12	6	0	4	52	7	20	8	13	morn	4	56	7	16	8	9	9	46	5	0	7	12	8	5	
2	S	12	5	56	4	53	7	19	8	36	0	6	4	57	7	15	8	34	10	23	5	1	7	11	8	31
3	M	12	5	51	4	54	7	18	8	57	0	43	4	58	7	14	8	55	10	57	5	1	7	10	8	54
4	Th	12	5	46	4	55	7	16	9	16	1	17	4	59	7	12	9	16	11	29	5	2	7	9	9	16
5	T	12	5	40	4	56	7	15	9	34	1	49	5	0	7	11	9	35	11	59	5	3	7	8	9	35
6	W	12	5	34	4	57	7	14	9	52	2	19	5	1	7	10	9	55	morn	5	4	7	7	9	5	7
7	T	12	5	26	4	58	7	13	10	13	2	52	5	2	7	9	10	16	0	32	5	5	7	6	10	20
8	F	12	5	19	4	59	7	11	10	35	3	25	5	3	7	7	10	40	1	5	5	6	7	4	10	45
9	S	12	5	10	5	7	10	11	6	3	59	5	4	7	6	11	11	1	39	5	7	7	3	11	17	
10	M	12	5	2	5	1	9	11	43	4	40	5	5	7	5	11	49	2	20	5	8	7	2	11	56	
11	M	12	4	52	5	2	8	morn	5	31	5	31	5	6	7	4	morn	3	11	5	9	7	0	morn		
12	T	12	4	42	5	3	7	0	20	6	46	5	7	7	3	0	37	4	26	5	10	6	59	0	45	
13	W	12	4	31	5	4	7	5	1	29	8	8	5	8	7	1	37	5	48	5	11	6	58	1	44	
14	T	12	4	20	5	5	7	4	2	41	9	28	5	9	7	0	2	47	7	8	5	12	6	57	2	54
15	F	12	4	8	5	6	7	2	rises	10	27	5	10	6	58	rises	8	7	5	13	6	55	rises			
16	S	12	3	56	5	7	7	0	7	38	11	17	5	11	6	56	7	35	8	57	5	14	6	54	7	32
17	S	12	3	43	5	8	6	59	8	1	12	0	5	12	6	53	8	0	9	40	5	15	6	53	7	59
18	M	12	3	30	5	9	6	57	8	26	ev. 43	5	13	6	52	8	26	10	23	5	16	6	51	8	26	
19	T	12	3	17	5	10	6	55	8	49	1	23	5	14	6	51	8	51	11	3	5	17	6	49	8	53
20	W	12	3	2	5	11	6	54	9	17	2	5	5	15	6	49	9	20	11	45	5	18	6	48	9	23
21	T	12	2	48	5	12	6	52	9	46	2	47	5	16	6	47	9	59	ev. 27	5	19	6	46	9	55	
22	F	12	2	33	5	14	6	51	10	23	3	30	5	17	6	46	10	29	1	10	5	20	6	45	10	35
23	S	12	2	17	5	15	6	50	11	6	4	15	5	18	6	45	11	13	1	55	5	21	6	44	11	20
24	S	12	2	1	5	16	6	48	11	59	5	10	5	19	6	44	morn	2	50	5	21	6	42	morn		
25	M	12	1	45	5	17	6	47	morn	6	27	5	20	5	42	0	6	4	7	5	22	6	41	0	14	
26	T	12	1	28	5	18	6	45	0	58	7	58	5	21	6	41	1	5	5	38	5	23	6	40	1	12
27	W	12	1	11	5	19	6	44	2	3	9	26	5	22	6	39	2	9	7	6	5	24	6	38	2	15
28	T	12	0	54	5	20	6	42	3	10	10	4	5	23	6	38	3	15	8	4	5	25	6	37	3	21
29	F	12	0	36	5	21	6	40	4	15	11	11	5	24	6	37	4	18	8	51	5	26	6	36	4	22
30	S	12	0	18	5	22	6	39	sets	11	49	5	25	6	36	sets	9	29	5	27	6	34	sets.			
31	M	12	0	0	5	23	6	37	7	22	morn	5	26	6	35	7	21	10	2	5	28	6	33	7	20	

REMARKABLE EVENTS IN AUGUST.

- Hurricane in the West Indies, when a fleet of 15 sail were lost. 1666.
- Massacre of Protestants at Nismes, 1815.
- Ben Johnson, the poet, died, 1637.
- Death of Queen Caroline, 1821.
- Gen. Hull evacuated Canada, 1812.
- Bombardment of Stonnington, 1814
- Battle of Bassano, 1796.
- British evacuated Savannah, 1782.
- Cortez retook Mexico, 1521.
- Earthquake in Syria, 20,000 people destroyed, 1822.
- Henry Colman died, 1849.
- First English child born in America, 1587.

MOON'S PHASES.	D	Boston.	N. York.	Baltimore.	Pittsburgh.	Cincinnati.
		H M	H M	H M	H M	H M
FIRST QUARTER	7	11 13 m	11 1 m	10 51 m	10 37 m	10 19 m
FULL MOON.....	14	9 24 m	9 13 m	9 2 m	8 49 m	8 31 m
LAST QUARTER (*20th)	21	1 4 m	0 53 m	0 42 m	0 29 m	0 11 m
NEW MOON	28	11 4 e	10 52 e	10 42 e	10 92 e	10 11 e

DAY OF MONTH.	DAY OF WEEK.	Shadow at the noon mark.	CALENDAR For Boston, N. England, New-York State, Michigan, Wisconsin and Iowa.					CALENDAR For N. York City, Philadelphia, Connecticut, Penn., New-Jersey, Ohio, Indiana, Illinois					CALENDAR For Baltimore, Virginia, Kentucky, Missouri and California.				
			Afternoon			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	S	H	M	H	M	H	M	H	M	H	M	H	M
1	M	11 59 41	5 24 6 35	7 40	0 22	5 27 6 33	7 40	10 32	5 29 6 31	7 40	10 32	5 29 6 31	7 40				
2	T	12 59 22	5 26 6 33	7 56	0 52	5 28 6 30	7 58	10 59	5 30 6 29	8 0	10 59	5 30 6 29	8 0				
3	W	11 59 3	5 27 6 32	8 19	1 19	5 29 6 31	8 22	11 28	5 31 6 28	8 25	11 28	5 31 6 28	8 25				
4	T	11 58 43	5 28 6 30	8 39	1 48	5 30 6 28	8 43	11 55	5 32 6 26	8 47	11 55	5 32 6 26	8 47				
5	F	11 58 23	5 29 6 28	9 5	2 15	5 31 6 26	9 10	morn	5 33 6 24	9 15	morn	5 33 6 24	9 15				
6	S	12 58 3	5 30 6 26	9 37	2 45	5 32 6 24	9 43	0 25	5 34 6 23	9 50	0 25	5 34 6 23	9 50				
7	S	11 57 43	5 31 6 25	10 19	3 16	5 33 6 23	10 26	0 56	5 35 6 21	10 33	0 56	5 35 6 21	10 33				
8	M	11 57 23	5 32 6 23	11 12	3 54	5 34 6 21	11 19	1 34	5 35 6 20	11 27	1 34	5 35 6 20	11 27				
9	T	11 57 2	5 33 6 21	morn	4 44	5 35 6 19	morn	2 24	5 36 6 18	morn	2 24	5 36 6 18	morn				
10	W	11 56 41	5 35 6 19	0 17	6 5	5 36 6 17	0 24	3 45	5 37 6 16	0 31	3 45	5 37 6 16	0 31				
11	T	11 56 20	5 36 6 17	1 31	7 39	5 37 6 16	1 36	5 19	5 38 6 15	1 42	5 19	5 38 6 15	1 42				
12	F	11 55 59	5 37 6 15	2 49	9 8	5 38 6 14	2 54	6 48	5 39 6 13	2 58	6 48	5 39 6 13	2 58				
13	S	11 55 38	5 38 6 14	rises	10 7	5 39 6 13	rises	7 47	5 40 6 12	rises	7 47	5 40 6 12	rises				
14	S	11 55 17	5 39 6 12	6 26	10 57	5 40 6 11	6 26	8 37	5 41 6 10	6 26	8 37	5 41 6 10	6 26				
15	M	11 54 56	5 40 6 10	6 50	11 38	5 41 6 9	6 51	9 18	5 41 6 9	6 52	9 18	5 41 6 9	6 52				
16	T	11 54 35	5 41 6 8	7 17	ev. 18	5 42 6 7	7 19	9 58	5 42 6 7	7 22	9 58	5 42 6 7	7 22				
17	W	11 54 13	5 42 6 6	7 45	0 58	5 43 6 5	7 49	10 38	5 43 6 5	7 54	10 38	5 43 6 5	7 54				
18	T	11 53 52	5 43 6 5	8 20	1 39	5 44 6 4	8 25	11 19	5 44 6 4	8 31	11 19	5 44 6 4	8 31				
19	F	11 53 31	5 44 6 3	9 3	2 17	5 44 6 2	9 9	11 57	5 44 6 2	9 16	11 57	5 44 6 2	9 16				
20	S	11 53 19	5 45 6 1	9 53	3 0	5 45 6 0	10 0	ev. 40	5 45 6 0	10 8	ev. 40	5 45 6 0	10 8				
21	S	11 52 49	5 46 6 0	10 52	3 45	5 46 5 59	10 59	1 25	5 46 5 59	11 7	1 25	5 46 5 59	11 7				
22	M	11 52 28	5 47 5 58	11 56	4 45	5 47 5 57	morn	2 25	5 47 5 57	morn	2 25	5 47 5 57	morn				
23	T	11 52 7	5 48 5 56	morn	6 12	5 48 5 56	0 2	3 52	5 48 5 56	0 9	3 52	5 48 5 56	0 9				
24	W	11 51 47	5 50 5 55	0 58	7 50	5 49 5 54	1 3	5 30	5 49 5 54	1 9	5 30	5 49 5 54	1 9				
25	T	11 51 26	5 51 5 53	2 7	9 16	5 50 5 53	2 11	6 56	5 50 5 53	2 15	6 56	5 50 5 53	2 15				
26	F	11 51 6	5 52 5 51	3 11	10 10	5 51 5 51	3 14	7 50	5 51 5 51	3 17	7 50	5 51 5 51	3 17				
27	S	11 50 46	5 53 5 49	4 12	10 48	5 52 5 49	4 14	8 28	5 52 5 49	4 16	8 28	5 52 5 49	4 16				
28	S	11 50 27	5 54 5 47	sets	11 21	5 53 5 48	sets	9 1	5 53 5 48	sets	9 1	5 53 5 48	sets				
29	M	11 50 7	5 55 5 46	6 5	11 52	5 54 5 46	6 6	9 32	5 54 5 46	6 7	9 32	5 54 5 46	6 7				
30	T	11 49 48	5 56 5 44	6 20	morn	5 55 5 45	6 22	9 58	5 55 5 45	6 25	9 58	5 55 5 45	6 25				

REMARKABLE EVENTS IN SEPTEMBER.

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|---|--|
| 1. The pilgrims sailed from Plymouth, in the Mayflower, 1620. | 7. Battle of Borodino, 70,000 to 80,000 killed, 1812. |
| 1. Indians burnt Deerfield, 1675. | 8. Harvard College founded, 1636. |
| 4. Henry Hudson arrived at Sandy Hook, 1609. | 9. William the Conqueror died, 1087. |
| 5. Prof. J. P. Norton died, 1852. | 9. Albany first visited by Hudson, 1609. |
| 6. Plattsburgh taken by Prevost, 1814. | 10. Birth day of Mungo Park, 1771. |
| 7. Montreal surrendered to the English, 1760. | 11. Battle of Lake Champlain, 1814. |
| | 29. First Fair N. Y. State Ag. Society, at Syracuse, 1841. |

MOON'S PHASES.	D	Boston.	N. York.	Baltimore.	Pittsburgh.	Cincinnati.
		H M	H M	H M	H M	H M
FIRST QUARTER (*6th)	7	0 54 m	0 42 m	0 32 m	0 18 m	*12 0 e
FULL MOON	13	6 15 e	6 3 e	5 53 e	5 40 e	0 18 m
LAST QUARTER	20	1 23 e	1 1 e	1 1 e	0 47 e	5 22 e
NEW MOON	28	5 11 e	4 59 e	4 49 e	4 35 e	4 17 e

DAY OF MONTH.	DAY OF WEEK.	CALENDAR For Boston, N. England, New-York State, Michigan, Wisconsin and Iowa.								CALENDAR For N. York City, Philadelphia, Connecticut, Penn., New-Jersey, Ohio, Indiana, Illinois.				CALENDAR For Baltimore, Virginia, Kentucky, Missouri and California.												
		Shadow at the noon mark.			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	S	H	M	H	M	H	M	H	M	H	M	H	M										
1	W	11	49	29	6	57	5	42	6	43	0	18	5	56	5	43	6	46	10	26	5	56	5	43	6	50
2	T	11	48	10	6	58	5	40	7	7	0	46	5	57	5	41	7	12	10	54	5	57	5	41	7	17
3	F	11	48	52	6	59	5	39	7	37	1	14	5	58	5	40	7	43	11	21	5	58	5	40	7	49
4	S	11	48	34	6	1	5	37	8	15	1	41	6	0	5	38	8	22	11	51	5	59	5	38	8	29
5	S	11	48	16	6	2	5	36	9	3	2	11	6	1	5	37	9	10	morn	6	0	5	37	9	18	
6	M	11	47	59	6	3	5	34	10	1	2	45	6	2	5	35	10	8	0	25	6	1	5	35	10	15
7	T	11	47	42	6	4	5	32	11	9	3	26	6	3	5	33	11	15	1	6	6	2	5	34	11	22
8	W	11	47	25	6	5	5	31	morn	4	19	6	4	5	32	morn	1	59	6	3	5	32	morn			
9	T	11	47	9	6	6	5	29	0	24	5	38	6	5	5	30	0	29	3	18	6	4	5	31	0	34
10	F	11	46	53	6	8	5	27	1	40	7	19	6	6	5	28	1	44	4	59	6	5	5	29	1	48
11	S	11	46	38	6	9	5	26	3	0	8	46	6	7	5	27	3	2	6	26	6	6	5	28	3	4
12	S	11	46	24	6	10	5	24	4	17	9	42	6	8	5	25	4	17	7	22	6	7	5	26	4	18
13	M	11	46	9	6	11	5	22	rises	10	27	6	9	5	24	rises	8	7	6	8	5	25	rises			
14	T	11	45	56	6	12	5	21	5	41	11	7	6	10	5	22	5	45	8	47	6	9	5	23	5	48
15	W	11	45	43	6	13	5	19	6	15	11	49	6	11	5	21	6	20	9	29	6	10	5	22	6	25
16	T	11	45	30	6	14	5	17	6	55	ev.	31	6	12	5	19	7	1	10	11	6	11	5	20	7	7
17	F	11	45	18	6	15	5	15	7	45	1	12	6	13	5	17	7	52	10	52	6	12	5	19	7	59
18	S	11	45	7	6	17	5	14	8	42	1	55	6	14	5	16	8	49	11	35	6	13	5	18	8	57
19	S	11	44	56	6	18	5	12	9	45	2	40	6	15	5	14	9	52	ev.	20	6	14	5	16	9	59
20	M	11	44	46	6	19	5	11	10	53	3	27	6	16	5	13	10	58	1	7	6	15	5	15	11	4
21	T	11	44	37	6	20	5	9	11	59	4	28	6	17	5	12	morn	2	8	6	16	5	14	morn		
22	W	11	44	28	6	21	5	8	morn	5	54	6	18	5	11	0	4	3	34	6	17	5	13	0	8	
23	T	11	44	20	6	22	5	6	1	2	7	26	6	19	5	9	1	6	5	6	6	18	5	11	1	9
24	F	11	44	13	6	23	5	5	2	6	8	42	6	20	5	8	2	8	6	22	6	19	5	10	2	10
25	S	11	44	7	6	25	5	3	3	5	9	35	6	21	5	6	3	6	7	15	6	20	5	9	3	7
26	S	11	44	1	6	26	5	2	4	5	10	15	6	22	5	5	4	5	7	55	6	21	5	8	4	5
27	M	11	43	56	6	27	5	0	5	5	10	48	6	23	5	3	5	4	8	28	6	22	5	6	5	2
28	T	11	43	52	6	28	4	59	sets	11	17	6	24	5	2	sets	8	57	6	23	5	5	sets			
29	W	11	43	48	6	29	4	57	5	11	11	47	6	25	5	0	5	16	9	27	6	24	5	3	5	20
30	T	11	43	45	6	30	4	55	5	5	39	morn	6	26	4	58	5	44	9	56	6	25	5	2	5	50
31	F	11	43	43	6	32	4	54	6	16	0	16	6	28	4	58	6	26	10	25	6	26	5	1	6	29

REMARKABLE EVENTS IN OCTOBER.

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|--|---|
| 1. Robert Bakewell died, 1795. | 5. Battle of the Thames, Tecumseh killed, 1813. |
| 1. First steamboat sailed from New-York to Albany, 1807. | 6. Judge Jessé Buel died, 1839. |
| 2. Samuel Adams, of Mass., died, 1803. | 7. Battle of Moskwa—50,000 killed, 1812. |
| 3. Robert Barclay died, 1690. | 8. John Hancock died, 1793. |
| 3. Indian chief Black Hawk died, 1838. | 9. First commencement at Harvard College, 1642. |
| 4. Battle of Germantown, 1777. | |
| 5. Great Hurricane at Havana, 1768. | |

MOON'S PHASES.	D	Boston.	N. York.	Baltimore.	Pittsburgh.	Cincinnati.
		H M	H M	H M	H M	H M
FIRST QUARTER	5	0 39 e	0 27 e	0 17 e	0 3 e	11 45 m
FULL MOON.....	12	4 11 m	3 59 m	3 49 m	3 36 m	3 18 m
LAST QUARTER.....	19	5 50 m	5 38 m	5 28 m	5 15 m	4 57 m
NEW MOON	27	11 17 m	11 5 m	10 55 m	10 42 m	10 24 m

DAY OF MONTH.	DAY OF WEEK.	Shadow at the noon mark.	CALENDAR For Boston, N. England, New-York State, Michigan, Wisconsin and Iowa.				CALENDAR For N. York City, Philadelphia, Connecticut, Penn., New-Jersey, Ohio, Indiana, Illinois				CALENDAR For Baltimore, Virginia, Kentucky, Missouri and California.																
			Afternoon		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	S	H	M	H	M	H	M	H	M	H	M	H	M										
1	S		11	43	42	6	33	4	54	7	0	0	45	6	30	4	57	7	7	10	56	6	27	5	1	7	15
2	S		11	43	42	6	34	4	53	7	54	1	16	6	31	4	56	8	1	11	29	6	28	5	0	8	9
3	M		11	43	42	6	36	4	51	8	58	1	49	6	32	4	54	9	4	morn	6	29	4	59	9	11	
4	T		11	43	44	6	37	4	50	10	9	2	26	6	34	4	53	10	14	0	6	6	30	4	58	10	20
5	W		11	43	46	6	38	4	49	11	22	3	8	6	35	4	52	11	26	0	48	6	31	4	57	11	31
6	T		11	43	49	6	49	4	48	morn	4	5	6	36	4	51	morn	1	45	6	32	4	56	morn			
7	F		11	43	52	6	41	4	47	0	37	5	22	6	37	4	50	0	40	3	2	6	33	4	55	0	43
8	S		11	43	57	6	42	4	45	1	43	6	51	6	38	4	49	1	45	4	31	6	35	4	54	1	46
9	S		11	44	2	6	43	4	44	3	8	8	9	6	40	4	48	3	8	5	49	9	36	4	53	3	8
10	M		11	44	8	6	44	4	43	4	25	9	7	6	41	4	47	4	23	6	47	6	37	4	52	4	21
11	T		11	44	15	6	46	4	42	rises	9	56	6	42	4	46	rises	7	36	6	39	4	51	rises			
12	W		11	44	23	6	47	4	41	4	45	10	39	6	43	4	45	4	50	8	19	6	40	4	50	4	56
13	T		11	44	32	6	48	4	40	5	30	11	34	6	44	4	44	5	37	9	4	6	41	4	49	5	44
14	F		11	44	41	6	59	4	39	6	26	ev.	9	6	46	4	43	6	33	9	49	6	42	4	48	6	41
15	S		11	44	52	6	51	4	39	7	29	0	54	6	47	4	43	7	36	10	34	6	43	4	47	7	43
16	S		11	45	3	6	52	4	38	8	37	1	38	6	48	4	42	8	43	11	18	6	44	4	46	8	49
17	M		11	45	15	6	53	4	37	9	45	2	26	6	49	4	41	9	50	ev.	6	6	45	4	46	9	55
18	T		11	45	28	6	54	4	36	10	52	3	15	6	50	4	40	10	55	0	55	6	46	4	45	10	59
19	W		11	45	32	6	56	4	35	11	56	4	11	6	51	4	39	11	58	1	51	6	47	4	44	morn	
20	T		11	45	57	6	57	4	34	morn	5	17	6	53	4	39	morn	2	57	6	48	4	44	4	44	0	1
21	F		11	46	12	6	58	4	34	0	57	6	34	6	54	4	38	0	59	4	14	6	49	4	43	1	0
22	S		11	46	28	6	59	4	33	1	57	7	41	6	55	4	38	1	57	5	21	6	50	4	42	1	57
23	S		11	46	46	7	0	4	32	2	56	8	41	6	56	4	37	2	55	6	21	6	51	4	42	2	54
24	M		11	47	3	7	2	4	32	3	58	9	30	6	57	4	36	3	55	7	10	6	52	4	41	3	53
25	T		11	47	22	7	3	4	31	5	2	10	7	6	58	4	36	4	58	7	47	6	53	4	41	4	55
26	W		11	47	42	7	4	4	31	6	6	10	46	6	59	4	35	6	1	8	26	6	54	4	41	5	57
27	T		11	48	2	7	5	4	30	sets	11	18	7	0	4	35	sets	8	58	6	55	4	41	sets			
28	F		11	48	22	7	6	4	30	4	56	11	52	7	2	4	35	5	3	9	33	6	56	4	40	5	11
29	S		11	48	44	7	7	4	30	5	49	morn	7	3	4	34	5	56	10	6	6	57	4	40	6	4	
30	S		11	49	6	7	8	4	29	6	51	0	26	7	4	4	34	6	58	10	42	6	58	4	40	7	5

REMARKABLE EVENTS IN NOVEMBER.

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| 1. Earthquake at Lisbon, 50,000 perished, 1755. | 8. John Milton died, 1674. |
| 2. Washington's Farewell Address to his army, 1783. | 8. Madame Roland guillotined, 1793. |
| 3. St. Johns surrendered to Americans, 1775. | 10. Birth day of Mahomet, 570. |
| 5. Columbus arrived at Cadiz in fetters, 1500. | 11. T. G. Fessenden died, 1837. |
| 7. Pensacola taken by Gen. Jackson, 1814. | 12. Montreal surrendered to Americans, 1775. |
| | 13. Curran died, 1817. |
| | 14. Great earthquake in England, 1318. |
| | 17. Trial of Sir Walter Raleigh for treason, 1604. |

MOON'S PHASES.		Boston.	N York.	Baltimore.	Pittsburgh	Cincinnati
	D	H M	H M	H M	H M	H M
FIRST QUARTER.....	4	10 42 e	10 31 e	10 20 e	10 7 e	9 49 e
FULL MOON	11	3 29 e	3 18 e	3 7 e	2 54 e	2 36 e
LAST QUARTER.....	19	2 0 m	1 48 m	1 38 m	1 24 m	1 6 m
NEW MOON	27	4 1 m	3 49 m	3 39 m	3 26 m	3 8 m

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

REMARKABLE EVENTS IN DECEMBER.

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| 2. Battle of Austerlitz, 1805. | 8. Richard Baxter died, 1691. |
| 3. Battle of Hohenlinden, 1800. | 10. Luther burnt the Papal bull, 1520. |
| 4. Washington took leave of the army, 1783. | 12. Colley Cibber died, 1757. |
| 6. Diet of Worms, 1540. | 14. British overrun New-Jersey, 1776. |
| 7. Algernon Sidney beheaded, 1683. | 15. Izaak Walton died, 1683. |
| 7. Marshal Ney shot, 1815. | 16. Coldest day on record, 1835. |
| | 17. Goths captured Rome, 546. |

THE
ILLUSTRATED ANNUAL REGISTER
OF
RURAL AFFAIRS.

COUNTRY DWELLINGS.



O part of rural economy is more important and requires more skill, than the erection of dwellings in the country. It is a low estimate, that the farm houses of the Union have cost five hundred millions of dollars. Of this amount, at least one hundred million has been entirely wasted by bad arrangement and bad calculation. In addition to this waste, there is a large annual loss by the inconvenient position of rooms, greatly increasing the labors of the family. The evil is owing to the national fault of Americans—hastiness and imperfection, and a superficial character in all they undertake. Every man thinks he can plan his own house with only a few hours examination and contrivance. On the contrary, years of study are required to understand properly the disposition of every part. A house which consists of ten apartments, large and small, may be arranged with these apartments in an almost infinite number of variations—or, according to arithmeticians, in more than three million different ways. A whole lifetime may therefore be devoted in studying the best construction among such a multitude of forms.

With so endless a subject, and so little time usually given, it is no wonder that most houses are badly arranged. We once stopped to see an acquaintance who had just occupied a new dwelling of his own planning—or, more properly speaking, it had no plan; for, among other queer specimens of convenience, it became necessary for the guests, in passing from the parlor to the dining-room, to pass out through the front door, and into the building again at a side door. In another instance, a neighbor had so arranged his rooms that the parlor was entered through the kitchen. The arrangements for performing household work in these two dwellings were equally convenient. They were well described by a slight variation in the words of Pope—"A mighty maze, and *all* without a plan."

Most of the designs furnished by amateurs for the agricultural papers, are in a greater or less degree marked by various defects. Their authors, observing their great superiority to the common specimens, perhaps rate their intrinsic value much too high. A book is greatly needed, devoted exclusively to the subject of the *internal convenience* of dwellings, with a full set of *rules*, properly explained, for the arrangement of all the parts. Some of these rules would be so important as to remain fixed and unal-

terable, in all practicable cases; others might be modified, or discarded, with the force of circumstances. We do not know the architect fully qualified for this task. If he is living, he is a *rara avis*. Furnishing designs for neat and tasteful *exteriors* is not so difficult, although we have a profusion of specimens of bad taste, even here, all through the country. A great improvement has been effected through the influence of the several works on rural architecture published of late years, although their teachings have rather verged on the fantastic than the neat, tasteful and simple; and those who have been very desirous to have *fashionable houses*, have carried these peculiarities to such an extreme as to result in the conceited and outlandish.

Another evil, which is becoming common, is *expensive* building. In riding lately through the suburbs of one of our cities, a resident informed us that a large portion of the prominent men of the place had failed, or become embarrassed, through the desire to excel their neighbors in splendid residences. We are not sure that our writers on this subject are not partly at fault in this particular. We have just looked through *four* American works, published within a few years—works whose leading characteristic ought to be republican simplicity—and find in one, (Downing's,) many country houses varying in cost from *seven to ten and ten to fourteen thousand dollars*, and another, (the most expensive,) with the cost not given. In the "Homes for THE PEOPLE," (Wheeler's,) there are a considerable number ranging at nearly all sums from *ten to thirty thousand dollars*; while the *average* of all, including even the log dwellings, is *six thousand*. Another recommends a *four-story ten thousand dollar cottage* (!) for its cheapness; and the fourth work, less faulty than the others, has several designs for farm houses costing from four to eight thousand.*

"But if the wealthy are able to build such houses," we are told, "let them build accordingly." By no means, we would say—for every man, as a patriot and a christian, has a duty to perform to the community, during his rapid passage through the world; and if he sets an example of extravagance for his poorer neighbors, which they, in their desire to be "as good as their betters," are led improperly to follow, he is effecting a positive and serious evil. Many of the hard struggles and heavy debts of young heads of families, arise from the wish to be equal with their friends in their fine rooms, costly carpets, and silver furniture. We question if any man, however rich, has a right to build a ten thousand dollar dwelling, with these influences in view, when comfortable simplicity would be so much better than showy luxury; and the expenditure of means in the purchase of books and scientific apparatus, in the dissemination of knowledge, and in promoting the substantial welfare of the world at large, would be better than the indulgence of the feeling that is expressed in the language, "Soul, thou hast much goods laid up, and a very fine house indeed to keep them in—enjoy it, and let others admire."

A disposition to copy extravagance runs through all ranks. Hence the

* In the county of Seneca, N. Y., which may be taken as a fair example of the best and wealthiest farming portions of the country, there are *fifteen times* as many farms under two hundred acres as over that quantity; more between fifty and a hundred acres than of any other dimensions; and nearly three times as many under a hundred as over a hundred acres. There are only *twelve* farms, out of more than twenty-three hundred, that contain over four hundred acres. Hence, we may safely conclude that the great mass of the landholding community, need very moderate plans for the erection of their dwellings.

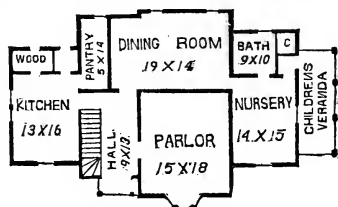
great number of examples where farmers have built large houses and run themselves in debt, so that they could neither conduct their farming operations to advantage, nor make improvements by planting. There have been multitudes of instances where houses costing three thousand dollars have used up every available resource, when a cheaper erection of two thousand would have supplied as well every *real* want, and left a surplus of one thousand, a fifth part of which would have embellished the place by planting, furnished a profusion of comforts in the form of fine fruits, and in the end rendered the home not only more comfortable in every respect, but really of more moneyed value than the bleak three thousand mansion, with its broken fences and bare walls.

Our object is to contribute,—even if it be in a small degree,—to the correction of these evils; to furnish cheap and tasteful designs, obviating any necessity for extravagance; and to encourage those of large means, instead of throwing their money away on luxuries, to show that although they *can* build showy houses, they prefer something that shall leave the world better than they found it. We should delight to set our eyes upon the man, who, with a hundred thousand dollars or more at command, would be willing to live in a dwelling worth two thousand, that he might have ampler means for the benefit of his race.

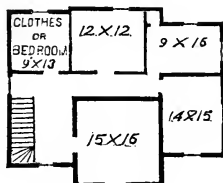
GOTHIC COUNTRY HOUSE.

In order to avoid the fault of the common gothic cottages, seen in all parts of the country, namely a profusion of flimsy ornamental carvings, we present the accompanying view (page 168) of a simple, well-proportioned, and sufficiently tasteful country residence, which may be afforded by most farmers in comfortable circumstances. It need not cost, if built of stone or brick, more than twenty-five hundred dollars; and with wood, eighteen to twenty hundred, might be sufficient for its completion.

Its exterior needs very little description. There is little or nothing about it which is added purely for ornament, and this materially lessens the expense of erection. The steepness of the roofs prevents danger of leakage at the receding angles, while this quality is not too glaring to detract from its neatness.

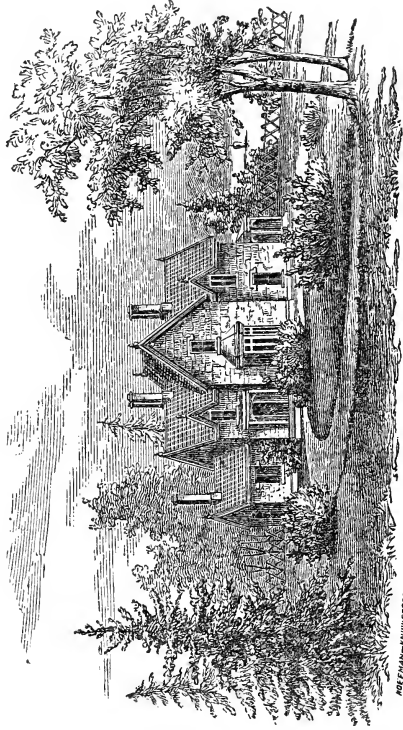


PRINCIPAL FLOOR.



SECOND FLOOR.

The plans of the interior nearly explain themselves. From the hall, or entrance, ready access is had to the parlor, dining-room, and kitchen, while the latter is rendered less conspicuous by the intervening stairs.



GOTHIC COUNTRY HOUSE.

The dining-room is longer and narrower than common—a more convenient form for its usual purpose; it is, of course, intended in this moderate plan to serve as a family or ordinary living-room. The bath room may be used, if desired, as a children's bed-room. It will be observed that special attention is given to the comfort of children, by providing them with a pleasant veranda, instead of attaching it to the parlor, a room far less frequently used, and used too by those who can well forego a little comfort for a most interesting class of the human race, quite as much deserving, but too often thrust aside to make room for full-grown loungers.

A small wood-room is appended to the kitchen—a detached wood-house having been found best, being less noisy, and supplying less dirt and litter. The wood-room is occasionally filled from it. The chamber over the kitchen may be finished if needed, for the hired man or domestic, and reached by a small separate flight of stairs.

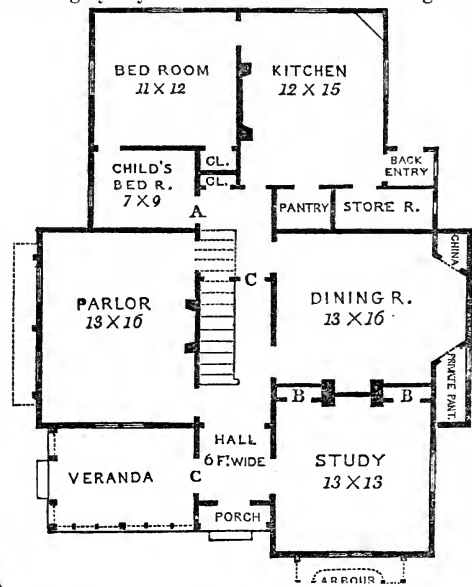
COTTAGE GOTHIC FARM HOUSE.

This was originally furnished in the *Horticulturist*, as a design for the cheap residence of a country clergyman; but it may be adopted as a farm dwelling by any one who wishes to obtain a large amount of accommoda-

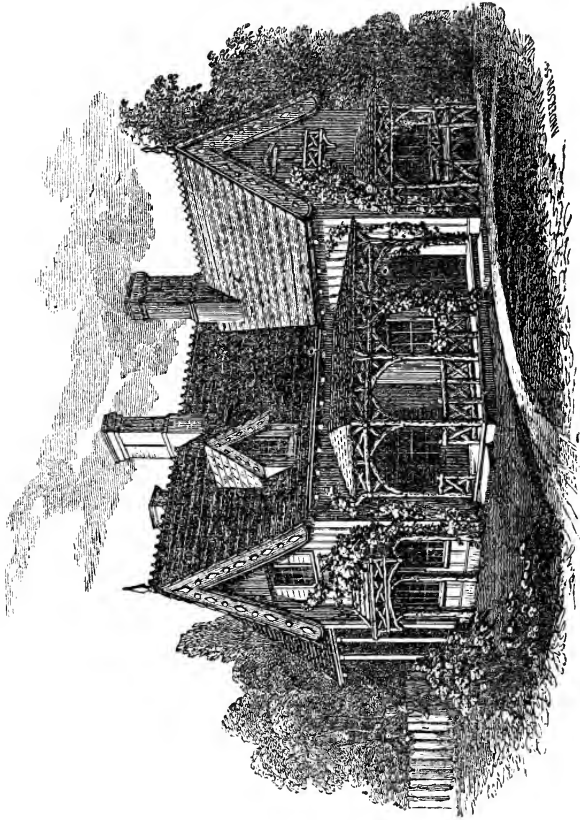
tion with moderate means, and whose intellectual habits require a *study*, or separate apartment, for books, papers, specimens in natural history, &c.

The cottage Gothic is given in the view—as adapted to rural scenery, and giving more room for its cost than any other style. The rustic veranda and trellis, for the support of climbers, and for giving the whole an interesting rural appearance, are made of cedar poles with the bark on, and are thus erected at a very trifling expense, and are more appropriate than any elaborate carpentry.

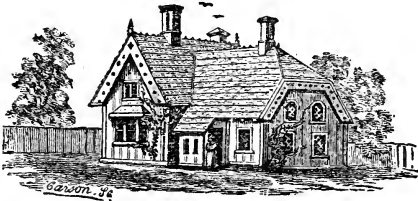
The plan needs but little explanation. A



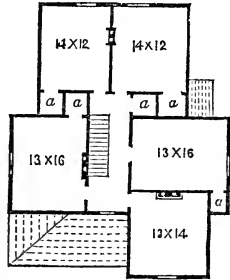
door at D, (printed by mistake C in the cut,) opens on the veranda, and



A COTTAGE GOTHIC FARM-HOUSE.



REAR VIEW.



CHAMBER FLOOR.

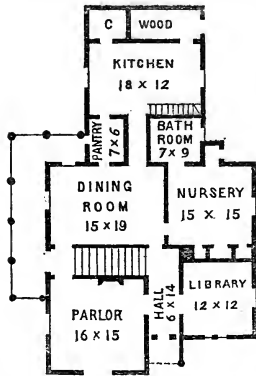
another at C shuts off the back entry from the front hall. The study is fitted with book cases at B B; the living-room has convenient closets, so placed as to form a kind of bay-window effect, quite pleasing in appearance. The door between the entry and bed-room is glazed, to admit light to the latter. If desired, the closets between the entry and bed-room may give place to a door.

The second-floor plan (drawn on a smaller scale) shows five good bedrooms, with a closet to each. A sketch of the rear is given, showing the back porch and arrangement of the kitchen wing.

The whole may be constructed of wood,—where materials and labor are not very costly,—in a simple manner—the inside walls to be whitewashed or neatly papered—the first story 9 to 10 feet high only,—for about \$1,200.

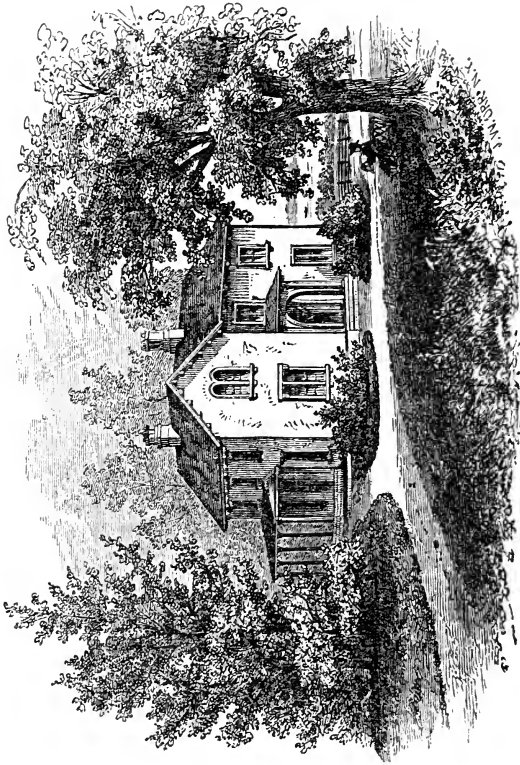
ITALIAN COUNTRY HOUSE.

The design here given represents a country residence which contains nearly all the essential comforts for a family residing on a farm, at a less cost than a large portion of the heavy built pseudo-Grecian farm houses. The exterior indicates entire simplicity, with a sufficient degree of architectural character, and the interior is a combination of convenience and compactness.

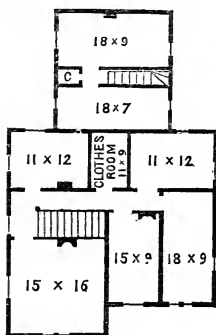


FIRST FLOOR.

From the entrance hall direct access is obtained to the parlor, library, and dining-room, and, if desired, the nursery may be entered from the same quarter, by placing a door at its inner extremity. The stairs between the parlor and dining-room, leave a small entry directly under the landing, through which the veranda is reached from these two apartments. The pantry, being placed between the kitchen and dining-room, affords the most ready access from both; and the bath-room between the nursery and kitchen admits the easy heating of water for its use, by the kitchen fire. A closet (marked C) is provided for the coarser utensils; and a small wood-room adjoining the



ITALIAN COUNTRY HOUSE



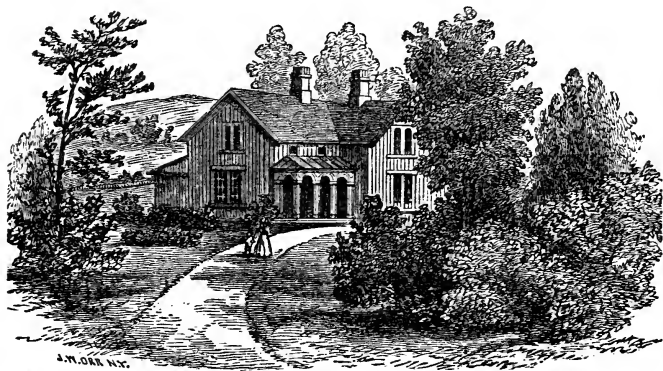
SECOND FLOOR.

neys horizontally aside
substantial manner, will

kitchen back door, is easily filled from without for convenient kitchen use—the wood-house in which it is stored for a year's seasoning being a coarser detached building. The cellar is entered near the kitchen passage, beneath the stairs to the kitchen chamber. It may be likewise entered from the dining-room by a flight under the main or hall stairs, if the inconvenience of litter in this direction may be avoided.

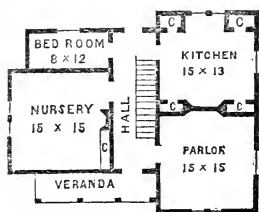
The cooking-stove may be placed near the back or further side, the pipe passing into the flue in the chamber above. The dining-room, (also used as the family room,) is similarly warmed by a stove beneath the chimney on the second floor. This chimney and the one in the parlor are brought together and united in the small garret by being built in *an arch*, which is the most easy and secure way of drawing chim-
The cost of this dwelling, well built, in a plain,

not vary much from two thousand dollars.



ITALIAN FARM COTTAGE.

For a smaller sized country or farm house, combining something of the characteristics of the tasteful cottage with a convenient home arrangement, we furnish this design. With the exception, perhaps, of the arched veranda, there is no exterior ornament whatever. It will be observed that the roof is steeper than in Italian houses generally, giving more room in the chamber apartments, and preventing danger of leakage. This steepness can be only adopted in one-and-a-half story houses, as it would impart too heavy an appearance to any other.

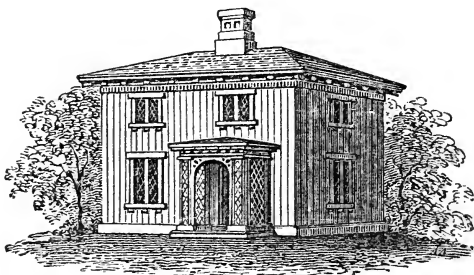


There are three principal rooms below, besides a small bed-room, and there may be four above, one each over the parlor and kitchen, and two over the nursery. This plan possesses some important advantages, among which we may mention the convenience of a hall extending through the house, without occupying much space, from which every room on the ground floor is entered. The chimneys being near the centre, but little heat is lost through the outside walls.

The kitchen has four closets, (marked *c*,) and the nursery one.

In such cases as do not require a *nursery*, the parlor may be changed to a dining and living room, and the present nursery transformed into a neat and comfortable parlor.

The cost of this house will vary, with the price of materials, from \$1,200 to \$1,500. With larger rooms and a better finish, its cost may run up to \$2,800.



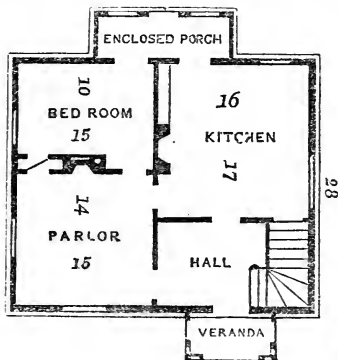
SQUARE FARM COTTAGE.

This design furnishes nearly the accommodation of the preceding, but being simpler in form and more compact in arrangement, it may be built at considerably less cost. It was originally given in Downing's *Horticulturist*. It is intended to be built of wood, the weather boarding being vertical, a mode now becoming well known, and the rafters projecting eighteen inches from brackets of the plainest description, and yet give a better appearance to the roof than the usual common-place character. The trellis-work porch, to be covered with climbing plants, adds much to the ornamental appearance.

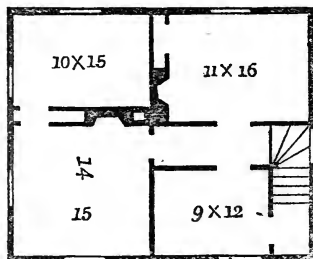
The accompanying plans render any particular description of the interior unnecessary.

The flues of the two chimneys are drawn together into one in the garret.

Downing gives the estimated cost of erecting this dwelling, (at Newburgh,) at \$760—supposing it to have a cellar under the whole and to be filled in with brick; the lower rooms being ten feet high, and the upper ones nine feet. Everything would, of course, have to be made of the



FIRST FLOOR.



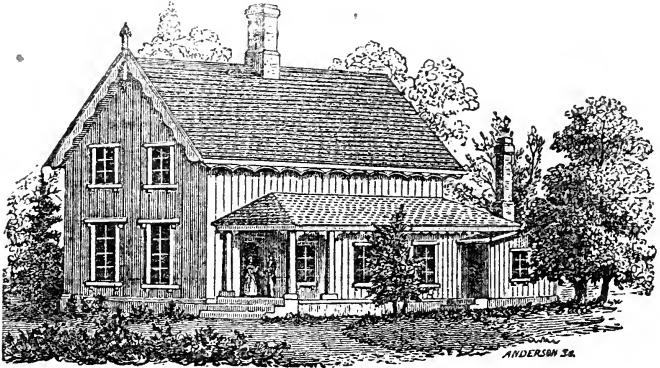
CHAMBER FLOOR.

cheapest character; but if made so that the cost should extend to one thousand, it would probably prove more satisfactory to most who might adopt the plan. Its square and simple form contributes very much to economy in erection.

SUBSTANTIAL FARM RESIDENCE.

The accompanying plan was furnished by a correspondent, to which we have added a perspective view in accordance with his design. With one or two defects, this combines a large number of conveniences. A principal object is to afford a separate entrance into every principal room without the too common fault of passing through some other room to reach it. The house is 24 by 36 feet, besides the additional lower portion, which is 13 feet wide at the side and 16 feet at the end. The parlor and dining-room are connected by sliding doors. The position of the other rooms is easily seen in the plans. The following is our correspondent's description:—

A front and back hall, with stairs in back hall for access to chambers, and underneath to cellar, answering as private stairs, or for all purposes for a family, being much more economical than open stairs, and which are so placed as to accommodate all parts of the house. From this hall is a door opening into a closet at the end of the hall, and also a door (with sash to light back hall,) opening into the kitchen. Connected with the kitchen is a pantry, 6 by 9 feet; a closet, for kettles, &c., 6 by 4 feet, and an entry, 7 by 8 feet, in which is a sink, with a pump to raise water from the cistern underneath. The sink should have a good drain, to carry off the waste water. On the right, in the front hall, a door enters a sitting-room or library, 12 by 13 feet, from which a door enters a bed-room, 12 by 12 feet, with two closets opening into it. A door may lead from the bed-room into the back hall or kitchen, if desired. All the rooms in the lean-to part, are

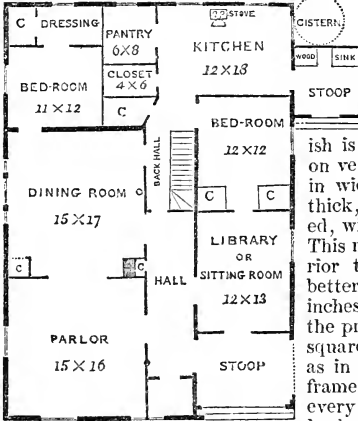


designed to be 9 feet in height. Up stairs are two bed-rooms, 8 by 13 feet each, and a chamber, 16 by 16 feet, and 9 feet in height, with any reasonable number of closets.

The cellar is under the main part of the building, which gives as much cellar room as is usually wanted; if more is desired, it can be had by excavating under the lean-to part.

The chimneys are ornamental, which, with the verge boards under the eaves, gives a finish to the building in good keeping with the idea of a cottage or country house.

The outside finish is of inch boards, matched and put on vertically, with battens four inches in width, and not less than one inch thick, rough or plain, painted and sanded, with a coat of paint over the sand. This makes a handsome finish, far superior to clap-boards, and looks much better. In framing, use timber 5 by 10 inches for posts and girth beams, and for the principal floor, timber eight inches square; instead of framing in scantling as in houses covered with clap-boards, frame scantling three and four inches every three feet upward from the sill, horizontally—the four inch side next the outside covering. On these nail



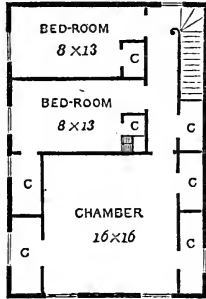
PRINCIPAL FLOOR.

boards vertically inside, to lath and plaster upon; then furr out with inch boards over the plaster, and put on another coat of lath and plaster—making a double coat of plastering all around the outside or exposed part of the building. This makes a house much warmer, and the extra

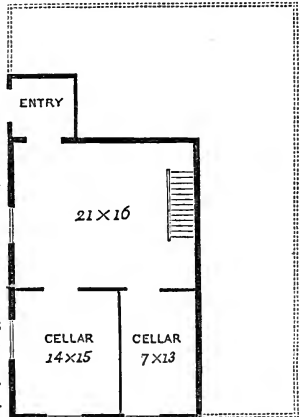
expense is soon saved in fuel. The timbers each side of the windows, are six by five inches. By using such timber, the projections in the corner of the room as in case of square timber being used, is avoided, and is sufficiently strong. By nailing cleats to the joists, and cutting in short pieces of boards between them, and putting upon this one or one-and-a-half inches of mortar, before laying the

floors in the principal story, it will tend to keep out the dampness from the cellar and add to the warmth of the house.

—The principal defect in this plan is, the *half-window* in the extreme corner of the parlor.—We should prefer giving this



CHAMBERS.



GROUND PLAN.

room the full benefit of both windows, and lighting the small apartment at the end of the hall, if necessary, from under the veranda. The pantry should be easily accessible from both kitchen and dining-room, which may be easily accomplished by a slight alteration of kitchen closets.

We are not furnished with the cost of this building, but should estimate it at from eighteen to twenty-two hundred dollars, varying with cost of materials, finish, &c.

GENERAL RULES FOR BUILDING.

The following, which are a few of the rules to be observed in building houses, may afford some useful suggestions to those about to engage in such undertakings.

1. Always compare the *cost* with the *means*, before deciding on the plan. It is much better to build within means, than to have a large, fine house, hard to keep in order, and encumbering the owner with a heavy and annoying debt. A great error with many is an attempt to build *finely*. Attend to *real* wants and substantial conveniences, and avoid imaginary and manufactured desires.

2. Study a convenient location rather than a showy one: a house on a lofty hill may make a fine appearance, but the annoyance of ascending to it will become greater on each successive day.

3. Build of such good materials as are near at hand. An interesting index is thus afforded to the resources and materials of that particular region, with the addition of great economy over the use of such as are "far brought and dear bought."

4. Prefer lasting to perishable materials, even if more costly. A small well built erection, is better than a large decaying shell.

5. Discard all gingerbread-work, and adopt a plain, neat, and tasteful appearance in every part. Far more true taste is evinced by proper forms and just proportions than by any amount of tinsel and peacock decorations. A marble statue bedizened with feathers and ribbons, would not be a very pleasing object.

6. Where convenient or practicable, let the plan be so devised that additions may be subsequently made, without distorting the whole.

7. In all *country* houses, from the cottage to the palace, let the kitchen (a most important apartment,) always be on a level with the main floor. It requires more force to raise a hundred pounds ten feet upwards, whether it be the human frame or an assortment of eatables, than the same weight one hundred feet on a level. To do it fifty times a day is a serious task. If the mistress superintends her own kitchen, it should be of easy access.

8. Every entrance from without should open into some entry, lobby, or hall, to prevent the direct ingress of cold air into rooms, and to secure sufficient privacy.

9. The first floor of any house, however small, should be at least one foot above ground, to guard against dampness.

10. Flat roofs should be adopted only with *metallic* covering. Shingles need a steeper inclination to prevent the accumulation of snow, leakage, and decay—more so than is frequently adopted. A steep roof is, additionally, cheaper, by admitting the use of a less perfect material for an equally perfect roof, and giving more garret room.

11. More attention should be given to the convenient arrangement and disposition of rooms in constant daily use, than those employed but a few times in the course of a year. Hence, the kitchen and living-room should receive special attention.

12. Every cellar should have, besides the stairs within, an outside entrance, for the passage of barrels and other heavy articles.

13. The coolest rooms in summer, and the warmest in winter, are those remote from the direction of the prevailing winds and from the afternoon sun. Hence parlors, nurseries, and other apartments where personal comfort is important, should be placed on this side of the house where practicable.

14. The pantry, and more especially the china closet, should be between the kitchen and dining-room, for easy access from both; and the bathroom between the kitchen and nursery, for convenience to warm water. The kitchen should have opposite windows, for full light, and for securing a current of air in summer.

15. Brick and stone houses should always be lathed and plastered inside, so as to leave a confined portion of air in the wall, to prevent dampness.

16. *Unburnt* brick should not be used for "filling-in" wooden houses, as rats are frequently known to cut through them.

17. To prevent rats from burrowing into cellars, either make a good water-lime floor, or else build the wall on a close-jointed flagging, laid some inches below the bottom of the cellar, and projecting three or four inches beyond the wall. The rat burrows down next to the wall, reaches the flagging, and cannot pass through it, never in any case working back to the edge.

18. In erecting brick walls place strips of lath *between* the courses, and not thick blocks *in* the courses, for nailing to. The former will bind the walls together, and only become firmer by the entrance of the wedge-form nails; the latter are very liable to become loosened.

19. The two corner furring pieces of rooms should be very securely nailed together, to prevent the plastering from cracking at the corners.

20. Always reserve ten per cent. of cost for improvement and planting. Remember that a hundred dollars in trees and shrubbery produce a greater ornamental and pleasing effect than a thousand in architecture.

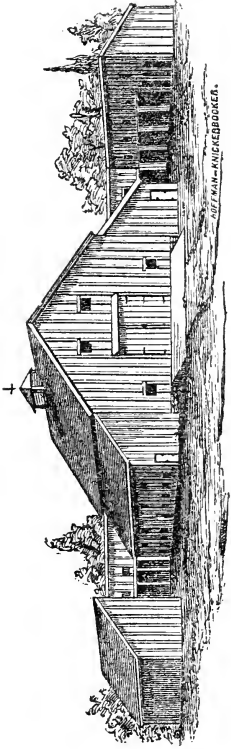
21. Lastly, *never build in a hurry*; mature plans thoroughly; procure the best materials, and have joiner-work done at the cheaper season of winter, and the erection will be completed in the most perfect manner, and with the greatest practicable degree of economy.

LEWIS F. ALLEN'S BARN.

The frequent inquiries made of us for plans of barns and farm buildings, induce us to give a condensed description of those recently erected by LEWIS F. ALLEN, on his Grand Island farm, a full account of which is published in the last volume of the Transactions of the New-York State Agricultural Society. This plan has many conveniences, and, although very large, possesses the important advantage of admitting almost any required reduction in size. The plan and views, which in the original occupy four full pages, have been diminished, so as to give all that is essential in the accompanying figures—the view occupying less space by being seen more nearly from the front. By lettering the plan, some pages of description are obviated.

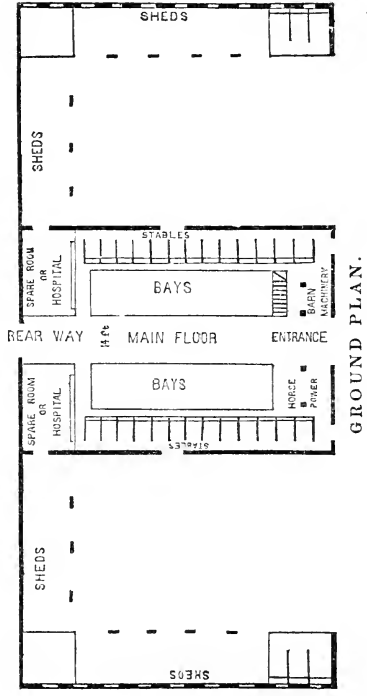
The body of the main barn is 100 feet long by 50 feet wide, the posts 18 feet high above the sill, making 9 bents. The beams are 14 feet above the sills, which is the height of the inner posts. The position of the floor and bays is readily understood from the plan. The floor, for a *grain* barn is 14 feet wide, but may be contracted to 12 feet for one exclusively for hay. The area in front of the bays is occupied with a stationary horse-power and with machinery for various farm operations, such as threshing, shelling corn, cutting straw, crushing grain, &c., all of which is driven by bands from drums on the horizontal shaft overhead, which runs across the floor from the horse-power on the other side; this shaft being driven by a cog-wheel on the perpendicular shaft round which the horses travel.

We would suggest an addition to the machinery, not mentioned in the description. In a barn like this, holding a hundred tons of hay, the labor of pitching up to the upper part of the bays is formidable. We would therefore propose the use of an *elevator*, like that of the best modern threshing machines, to be worked by the two horses removed from the loaded wagon of hay to the horse power, during the pitching off of the load. This would greatly lessen the labor and quicken the operation of unloading. The same elevator would be used in carrying threshed straw from the machine to the bays. The simplest and best elevator for this purpose is made of a light, inclined board platform, four feet wide, on each side of which a rope or endless chain runs, connected by cross-bars, a foot or two apart, which slide over the upper surface of this platform, and sweep the hay upward as fast as pitched upon it.



HUFFMAN-KNIEBROCKER.

LEWIS F. ALLEN'S BARN.



A passage four feet wide extends between the bays and the stables, which occupy the two wings. This extends up to the top of the bays, down which the hay is thrown for feeding, which renders this work as easy and convenient as possible.

The floor of the main barn is three feet higher than that of the stables. This will allow a cellar under it, if desired—or a deeper extension of the bays—and it allows storage lofts over the cattle, with sufficient slope of roof. A short flight of steps at the ends of each passage, admits easy access from the level of the barn floor.

The line of mangers is two feet wide. A manure window is placed at every twelve feet. The stalls are double; that is, for two animals each, which are held to their places by a rope and chain, attached to a staple and ring at each corner of the stall. This mode is preferred to securing by stanchions. A pole or scantling, placed over their heads, prevents them from climbing with their feet into the mangers, which they are otherwise very apt to do.

The sheds, which extend on the three sides of the barn, and touch it at the rear end, are on a level with the stables. An *inclined plane*, from the main floor through the middle of the back shed, forms a rear egress for wagons and carts, descending three feet from the floor. The two rooms, one on each side of this rear passage, 16 by 34 feet, may be used for housing sick animals, cows about to calve, or any other purpose required. The stables at the front ends of the sheds are convenient for teams of horses or oxen, or they may be fitted for wagon houses, tool houses, or other purposes. The rooms, 16 feet square, at the inner corners of the sheds, may be used for weak ewes, lambs, or for a bull stable.

Racks or mangers may be fitted up in the open sheds for feeding sheep or young cattle, and yards may be built adjoining, on the rear, six or eight in number, into which they may run and be kept separate. Barred partitions may separate the different flocks. Bars may also enclose the opening in front, or they may, if required, be boarded up tight. Step ladders are placed at convenient intervals, for ascending the shed lofts.

A granary over the machine room is entered by a flight of stairs. Poles extending from bay to bay, over the floor, will admit the storage of much additional hay or grain. As straw cannot be well kept when exposed to the weather, and is at the same time becoming more valuable as its uses are better understood, we would suggest that the space on these cross poles be reserved for its deposit from the elevator from threshing grain, or until space is made for it in one of the bays.

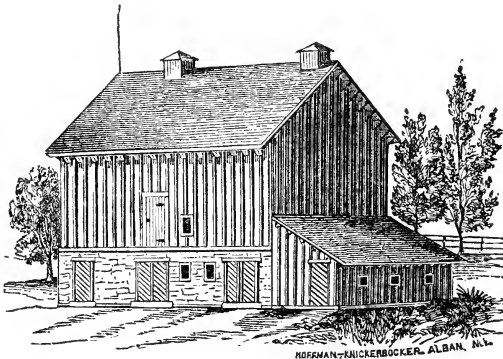
A one-sided roof is given to the sheds, (instead of a double-sided,) to throw all the water on the *outside*, in order to keep the interior of the yards dry. Eave-troughs take the water from the roofs to cisterns. The cisterns, if connected by an underground pipe, may be all drawn from by a single pump if necessary. The quantity of water thus afforded appears to be much under-estimated in the article accompanying the description, where it is stated to be *five hogsheads* per annum from a roof of ten feet square. Now, instead of this small amount, no less than *thirty-six* hogsheads are yielded by three feet of water, the average annual fall in the Northern and Middle States—as a computation will at once show. The whole roof of the buildings, of the size here given, has over 12,000 square feet of surface, if we estimate correctly; this would give, as a daily average, twelve hogsheads of water, or twenty-four barrels—enough to water

nearly a hundred head of cattle the year through. But if the cistern water were only used during the drouth of summer, there would be enough for three times this number. But as the whole yearly amount would be over four thousand hogsheads, the cisterns should hold at least a fifth of this quantity, if used constantly, or more than half this amount if used only in summer. Very few men would make them one quarter the required capacity. This is a thing singularly overlooked.

An important advantage of placing the stables in the wings of the barn is, that it obviates the common objection that liquid manure from the stalls rots the sills—the stable sills being comparatively easily replaced if not under the main barn.

This barn is the re-construction of an old one, the convenience of which has been proved by twenty years' use by the owner, who is so well known as one of the best and most enlightened of distinguished American farmers.

We wish to add, before concluding, a single remark on the manufacture of composts, alluded to in the description of the barn. Drawing out manure frequently, spreading and plowing in at once, are recommended in preference to composting. But as this is impracticable all times of year, we have found a better way, to draw out often, and, instead of applying at once, to compost it *in the field* where wanted, by alternate layers with fence-corner turf, plowed sods, &c. These retain all the volatile parts, and all the advantages of rotted manure are secured, with no extra *drawing of heavy materials*

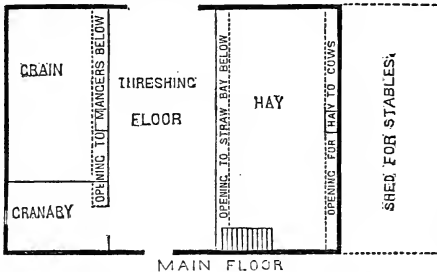


SIDE-HILL OR CELLAR BARN.

The object of this plan is to furnish a good barn for a farm of moderate size, or of about seventy-five to one hundred acres, occupied with mixed husbandry, but where raising animals, dairying and grazing have a full share. This barn will accommodate five horses, seven cows, and will afford shelter for a large quantity of hay and grain in the straw, and has a

bay for straw, and a cellar for roots below. A carriage-house, tool-room, &c., are supposed to be nearer the dwelling, and small sheep barns are built separately, consisting simply of a twenty-feet-square box and roof for hay, with a low shed at one side, and a space beneath it for sheltering the sheep.

The main portion of this barn is about 30 by 40 feet. The plan showing the main floor nearly explains itself. On one side of the threshing floor is

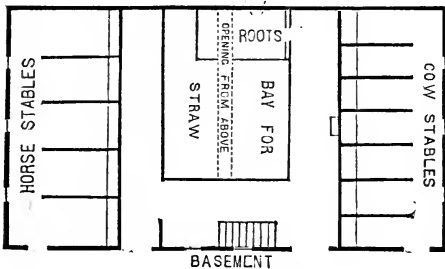


a bay for unthreshed grain, with a granary adjoining, and on the other is a large bay for hay. Timbers or poles across from beam to beam overhead, will admit the storage of a large quantity of corn fodder, hay or grain.— Beneath the grain bay, (as the basement plan exhibits,)

is the horse stable, the mangers of which are filled and the grain troughs supplied through an opening from the main or threshing floor. On the other side of the floor is a similar opening, for throwing down the threshed straw into the straw bay beneath. On the opposite side of the hay bay is an opening for throwing hay down to the passage in front of the cow-stables. This opening is made by means of a row of studs or poles, placed perpendicularly on that side, three feet from the end of the barn, and the hay, when deposited, is only built out to this line of studs. By means of a flight of stairs from the floor above, easy access may be had from above to the passages in front of the stables. The space in front of the horse-

stables, and the doors opening to it outside are sufficiently wide to admit a wagon backed in far enough to be easily loaded with grain through the door above from the granary.

Between the straw bay and the cellar wall, towards the embanked side, is the cellar for roots. This is easily filled by



dumping the cart containing them into the shute (shown by dotted lines in the basement plan) placed in the cellar window. They are effectually protected from freezing by being thus placed between the straw on two sides, and the embanked wall on the third, while double walls and double doors, next the cow-stable passage, amply protect them on the fourth. A coating of two or three feet of straw thrown on the top, completely

shuts out the frost from above. The passage next the cow-stables is wide enough to contain the root slicer, straw cutter, &c. The passage at the end of the straw bay may be made wide enough, if desired, to contain the coarser tools of the farm.

Ventilators pass perpendicularly upwards from the horse and cow-stables to the peak of the barn, and are shown in the exterior view.

An advantage results from making the cow-stables in the form of a shed or "lean-to," as it may be built quite separate from the rest of the building; and when the sills decay, which is apt to take place from the large quantities of liquid manure, they are easily renewed, without disturbing the principal frame

SIDE-HILL BARN IN THE USUAL FORM

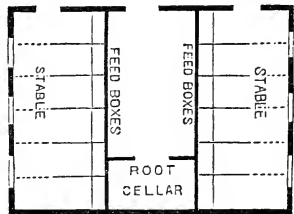
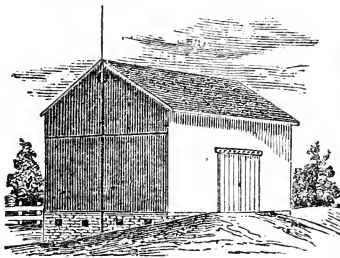


FIG. 1.

Fig. 1 represents the ground plan, 44 feet long and 32 feet wide, 10 feet high—one stable on each end, 14 feet wide, which will give a feed manger 3 feet wide, and a good wide passage in the rear of the animals also. Divided into 6 stalls, $5\frac{1}{2}$ feet wide, each will stable 12 animals, which are to be fed from a space corresponding in width with the manger, on a level with the floor, as will be seen in the floor plan, Fig. 2. This space for feeding from the floor, is made by leaving a space 3 feet wide at the bottom of the bay on a level with the floor, and inclines towards the floor to a bay beam 6 feet high from the floor, so that the space abstracted from the

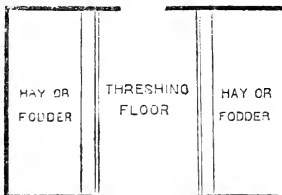


FIG. 2.

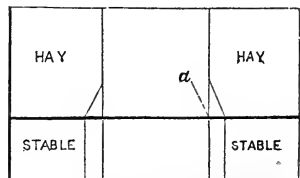


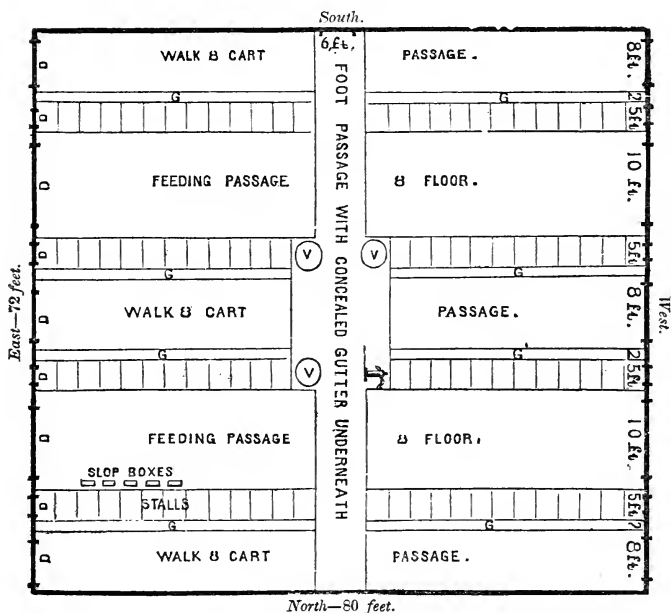
FIG. 3.

bays is but little. This space can be closed or opened at pleasure, by having doors to swing down to the floor when open, or to shut towards the mow when required to be shut, as will be seen in Fig. 3. The dotted line

at *a*, is the side of the bay, inclined, to show the manner of feeding from the floor, and then it can be closed at pleasure. It should be fastened by hinges about two feet high from the floor.

Having a barn nearly on the same plan, I thought it might please some of your numerous readers. B. D. C.

LARGE BASEMENT DAIRY BARN.



A correspondent at Keokuk, Iowa, has furnished us with the plan of a large dairy stable, affording "elegant entertainment" for 92 head of cattle, and is substantially the plan adopted in the best dairy establishments in the Western Reserve, Ohio. The following is our correspondent's description:—

The ground should descend to the south or east, if possible. The entire lower floor, as will be seen, is devoted to stables and fixtures for convenient attendance upon the cows, and consists mainly of two double rows of stalls or stanchions for securing the cows, and two feeding passages and three walks or cart-ways, to facilitate the removal of the manure; also gutters are placed immediately behind the platforms on which the cows stand. To facilitate communication between the different parts of the establishment, a transverse passage is shown, 6 feet in width, and extending the

entire width of the building. Beneath the floor of this passage should be placed an ample gutter for carrying off the liquid from the other gutters, which should terminate in a tank at the south end. Here also would be the proper place for the manure heap, provided the manure is to be removed from the stable by wheel-barrows, for no manure should be allowed to accumulate in the yards frequented by the cows.

Near the centre will be perceived three large vats, or tanks, and a pump. These tanks are for the manufacture of slops, and should be sunk in the ground so as not to freeze, and must be placed so as not to interfere with the cart passage or gutters.

Stanchions three feet apart are the best fixtures for fastening the animals, and the feeding floors should be smooth and clean, and *raised* two or three inches above the platform on which the cows stand. If slop is to be fed, small boxes may be placed with their upper edges nearly even with the floor. The position of the doors is plainly indicated in the plan; also the width of the several parts.

This lower story should be made of substantial materials, and, if of wood, so constructed as to be capable of easy renewal.

The second story is simple and easily supplied, and arranged by any one to suit his own taste and convenience. The most simple and perhaps satisfactory plan would be, to have a threshing floor sixteen feet wide, extending through the centre, the whole width of the building. On each side of this floor, and corresponding with the feeding floors below, should be placed scuttles through which to pass down the hay and fodder. On one side and over the central cart passage, should be placed the granary, with small traps below to supply the slop vats.

In a building of this size, some might prefer two floors instead of one, and a division of the hay bays. This, as well as a thousand other little things, may be left to the taste of the proprietor.

The walls of this story should be carried high enough to hold enough fodder for the entire stock the whole season, which, if the roof be carried up in the usual way, may be no more than eight or ten feet.

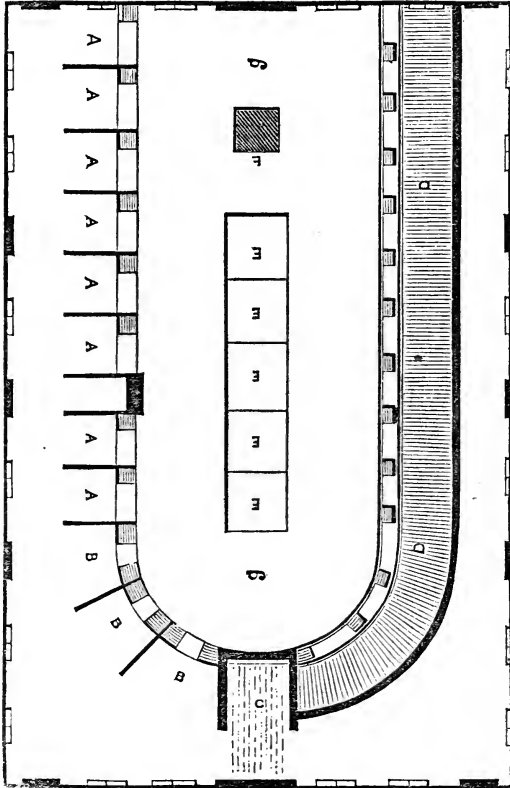
Ventilation is secured by a row of windows in the lower story above the doors and around the entire sides of the building—thence through the scuttles in the second floor—thence through the cupola in the roof. Of course any amount of architectural finish and beauty may be bestowed upon this building, consistent with the means of the farmer, there being nothing in the *form* to prevent.

The plan I have submitted may be easily modified so as to accommodate a mixed stock—horses, oxen, calves, sheep—everything kept on the farm except pigs and poultry; they should have a separate building by themselves. The different kinds could have apartments fitted up for their special accommodation, and all being in compact shape can be easily attended

THE COUNTRY GENTLEMAN.—Were the *Country Gentleman* placed beyond the reach of our agricultural papers, the loss would be felt by thousands who now read with pleasure clippings from its columns. It is beautifully printed and its articles are all prepared with great care and ability. As a journal for the garden, the farm, and the fireside, it has no equal in this country. Its price is but \$2.00 per year.—*Boston Register*.

PLAN OF A SMALLER BASEMENT.

The following plan of the basement of a barn 40 by 65 feet, was furnished by B. B., of Pittsburgh. It possesses some peculiar advantages, and has some defects. We would suggest that a part of the *central* portion be used as a *root cellar*, leaving room enough to pass around in front of the animals. Its central position would tend to protect the roots from freezing, and they might be easily filled in by dumping through a trap door above, or through a shute in the side walls.



A and B. Horse-stalls, 5 by 6 feet, with troughs and open box mangers—floors slightly inclined and paved.
 B. Open stalls for transient horses.—C. Large entrance to feeding floor.

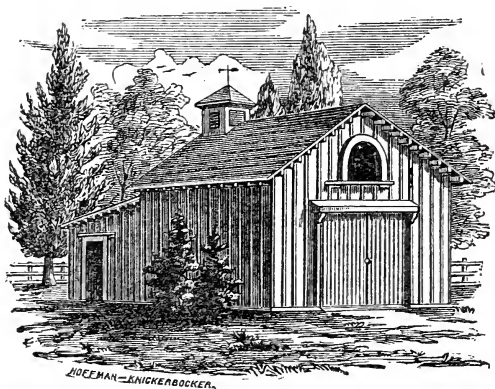
D. Cow-stalls, 4 by 4, with floor inclining to the trench—which catches all droppings and the liquid manure.

E. Grain boxes, 5 by 5, to which grain is conducted by cloth spout from the threshing floor above.

F. Steam tank—wooden, with a tight lid, fed with steam through a pipe from a boiler without, and with cut feed through a cloth or wooden conductor from the floor above.

G. The feeding floor—elevated about 14 inches above the stable floor, tightly planked, and supplied with hay, &c., from the mows above.

The doors and windows are numerous, for abundant light and ventilation; and the windows should be closed with glazed sash in the winter season. The horse-stalls should be boarded only a part of the way up, and each upright supplied with stout pins for harness, &c. The cattle fastenings should be the upright stakes and clasps.



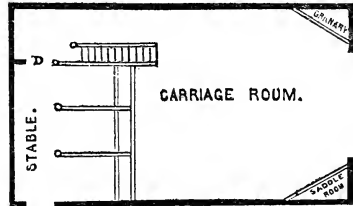
CARRIAGE HOUSE AND STABLE.

We furnish our readers with a plan and description of a carriage house and stable, of moderate size, and capable of holding three horses and three or four vehicles. Buildings of this sort are usually needed much nearer the dwelling than it is convenient or desirable to place large barns and farm establishments; and for this reason they should have a better finish and a greater neatness of appearance than extended farmeries.

The design consists substantially of a main building, about 22 feet wide by 25 feet long, constituting the carriage house and hay loft above, to which a wing is added at one end for the stables. By placing them in a wing a less heavy frame is required, and the gases from the stalls do not rise and impregnate the hay, as would be the case if it were immediately over them. Stable sills are also liable to decay from the liquid manure,

and they are more easily replaced under a wing than if the main building rests upon them.

The wing is 14 by 22 feet, affording a space of 14 feet in length for the stalls, including $2\frac{1}{2}$ feet for mangers, and each $5\frac{1}{2}$ feet in width. This



width is none too great for the comfort of the horses in lying down, or of the attendant in grooming them.

The carriage room, 22 by 25 feet, admits ample space for two carriages or buggies side by side, with room on one side for placing a cutter in summer, and on the other for passing into the stable. These being run in backward, also

afford room in cases of emergency for one or two more vehicles with the thills passing under the former.

In one of the front corners is the granary for containing horse-feed, and in the other is a small room for hanging up saddles, buffalo skins, &c., where they will be secure from dust.

The stairs afford ready access to the hay loft, by landing a little beyond the line; the upper part of the wing being several feet higher than the floor of the loft; and as they ascend from the stable passage and not from the carriage room, it is much easier to keep the carriages clean from dust and hay seed, which so commonly find their way down the stair passage, than when they are in the same room where the vehicles are kept. Under the stairs is a small harness room. The stairs being two feet wide leave a passage from the carriage room to the stable of three feet, through which horses may freely pass from one room to the other, or they may be led through the door at the side, as convenience dictates. A door is placed at the first stall near the foot of the stairs, to separate the stable from the other apartments. The arched window over the outer doors, for pitching in hay, is closed by sliding shutters.

The mangers are easily and directly filled from the hay loft through a space, a section of which is represented in the annexed cut, (Fig. 3,) where A A is the partition between the hay loft and the upper part of the stables; B the hay floor; and the door, D, is hung on hinges at its upper side.—so that all that is required is to press a fork full of hay against this door, which crowds it open, and the hay drops immediately into the manger or rack below; the door then closes by its own weight, and shuts off the vapors from the stable.

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A ventilator is represented in the perspective view, which allows the impure air from the stalls to ascend and escape. From these

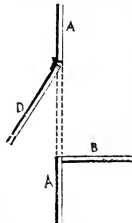


FIG. 3.

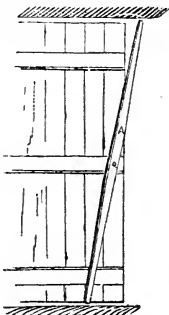


FIG. 4.

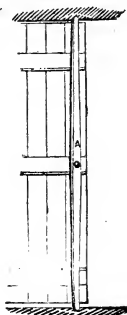
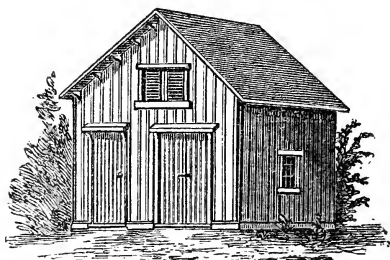


FIG. 5.

to the peak of the main building, a board tube rises for this purpose, outside and against the main building, and on the upper end of this tube a part of the ventilating turret rests. The other part of it affords ventilation to the hay loft.

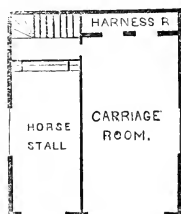
This plan may be reduced or enlarged to any desired size, from one stall upwards. An additional stall may be afforded in the smaller plans, without increasing the size, by replacing the stairs with a fixed perpendicular ladder at the end of the mangers, and converting the passage into a stall, which may have a corner manger where the stairs now are.

A door that is opened many hundred times in a year, should have a quick and easy mode of fastening. We have never found any thing better than the contrivance represented in Figs. 4 and 5, which show a portion of the inner side of one of the large doors. A light and stiff bar, A, is attached to the middle batten of the door, so as to turn freely on an iron bolt at the middle. The ends of this bar slide into a groove in the beam and sill, which secure both ends and hold the door fast. A single touch of the hand, throwing it out of the grooves, as in Fig. 4, allows the door to open; and it is again closed and fastened with equal ease, as shown in Fig. 5. This door being fastened, the other latches to it.



SMALL CARRIAGE HOUSE AND STABLE.

The accompanying design is for a carriage house and stable of the smallest size, or for a single horse and buggy. This is all the accommodation that many village and suburban residents need; and such an erection near the dwelling of the large farmer whose business leads him much from home, on short errands, is a great convenience, allowing the other stable and carriage accommodations to be placed at a greater distance from the house, or in connection with the rest of the farm buildings.

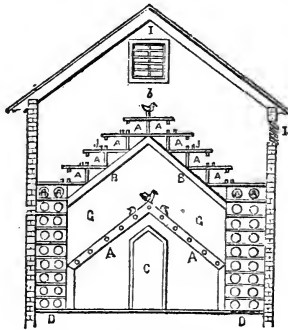


In this plan, which is 16 by 18 feet, there is a single horse-stall, 6 feet wide and 14 long; a carriage room 10 feet wide and 16 long; with a harness room 2 feet wide, at the end. The stairs ascend from a separate apartment, so that dust and hay seed may not reach the carriage and harness; and

under the stairs is a small granary for holding oats. The hay loft is large enough to contain at least one ton of hay, and the window through which the hay is pitched, is closed by sliding shutters. If desired, a light sliding door may be placed in the partition between the stable and carriage room, for passing in stormy weather.

DESIGN FOR A POULTRY HOUSE.

A correspondent furnishes us the annexed design for a poultry house. He says:—I built one last summer, of brick, on a hill-side, with an eastern aspect, having an underground room, which is cool in summer, and warm in winter, and which, my fowls having tested and highly approved, I now recommend as "*just the thing*." I have seen more expensive and curious arrangements, but they proved to be inconvenient or were wholly rejected by the fowls. By constructing the nests in this manner, they may be easily reached, and setting hens and young chicks cared for as they should be to ensure success. I have a dove cote in the roof, which is also convenient and "*approved*" by the pigeons.



INTERIOR OR SECTION OF HEN HOUSE—TWELVE FEET SQUARE.

A A. Joists placed rafter-wise, 3 by 4 inches, in which are holes for the poles for perches, which in this section are seen endwise.

B B. Similar joists, which support the nests *a a a a*, &c.—the series of these also being seen endwise.

b. Perch for the young chicks.

The space between the nests, A A, and the roosts, B B, is three and a half feet.

The space between the nests and the roof is six feet.

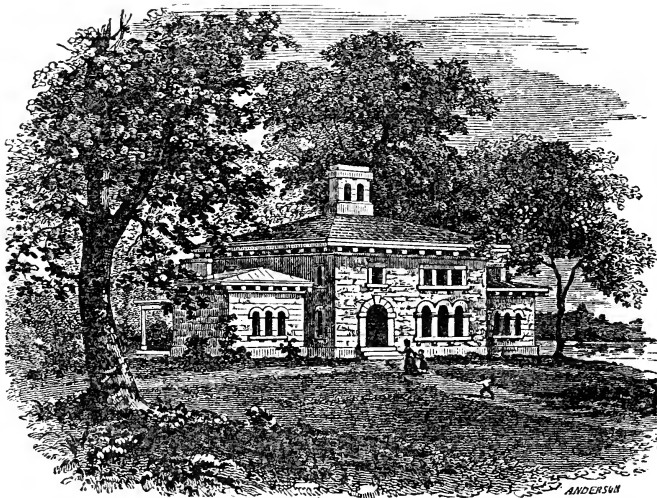
C. Door for entering beneath the roosts, for clearing out guano, &c.*

D D. Places of doors, opening next the stairs on each side. These stairs serve to ascend to the nests above, and also contain themselves two boxes for nests between each step, making 36 nests in the stairs, the openings to

* This door, or its equivalent, should be of glass, as the feeding department of a hen house needs an abundant supply of light.—[EDS.]

which are represented as round holes in the engraving. These, with the upper nests, make 132 in all, each 1 foot square. There are 12 perches, each 12 feet long, accommodating easily 144 fowls, allowing each 1 foot. Perches may also be made under the stairs, sufficient for 200 fowls in all.

I I. Ventilators, which should be in the south and east sides. These will admit light enough for the laying and setting departments. J. H. D., Troy, N. Y.



SCHOOL HOUSES.

We once heard a distinguished traveling lecturer on education, assert that he could at once know a district school house from any other building, by its being the *worst-looking* house in the neighborhood. Broken windows and broken walls, and a general air of desolation, have in many cases been the leading features. If children are to be taught the knowledge of order and comfort, these are miserable examples to set before them. In strong contrast with such pictures is one described by DOWNING, a building erected for a *free school*, by a private gentleman, in Dutchess county, as an example for a district school. "It was a building simple enough after all. A projecting roof, with slightly ornamented brackets, a pretty porch, neat chimney tops; its color a soft, neutral tint; these were its leading features. But a single glance at it, told in a moment that *the evil spirit had been cast out*, and the good spirit had taken its place. The utmost neatness and cleanliness appeared in every part. Beautiful vines

and creepers climbed upon the walls and hung in festoons over the windows. Groups of trees and flowering shrubs were thriving within its enclosure. A bit of neat lawn surrounded the building, and was evidently an object of care and respect with the pupils themselves." Such an example before children could hardly fail to exert a controlling influence, to continue through after life.

But it is not the manner of keeping, only, but the structure in erection, that demands a great improvement. Thousands of dollars—we might almost say millions—are yearly wasted in the erection of unsuitable school houses, which most commonly answer the purpose but very imperfectly, and are not infrequently a great waste of money by bad arrangement. State governments could not better apply a little money than by publishing a small, well prepared pamphlet on the erection, arrangement, and furnishing of the cheaper district school houses, and sending a copy to every district.

The internal structure of a small house is exhibited in the accompanying plan. The teacher's desk, *a*, is on a raised platform; the pupils' desks

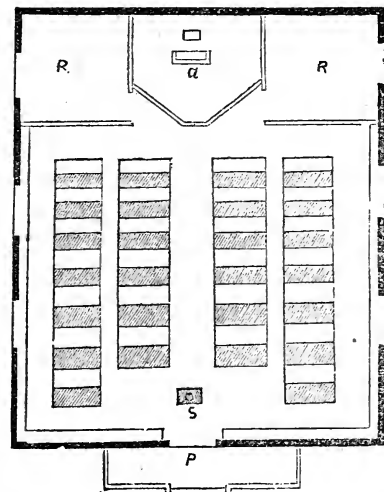


FIG. 1.—Plan of Floor.

are in front of this, and occupy the centre of the room. The principal aisle runs thro' the middle, separating boys and girls. This should be four feet wide; the two smaller on either side need not be more than twenty inches wide. Each pupil is provided with a seat and desk, two pupils occupying, side by side, the same double seat—a greater number should never be placed together, for several reasons, one of which is, the inner ones cannot leave their seats without disturbing their neighbors. The smaller or narrower seats and desks, for the smaller children, are placed nearest the teacher; these seats are about nine inches in width, and ten and a half high, with desks twelve inches wide, and twenty-one high. The larger seats are eleven and a half inches wide, and fourteen inches high, with desks fifteen inches wide and twenty-seven high. Every desk should be *numbered*. The stove is placed at *S*. *R R* are the recitation rooms, one of which may be used for the smaller children and the other for more advanced classes. If the teacher has one or more assistants, these rooms may be separately partitioned off, or the partitions may be left open next the teacher's desk, but shut off from the rest of the school, or with sliding doors, so that he may hear one of the classes from his seat. Or if only one teacher is employed, there need be no partitions, and the same places occupied by the reciting classes; or, one of these

rooms may be used for a library, &c. Each room should be furnished with blackboards, and now that clocks are so cheap, no school should be without one, to be placed over the teacher's desk. Outline maps may be hung on the partitions of the recitation rooms. The entrance-porch, P, may be used for hanging up caps, &c., and it should, if practicable, be large enough to contain wood.

If a good well of water and pump could be added, it would be a great improvement. In some places conveniences for washing will be important.

The windows are placed on the two opposite sides—this arrangement lights a school room to the best advantage, and prevents that confusion of light where windows are on three sides.

For children who are compelled to sit several hours during a day, (which is sufficiently irksome and unnatural, to say the best,) easy and comforta-

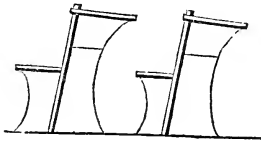


FIG. 2.

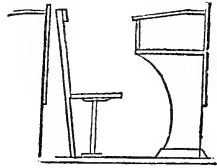


FIG. 3.

ble seats should be provided. Sitting long is harder for children than for adults; but few of the latter would be willing to sit so long, even for one day, to say nothing of repeating it for months.

Fig. 2 represents the simplest mode of making seats and desks, yet has an important improvement, by giving a *slope* to the back of the seats.

Fig. 3 represents a more finished desk, which may be adopted for larger pupils—the seats and desks being separate, there is less interference with those sitting behind. Each desk has two chairs, consisting of round plank fastened to a cast iron support, strongly screwed to the floor. The backs are made of three slats, screwed to the seat and fastened into a cross top piece. We have already given the dimensions of these. They are becoming commonly used. The desk lids should always open above, as none can be kept neat without.

A seat runs round the room on three sides next the walls, not commonly, but sometimes needed. The other seats connected with the desks are sufficient, in the plan, for 52 pupils, and may be increased or diminished without altering the general arrangement. A house 24 by 28 feet will contain the accommodations here represented, and if built one story high, with *arched ceiling*, with vertical boarding and battens, need not cost more than three or four hundred dollars. It should have something of a tasteful exterior, for to children, lessons in neatness, taste, &c., are quite as important, even in an economical and practical point of view, as chemistry and algebra.

Fig. 4 represents the mode of building we have recommended, presenting a handsome exterior, and a tasteful architecture, of the simplest Italian cast.

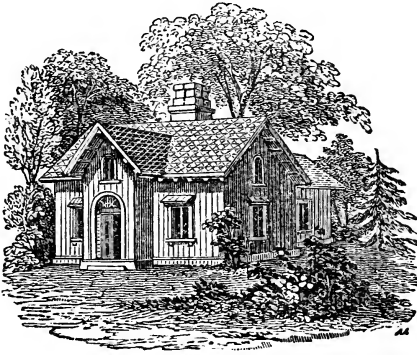


FIG. 4.

A simple, cheap, and handsome erection, with the Gothic characteristics, is shown in Fig. 5.

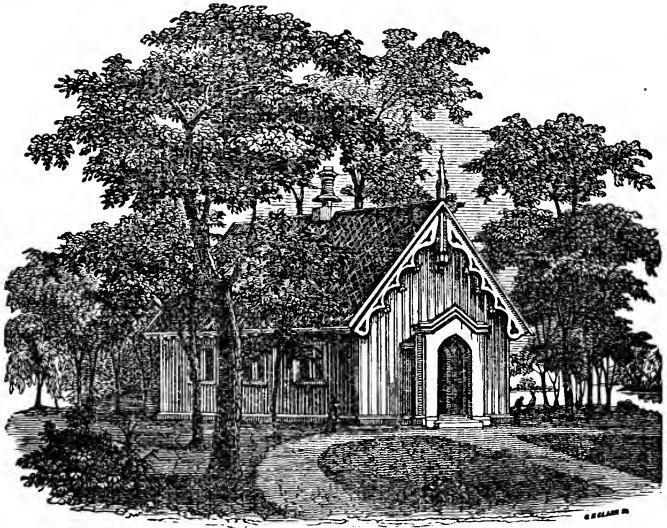


FIG. 5.

For a house built of brick, and of a more costly character, the engraving at the head of this article, (page 192,) represents a handsome specimen, the wings serving for recitation rooms.

A wooden building, where several hundred dollars may be expended, may be given a tasteful and picturesque appearance if built in the Swiss style, as in Fig. 7, copied from the *Horticulturist*

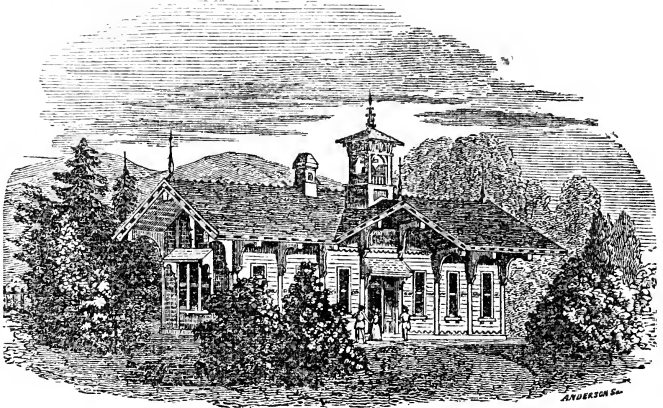


FIG. 7.

The accompanying plan (Fig. 8,) may be adopted or not, as may suit the owners. An entrance-hall or lobby opens into a large school room for boys upon one side, and one for girls upon the other. Between these is a recitation room for both together, which may also contain maps, the book-case for the school library, &c.

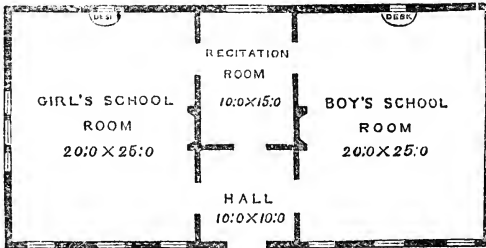


FIG. 8.

In all school houses, especial care is needed to provide ample ventilation, so that none may be subjected to cold currents of air while others are overheated, nor any suffer from the common practice of fifty or more breathing over and over again, all the day long, the same impure body of air.

The great leading and most essential requisite in a school room, we have not mentioned. This is, to *place the seats fronting towards the*

north, so that the outline maps may be suspended on the north side of the room,—and that first impressions of north and south may be correct. Unless a child sees a map for the first time placed in the right position, every thing will be turned round through all the rest of his life. The writer of this article would be willing to give two hundred dollars to-day, if he could have had his first impressions correct in this particular.

SHORT DESCRIPTIONS OF THE BEST FRUITS.

It is impossible to make a select list of fruits that shall please every one, for these reasons, viz.: 1, Tastes differ; 2, Fruits vary exceedingly by the diverse treatment they receive; 3, They vary much in different places and seasons; 4, The newer excellent sorts have not been enough tried, and their quality and general adaptation are imperfectly known.

But there are a few sorts that have received a *very large vote* in their favor, either through the country generally, or in many parts of the country, and these are generally introduced in the list. But there is scarcely one, but sometimes or in some places fails, and consequently has its objectors.

In making out this list, the labors of the American Pomological Society, and of the various horticultural societies in the different States, with the experience of many individuals, have been made use of.

SUMMER APPLES—IN THE ORDER OF RIPENING.

EARLY HARVEST. Succeeds well throughout most parts of the northern and western States. Often called Yellow Juneating, Yellow Harvest, &c. Size medium, a little flattish; skin a bright straw color; flavor rather acid; quality fine. Shoots of young trees erect and straight.

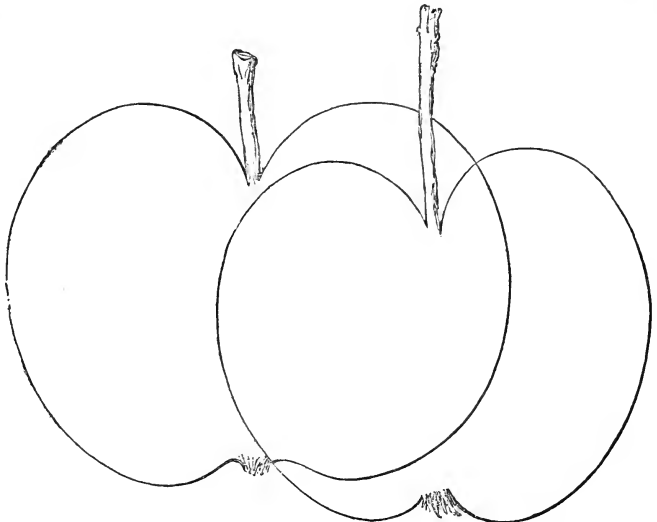
SUMMER ROSE. A rather small, roundish, or slightly flattened apple; skin smooth, and more or less striped with red; flesh fine grained, very tender, with a mild, sub-acid excellent flavor. Continues ripening for a month. Its small size compensated by its great delicacy. Fine throughout the northern and western States. Fruit sometimes scabby.

RED ASTRACHAN. Rather large, roundish and flattened; the whole surface a deep brilliant crimson, with a bloom like a plum; flesh white, somewhat coarse and crisp, rather acid, good. The most showy of all summer apples; excellent for stewing. Shoots strong; leaves broad. Succeeds well in the northern, middle, and western States.

SINE QUA NON. Medium size; roundish, and very slightly conical; skin smooth, greenish yellow, often with a brown cheek; flesh greenish white, very fine grained, exceedingly tender when fully ripe, and of a fine, agreeable, sub-acid flavor. Tree a poor grower in the nursery, hence not widely cultivated, although productive.

EARLY STRAWBERRY. Size rather small, roundish, conical; skin usually a brilliant deep red; flesh white, sub-acid, rather brisk, not very rich. Growth of young shoots very erect, tree productive, and fruit always fair.

PRIMATE. Medium or rather large in size, roundish, conical, ribbed, light green; flesh fine-grained, juicy, mild sub-acid, very agreeable.



EARLY HARVEST.

EARLY STRAWBERRY.

Ripens for several weeks through the latter part of summer. It has not yet been proved much out of western New-York.

SOPS OF WINE. Size medium; roundish, slightly oblong; dark red; stem long and slender; flesh white, often stained red, sub-acid, good; flavor not very high, but desirable for its uniformly fair surface and the handsome growth of the tree. Valuable for market. This is not the Sapson, a smaller variety.

AMERICAN SUMMER PEARMAN. Size medium, roundish oblong; mostly striped or blotched with light red; flesh very tender, sub-acid, of fine quality; late summer and early autumn. Tree of slow growth.

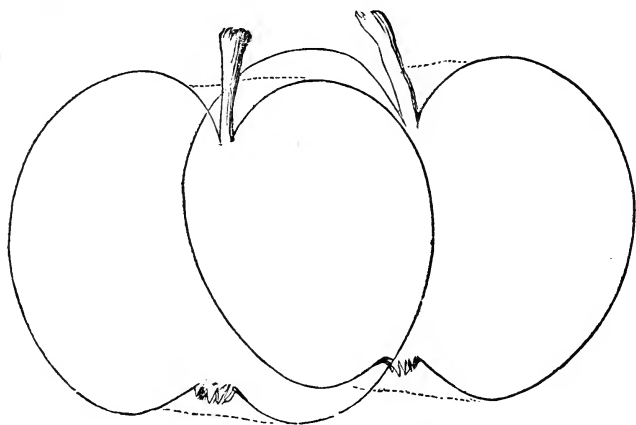
EARLY JOE. Medium size or rather small, flattish; light red; flesh very fine-grained, tender, sub-acid, of an excellent flavor; unsurpassed in quality by any early apple. Tree of slow growth. Not extensively proved yet. Must be eaten fresh.

BENONI. Medium in size; roundish or slightly conical; skin striped with bright red; flesh tender, rich, sub-acid, of fine flavor. The tree is a handsome grower, and good bearer; and the variety valuable. Has proved fine in New England, New-York and some other places.

CAROLINA RED JUNE. A fruit of medium size, rather oblong, and of a beautiful red color, and a sprightly agreeable flavor. Is the most valuable early apple in northern Illinois and the adjacent region. The tree is a fine grower, and bears abundantly.

SUMMER SWEET APPLES.

SWEET BOUGH, or Large Yellow Bough. Large, roundish, sometimes conical; pale greenish yellow; flesh very tender, and of an excellent sweet



SUMMER ROSE

EARLY JOE.

flavor. Ripens for several weeks during the latter part of summer. A moderate and regular bearer. Tree round headed. Succeeds well throughout all the northern, middle, and western States.

GOLDEN SWEET. Full medium in size; roundish, and a little flattened; flesh very sweet; good, but not of the highest quality. The fruit is always fair; the tree a free grower, and productive.

AUTUMN APPLES—IN THE ORDER OF RIPENING.

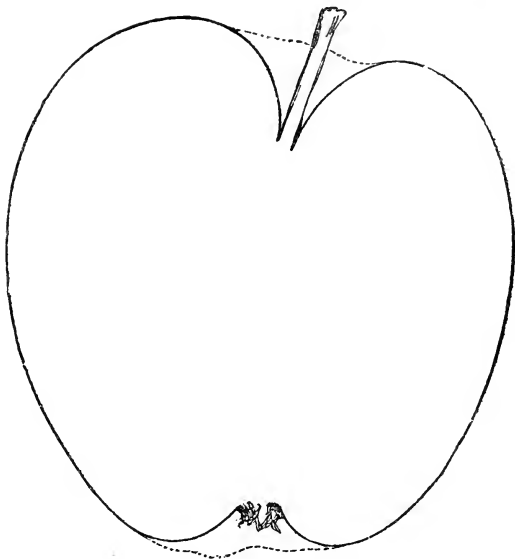
AUTUMN STRAWBERRY, or Late Strawberry. Size medium; roundish, sometimes a little ribbed, the whole surface more or less striped with red; flesh tender, (very slightly fibrous,) juicy, sub-acid, flavor excellent. Tree a handsome grower, and productive. The fruit will keep through autumn.

JEFFRIES. Full medium in size; roundish and flattened; yellow, red, and deep red, striped; flesh yellowish white, remarkably tender and juicy, flavor exceedingly agreeable. From Pennsylvania—not much proved as yet elsewhere; new.

OLDENBURGH, or Duchess of Oldenburgh. Above medium in size; a little flattened; color light red in broad broken stripes; flesh yellowish white, sub-acid; good. Although not of very high flavor, this fruit is valuable for its uniformly smooth and fair skin.

KESWICK CODLIN. Rather large, somewhat oblong or conical; light yellow; juicy, with a pleasant second-rate sub-acid flavor. Very productive, bears when young, and valuable for cooking. Succeeds throughout the northern part of the Union.

LOWELL. Large, roundish oblong, skin a rich yellow, oily; flesh rather coarse, but with a rich rather acid flavor. Valuable for its productiveness, bearing when young, and for its handsome, uniformly fair fruit. Tree a slow, spreading grower. Fine in New-York and Ohio.



PORTER.

HAWLEY. Large, roundish; pale greenish yellow; flesh fine grained, tender, with a mild, sub-acid, rich, agreeable and excellent flavor. Has proved fine in New-York and Pennsylvania. Rather new.

COOPER. Rather large, a little flattish, striped with pale red; flesh very tender, mild and agreeable in flavor, but not rich. A favorite in central Ohio.

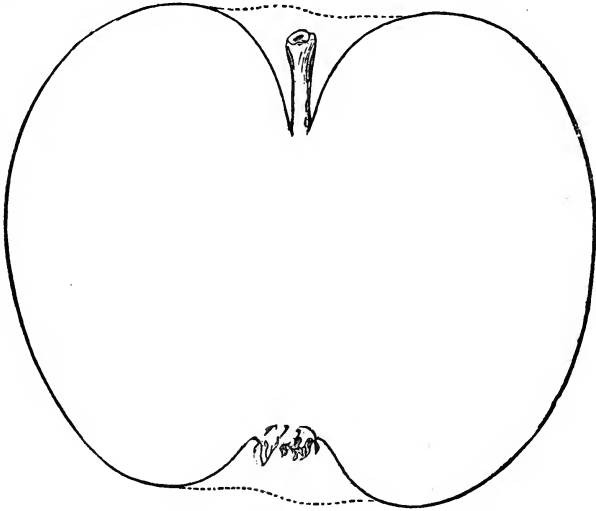
PORTER. Full medium in size; oblong and conical; bright yellow; flesh tender, with a rich, rather acid flavor. Fair, productive, and valuable. Succeeds throughout the northern and western States.

GRAVENSTEIN. Rather large, roundish; striped with bright red; flesh juicy, with a very rich, rather acid flavor. Tree productive, a fine grower, forming a round head; fruit handsome and excellent. This German apple has proved fine in the northern, middle, western, and in some of the southern states.

LELAND SPICE. Rather large, roundish, red; flesh yellowish white, sub-acid, spicy, rich, of fine flavor. A Massachusetts variety; not much proved elsewhere.

FALL ORANGE. Large, roundish oval; pale yellow; flesh sub-acid, and excellent if fresh and ripe from the tree. Tree a strong grower; fruit always fair; tree bears when young. Not widely known.

DYER, or Pomme Royale. Above medium in size; roundish, a little oblong; ribbed toward the blossom end; skin light yellow, with sometimes a russet network; flesh very fine grained, juicy, with a rich, rather



GRAVENSTEIN.

acid flavor, rarely equalled. Tree of slender growth, and a moderate bearer. Ripens through autumn. Fine in New-England and New-York. Bears when young.

SMOKEHOUSE. Rather large, flattish; color a light dull red; flesh rich, aromatic, sub-acid, of fine flavor. Growth, crooked and spreading. Succeeds well in New-York and in the middle and western States.

FAMEUSE. Medium in size; round, sometimes flattened; whole surface often a fine deep red; flesh very white, (whence its other name, *Pomme de Neige*, or Snow-apple,) sub-acid, juicy, a little spicy, very pleasant and agreeable, but not very rich.

FALL PIPPIN, called erroneously Holland Pippin, the latter name belonging to a very different apple. Very large; (we have seen it twenty-three ounces;) roundish, sometimes a little conical; skin rich golden yellow when ripe; flesh yellowish, rather firm and hard, becoming tender when fully mature, with a rich, aromatic and excellent flavor. A moderate bearer. Admirable for stewing. Excellent in the northern, middle, western, and several southern States. It becomes a winter apple far north.

RAMBO. Size medium; flattened; color dull light red; with a mild sub-acid excellent flavor. A favorite throughout the western States.

AUTUMN SWEET APPLES.

JERSEY SWEETING. Size medium; roundish ovate, striped with red; flesh very sweet, juicy, and tender; of good quality, but not of the highest character. Productive and valuable, and succeeds well through the north and west.

SUMMER SWEET PARADISE. Quite large; roundish; pale green, becoming yellowish; sweet, rich, aromatic, of fine flavor. Has not been widely proved.

AUTUMNAL SWAAR. Large; flattish; color rich yellow; flavor very sweet, spicy and agreeable. An excellent fruit. Not widely known. There is a greatly inferior sort, known in western New-York as "Sweet Swaar."

HASKELL SWEET. Large, often very large; flattish; greenish yellow, flesh often tinged with yellowish brown; tender, sweet, rich, and good. A great bearer; new; has proved fine in Massachusetts and New-York.

WINTER APPLES—IN THE ORDER OF RIPENING

MELON. Full medium in size; roundish, slightly conical; handsomely striped with red; flesh tender, very juicy, fresh and pleasant, spicy, with a mild, sub-acid, exceedingly agreeable flavor. Considered by some as the best of all table apples. Growth quite slow, and a moderate bearer; new. Not much proved out of western New-York. May be eaten in autumn, and will keep till spring.

BULLOCK'S PIPPIN, or American Golden Russet. Rather small; conical; light yellow, thinly and partly covered with light russet; stem long, slender; flesh very fine grained, becoming very tender, with a mild, slightly sub-acid flavor. This apple proves excellent and valuable throughout most parts of the western States; but at the north and east it is often quite worthless.

BELMONT. Rather large, often oval, sometimes flattish, variable; color pale yellow, frequently with a light vermilion blush; flesh rather compact, becoming tender, with a mild, rich, sub-acid, excellent flavor. It is particularly excellent and valuable in northern Ohio, and in some parts of the middle States.

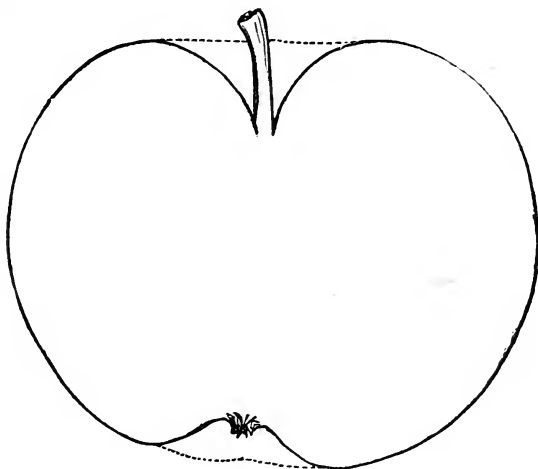
HUBBARDSTON NONESUCH. Rather large, roundish, often a little oblong, and largest at the middle; striped with light rich red; flavor mild sub-acid, excellent. Loses by keeping. Succeeds best in New England.

MCLELLAN. Full medium in size; round, smooth, regular; striped with lively red on yellow ground; flesh fine grained, tender, slightly sub-acid, agreeable, not very rich. The fair fruit and productive tree render the McLellan a valuable apple. Proved only in New-York and New England.

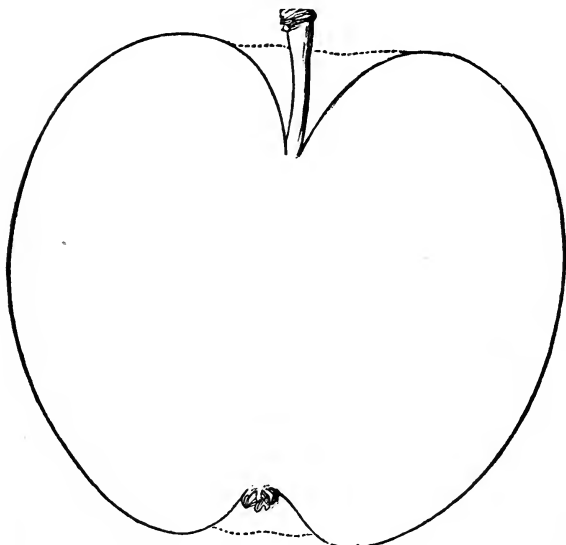
PECK'S PLEASANT. Large, roundish, shape somewhat variable in different seasons; stem very short; color light green becoming yellow; calyx, or eye, large and open; flesh compact, tender, breaking, with a fine, clear, Newtown Pippin flavor. A good bearer; *fruit always fair*; poor if too ripe. Origin, Rhode Island; rather new; fine in western New-York.

WESTFIELD SEEKNOFURTHER. Full medium, roundish, a little conical, very regular; color light, dull red, sometimes much russeted; flesh tender, rich, spicy, and fine. Tree productive, and fruit fair. Fine throughout the northern States.

YELLOW BELLFLOWER. Large when well grown; oblong, somewhat conical towards the apex, more or less irregular; skin pale yellow; flesh fine grained, tender when ripe, juicy, rather acid, becoming milder with ripening; flavor excellent. Succeeds well in most of the northern, middle and western States, but fails in some localities



BALDWIN



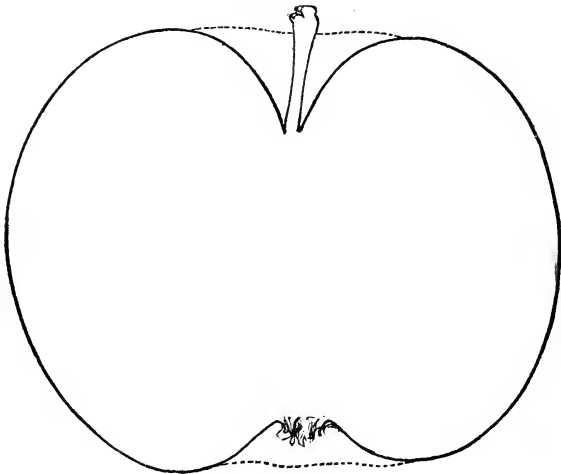
ESOPUS SPITZENBURGH.

BALDWIN. Rather large; roundish; color more or less dull red, becoming light or yellowish red at maturity; flesh yellowish white, rather coarse, flavor rather rich, mild sub-acid. Varies much in flavor with seasons, culture, locality, and age of tree. A great bearer, young and old; fruit fair, and very popular as a market variety. Succeeds well in the eastern States, in most parts of New-York, and frequently in the middle and western States. At the south it becomes a summer apple.

RHODE ISLAND GREENING. Large, somewhat flattish; color greenish yellow; always smooth and fair; flesh yellow—greenish if much shaded, a rich yellow when well exposed—tender, with a rich, rather acid flavor. Well known in New-York and other portions of the north as the most reliable and profitable market sort. Not sufficiently proved yet at the west, but does not promise so well there. An autumn apple at the south.

PRYOR'S RED. Medium or rather large; roundish, irregular; color dull brick-red and russet; flesh tender, mild, agreeable. Succeeds best at the south-west, where it is highly esteemed; not so good in New-York.

ESOPUS SPITZENBURGH. Rather large, round-ovate; color a high rich red; flesh yellow, firm, and compact, crisp, spicy, rather acid, scarcely equalled in richness and high flavor. Admirable for culinary purposes. A moderate bearer. Succeeds best in New-York, but does well in many parts of New England and at the west.



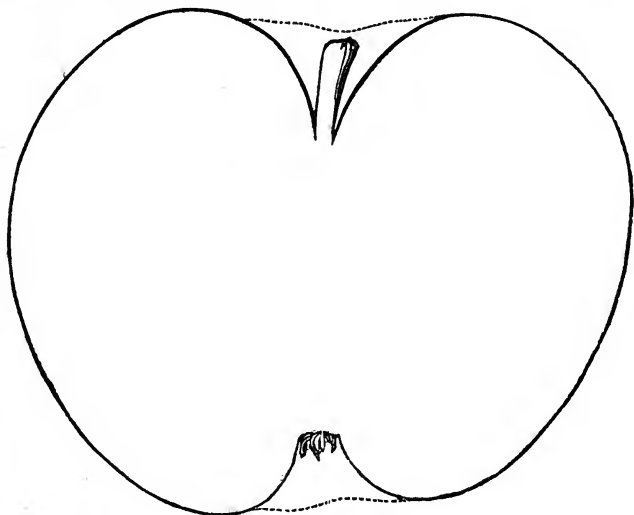
SWAAR.

SWAAR. Above medium in size; roundish, mostly somewhat flattened; color becoming a rich yellow; flesh fine grained, compact, tender, with a very rich, mild, aromatic, agreeable flavor. Esteemed by some as the best winter table apple. Keeps into spring; fruit apt to be scabby on overloaded trees. Succeeds best in New-York Michigan &c. often poor in New England.

RED CANADA, sometimes known as Nonesuch and Old Nonesuch. Size medium; roundish conical; mostly covered with light red, and interspersed with rather indistinct whitish dots; flesh fine grained, compact, with a rich, sub-acid, high and excellent flavor. Growth slender and feeble; fruit not always fair. Succeeds more or less in New England, New-York, and Ohio.

JONATHAN. Rather small at the east, often quite large at the west; roundish-ovate; color a deep bright red; flesh nearly white, spicy, sub-acid, of an excellent flavor. Growth of tree slender, but a great bearer; fruit fair, and some specimens from the west exceedingly beautiful.

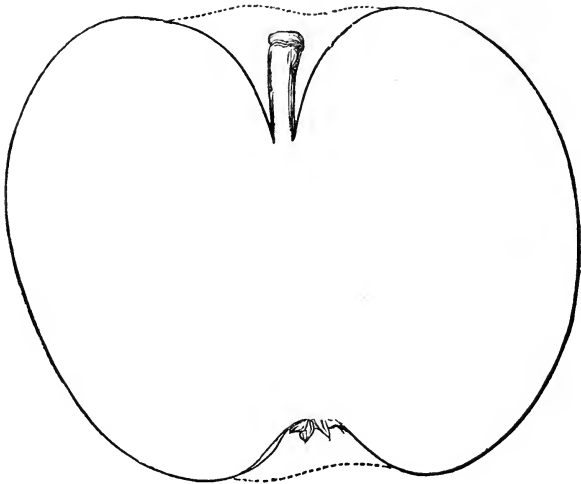
RAWLES' JANNET, or Neverfail. Size medium; roundish; slightly striped with pale red; flesh crisp, nearly white, with a fine texture, and a mild, good flavor. Blossoms later than usual, often escaping spring frosts—and hence the name Neverfail. A valued market fruit in the Ohio valley, keeping through spring.



NORTHERN SPY.

NORTHERN SPY. Large, roundish conical; handsomely striped with red; flesh tender; flavor mild and agreeable, spicy, excellent—which it retains with remarkable freshness late into spring. Tree a vigorous and very upright grower; long in coming into bearing; needs thinning out in pruning; requires rich and high culture.

NEWTOWN PIPPIN. Above medium; roundish, somewhat irregular; dull green, becoming yellowish green; flesh greenish white, juicy, crisp, fine grained, with a high, excellent flavor. Tree of slow growth; bark rough. Often scabby, unless with high culture. Succeeds well in New-York and the western States; poor in New England.



NEWTOWN PIPPIN.

ROXBURY RUSSET. Size medium; commonly flattish; mostly covered with rather rough russet, on a greenish yellow skin; flesh rather granular, crisp, with a good sub-acid flavor. Growth spreading; shoots downy. Uniformly fair and productive. A famous market fruit in the northern States, and succeeds in many places at the west.

ENGLISH RUSSET, or Poughkeepsie Russet. Rather below medium in size; roundish, or roundish-conical; more or less russeted, on a light, greenish yellow skin; flesh greenish or yellowish white, rather firm, with a sub-acid, good flavor. Will often keep twelve months. A profuse bearer. This is distinguished from the Roxbury Russet by the *upright* growth of the young trees and shoots.

WINTER SWEET APPLES—IN THE ORDER OF RIPENING.

BAILEY SWEET. Large; ovate; mostly a full, bright red; flesh very tender, not juicy, with a mild, rich, sweet flavor. New. Not proved much out of western New-York.

WELLS SWEETING. Size medium; roundish; color light green; flesh white, tender, rich, agreeable. From Newburgh, N. Y. Not widely proved.

SWEET BALDWIN. Medium; round; deep red; compact; very sweet. Not widely proved.

TALLMAN SWEETING. Above medium; roundish; a clear, light yellow, with a *distinct brownish line from stem to blossom*; flesh white, firm, rich, very sweet. The original mis-spelling—Tolman—should not be copied.

DANVERS SWEET. Above medium; roundish, a little conical; light yellow, often a handsome blush; flesh yellow, sweet, rich. Succeeds well in the eastern and middle States.

BROADWELL. Rather large; a little flattish and conical; greenish yellow; flesh white, tender, sweet, juicy, and of a fine flavor; somewhat resembling the Sweet Bough of summer. A fine new Ohio variety.

LADIES' SWEETING. Medium, or large; roundish or roundish-ovate; a fine, bright red at maturity; flavor sweet and agreeable, not very rich. Tree of feeble growth, and usually overbears. Origin, Newburgh, N. Y., and proves fine in other localities.

GREEN SWEET. Rather large; round; green, with whitish dots; flesh greenish white, with a very sweet, spicy, good flavor. Productive, always fair, and a long keeper.

P E A R S .

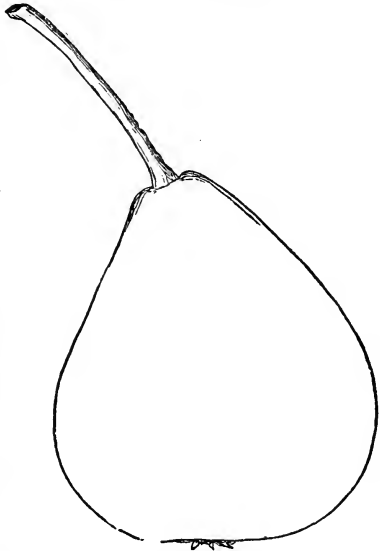
SUMMER PEARS—IN THE ORDER OF RIPENING

MADELEINE. Size medium; obovate - pyriform; smooth; greenish yellow; flesh very juicy and melting, with a faint degree of acid astringency, and a very agreeable, refreshing flavor. Like nearly all other summer pears, needs house-ripening. Matures at the north at the time of wheat harvest.—Growth erect and vigorous.

SUMMER DOYENNE, (or Doyenné d'Été.) Rather small; roundish obovate; skin a fine yellow, usually with a bright red cheek; flesh melting and juicy, with a sweet, slightly perfumed flavor. Ripens nearly or quite as early as the Madeleine, and is by some preferred to that variety. Shoots slender; tree bears very young.

SKINLESS. Rather small; pyriform; regular; skin smooth, very thin, yellowish green; flesh half melting, juicy and sweet, slightly perfumed; flavor good. Ripens two weeks after the Madeleine, and valuable for its vigorous, erect growth, its profuse productiveness, and period of ripening.

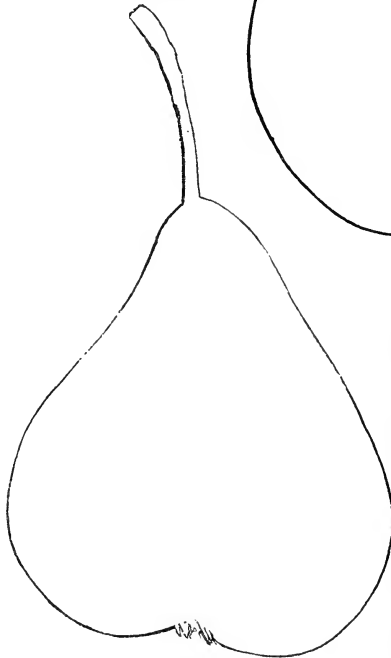
BLOODGOOD. Medium in size; obovate; yellow, more or less touched with russet; flesh yellowish white, buttery, melting, with a fine, rich, aromatic flavor when at its best. Sometimes the flavor is poor and insipid. Tree of moderate growth. Ripens immediately after Skinless.



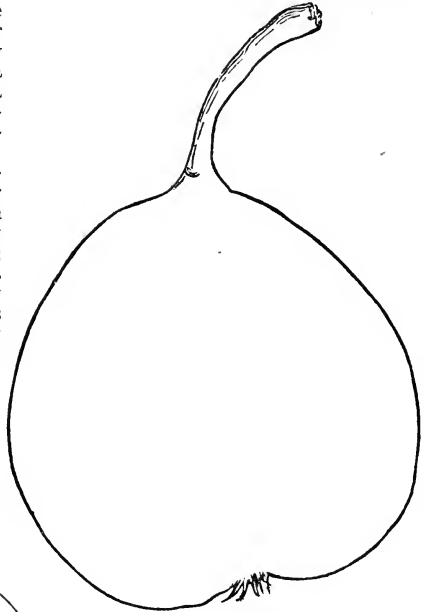
MADELEINE.

OSBAND'S SUMMER. Size medium; obovate; regular in form, sometimes slightly pyriform; yellow, with a reddish cheek; flesh with a sweet, fine, perfumed flavor. Tree a vigorous grower.

BEURRE GIFFARD. Medium, sometimes rather large; pyriform; skin greenish yellow, usually with a dotted red cheek; flesh tender, juicy, with a sweet, refreshing, very agreeable flavor. Shoots slender. Although a new sort, it has been widely



BEURRE GIFFARD.



BLOODGOOD.

proved, and is very highly esteemed. Ripens very closely on the last,—indeed the Bloodgood, Osband and Giffard differ very slightly in their periods of maturity.

DEARBORN'S SEEDLING. Rather small; obovate, regular; smooth; skin clear yellow; flesh fine grained, melting, juicy, and of fine flavor. Fruit, although too small to become very popular, always of fine quality. Tree bears quite young. Ripens immediately after the three preceding sorts.

TYSON. Medium in size, often rather large; obovate-pyriform, acute; color a bright yellow, with a rich, softly



SUMMER DOYENNE. OSEAND'S SUMMER. DEARBORN'S SEEDLING.

shaded, red cheek; flesh very fine grained, buttery, very melting, with a nearly sweet, perfumed and excellent flavor. Ripens in western New-York during the last two weeks of summer. Growth erect, vigorous. Tree late in coming into bearing, but grows finely on quince, and bears soon.

ROSTIEZER. Rather small; obovate-pyriform; skin dull brownish green, with a dark, brownish red cheek; flesh juicy, melting, sweet, with a very high, perfumed flavor. This is perhaps the highest flavored of all summer pears, and stands about the same in rank with summer varieties as the Seckel does with those of autumn.

There are several new summer pears of high reputation, among which may be named the Ott, Hosenshenk, Brandywine, and Moyamensing,—Pennsylvanian varieties, which have not as yet been much proved out of that State, and consequently their fitness for general cultivation not fully determined.

AUTUMN PEARS—NEARLY IN THE ORDER OF RIPENING.

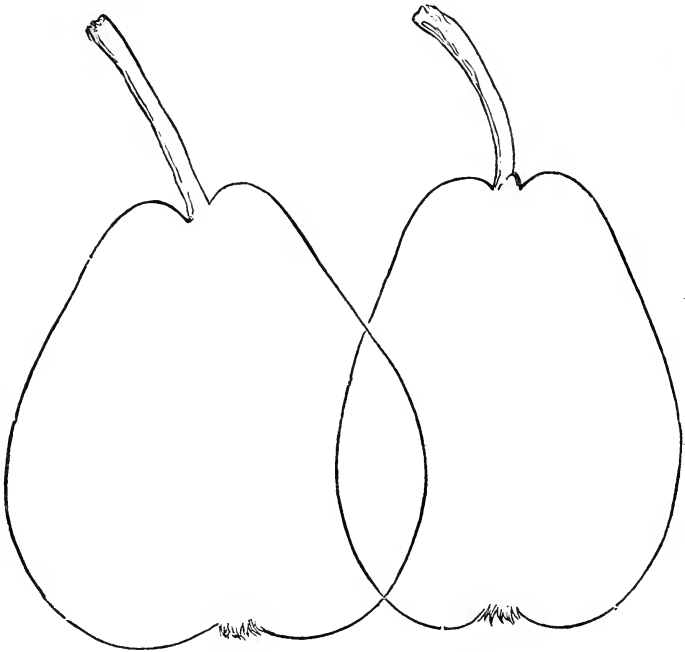
[Good autumn pears are much more numerous than those of summer or winter. The following list comprises most of those which have proved valuable, but there are still a considerable number of older varieties of merit, or of new sorts of promise, that our want of space has excluded.]

BARTLETT, (or *Williams' Bonchretien.*) Large; obtuse-pyriform; surface wavy; clear yellow; flesh fine grained, very tender and buttery, sweet, sometimes faintly sub-acid, perfumed, moderately rich flavor. Tree erect

and thrifty; bears very young. Ripens if picked two weeks before maturity, even if not full grown. Ripens about the first of autumn at the north, in summer further south. Universally popular. This and the Seckel were the only pears that received a *unanimous* vote in the committee of nine, appointed by the first Congress of Fruit Growers in New-York in 1848.

ANDREWS. Medium size; pyriform; skin thick, greenish, with a brown cheek; flesh very juicy, melting, with a fine, agreeable flavor. Very productive, and bears young. From Massachusetts.

KIRTLAND. Medium or small; round-ovate; greenish, with rich brown russet; flesh fine grained, buttery and melting, perfumed, with a high, excellent flavor like the Seckel. From Ohio.



GOLDEN BEURRE OF BILBOA.

WASHINGTON.

BILBOA, (or *Golden Buerré of Bilboa.*) Full medium; obovate or slightly pyriform, regular; skin smooth, fair, yellow, russeted round the stalk; flesh fine grained, buttery, moderately rich.

ST. ANDRE. Medium; obovate; greenish yellow, with some red dots; flesh fine grained, buttery, melting, excellent.

PRATT. Medium, or rather large; obovate-pyriform; greenish yellow, with numerous dots; flesh tender, melting, juicy, excellent. From Rhode Island.

WASHINGTON. Size medium; oblong-obovate, sometimes obtuse-pyriform; smooth; clear yellow, with handsome red dots on the sunny side; flesh juicy and melting, but not buttery, with a rich, very sweet, perfumed, excellent flavor. Growth erect.

GENESEE, (or Stevens' Genesee.) Large; round obovate; skin slightly rough, yellow; flesh a little coarse, half-buttery, with a rich, good, but not first-rate flavor.

HEATHCOT. Medium; obovate; regular; greenish yellow, with some russet flesh buttery, rich, perfumed, excellent when at its best. Growth upright; productive. From Massachusetts.

SECKEL. Small; obovate; brownish green, becoming rich yellowish brown; flesh very fine grained, sweet, very juicy, melting, buttery, highly perfumed; the richest and highest flavored pear known. Growth slow and stout; tree small; very productive. The size of the fruit is much increased by high culture. Popular everywhere.

BUFFUM. Medium; obovate; yellow, with a broad, reddish brown cheek, somewhat russeted; flesh buttery, sweet, of fine flavor, but not best. Growth erect, strong; tree healthy and very productive.

FONTENAY JALOUSIE, (or Jalousie de Fontenay Vendee.) Full medium; obovate-pyramidal; pale, dull yellowish green, somewhat russeted; flesh melting and buttery, mild, rich, fine flavored.

BELLE LUCRATIVE, (or Fondante d'Automne.) Full medium, sometimes large; obovate, sometimes slightly pyriform; pale yellowish green, often slightly russeted; flesh, with a very fine texture, juicy and melting, and, when well grown and ripened, of an exceedingly delicate, rich, perfumed and excellent flavor; sometimes it is quite poor.

FLEMISH BEAUTY. Large; obovate, obtuse; skin slightly rough, with more or less reddish brown russet; flesh very melting and juicy, and mostly sweet, rich, and excellent. Growth strong and healthy, tree productive, and fruit always fair. Must be picked before full maturity.

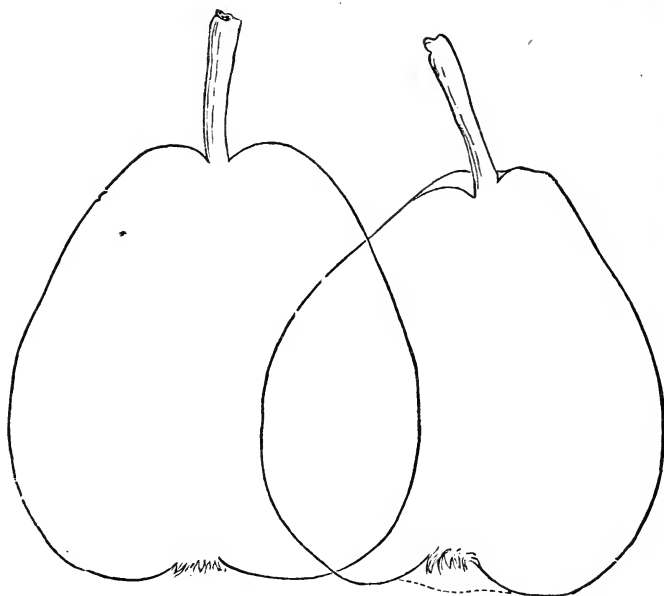
HOWELL. Full medium, or rather large; short pyriform; surface pale yellow; flesh melting and buttery, of a fine but not very high flavor. Bears very young; always productive; fair and uniform in size. A graft on an old tree on the grounds of Ellwanger & Barry, of Rochester, bore three pecks the third summer.

VAN ASSCHE, (or Van Assene.) Rather large; obtuse obovate; skin fair, smooth, dull yellow; flesh white, slightly coarse, buttery, melting and rich. New. Belgian. Productive and valuable.

DUCHESS D'ORLEANS, (or Beurré St. Nicholas.) Usually large; long pyriform; greenish yellow, sometimes bright red to the sun, more or less thinly russeted; flesh melting, buttery, rich; when well ripened, delicious. New, and promises to be valuable.

LOUISE BONNE OF JERSEY. Large; pyriform, somewhat oblong; smooth; yellowish green, with a brownish red cheek; flesh juicy, buttery and melting, of a rich, fine flavor, hardly first-rate, sometimes astringent. Very productive. One of the most valuable market pears. Succeeds best and grows with great vigor on the quince.

URBANISTE. Rather large; obovate-pyriform, obtuse; pale yellow; flesh melting, very buttery, with a fine, delicious, perfumed flavor when best, and sometimes a shade of acid, with second-rate flavor. Moderate bearer.



WHITE DOYENNE.

GRAY DOYENNE.

BEURRE BOSC. Large; distinct pyriform; nearly smooth; deep yellow, with russet patches; flesh juicy, buttery, rich, excellent. A regular, even bearer.

AUTUMN PARADISE, (or *Paradise d'Automne*.) Rather large; pyriform; surface uneven; yellowish orange, with some russet; flesh melting, very buttery, with a rich, high, excellent flavor. It resembles the last, but is more irregular in form, and is more melting and sprightly.

ONONDAGA, (or *Swan's Orange*.) Quite large; oval pyriform, short and obtuse; skin becoming a rich yellow, a little rough; flesh slightly coarse, moderately buttery and melting; flavor good, but not first-rate, often too acid and astringent. Very valuable for its strong growth, early bearing, and its large, uniformly fair fruit.

BEURRE D'ANJOU. Rather large; obtuse obovate, regular; greenish yellow, often clouded with russet; flesh fine grained, buttery, melting, with a high, rich, vinous, excellent flavor. A fine even bearer of uniformly perfect fruit. Very valuable.

DIX. Large; long pyriform; deep yellow when ripe, with numerous dots; flesh rather granular, rich, juicy, sweet, excellent, sometimes rather acid. A tardy bearer; shoots often thorny.

DUCHESS OF ANGOULEME. Very large; very obtuse pyriform; surface quite uneven; greenish yellow; flesh rather coarse, melting, buttery, juicy,

flavor often very fine, sometimes poor. Grows with the greatest vigor, and always best on quince stocks. Extra large and well ripened specimens have sold in market for fifty cents to one dollar each.

VIRGALIEU, (or *White Doyenné*, *St. Michael* of Mass., *Butterpear* of Pa.) Full medium; regular obovate; yellow, often with a faint blush; flesh very fine texture, melting, buttery, with a sweet, rich, excellent flavor. Possesses a higher reputation as a market pear, in western New-York and some other places, than any other sort; many trees yielding annually from twenty to thirty dollars worth of fruit.

GRAY DOYENNE. Nearly resembles the last, but perceptibly smaller and less blunt at the stem, and the whole surface covered with a rich cinnamon russet; flavor more perfumed and excellent.

DOYENNE BOUSSOCK. Resembles the Virgalieu, but larger, and not equal to it in quality.

FULTON. Rather small; roundish; whole surface smooth gray russet, becoming dark cinnamon; flesh half-melting, buttery, rich, sprightly, agreeable. Valuable. Tree very hardy and productive.

SHELDON. Large; roundish-obovate, very obtuse; nearly whole surface covered with dark russet on a greenish yellow skin; flesh juicy, rich, and excellent. From Wayne Co., N. Y.

OSWEGO BEURRE. Medium; obtuse obovate; regular; yellowish green, with some thin russet; flesh melting, juicy, and with a nearly sweet flavor. Tree vigorous, hardy, and productive.

BEURRE CLAIRGEAU. Large; pyriform; brownish green, russeted, sometimes red to the sun; flesh juicy and melting, with an agreeable sub-acid flavor. Growth strong; bears early. A new variety of high promise.

BEURRE DIEU. Large; short pyriform, sometimes nearly obovate; dull yellow, with many dots and some russet; flesh rather coarse, rich, sugary, buttery, juicy, fine. Best on quince stocks.

NAPOLEON. Above medium; pyriform-obovate; skin green, becoming yellowish; flesh uncommonly juicy, melting, moderately rich, very refreshing, sometimes astringent. Needs ripening in a warm room. Very productive, thrifty, hardy.

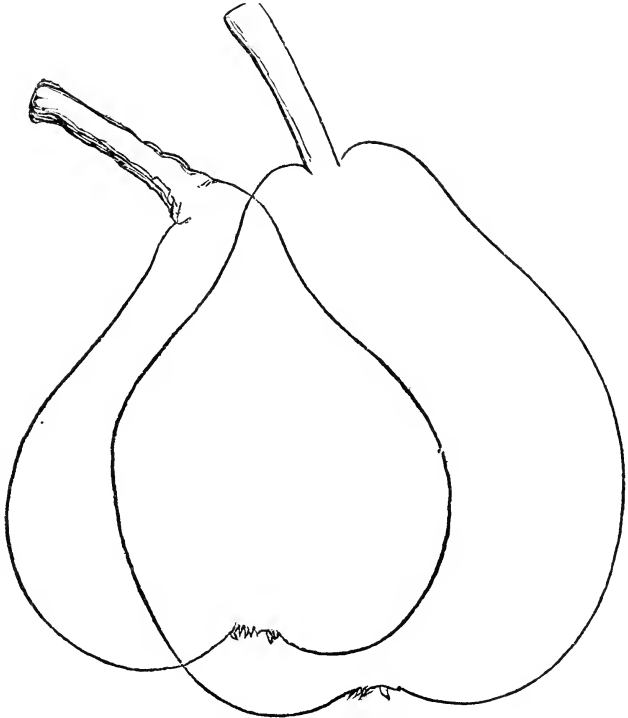
BERGAMOTTE CADETTE. Medium; round-obovate; greenish yellow, often slightly reddened and russeted; flesh melting and buttery, juicy, sweet, quite rich, slightly perfumed. Productive.

WINTER PEARS.

[The good quality of winter pears depends greatly on their ripening. If in too damp a cellar, they will rot; if in one too dry, they wither and never become mellow. As a general rule, winter pears should be kept in a cool apartment or cellar till near the usual time of maturity, when they should be brought into a warm room. In a few days they will be found to assume the golden yellow skin and the melting flesh which distinguish ripeness in our finest autumn pears. The warm temperature should be *uniform*, and the light excluded; for which reasons drawers are found best. Sorts which quickly ripen and become melting, must be kept cooler than those of a harder nature, or they will too soon decay.

It often happens that winter pears do not ripen well because they have not been well grown, and because they have not been fully developed by *rich cultivation*.]

VICAR OF WINKFIELD, (or *Le Curé*.) Quite large, long pyriform; smooth, pale yellow, often with a dull reddish cheek; flesh juicy, buttery, with a good, second rate flavor—sometimes a little astringent. Growth irregular or straggling—leaves nearly round. Ripens late autumn and early winter, for about three months, which, with its productiveness, fine qualities for cooking, and uniformly fair fruit, makes it very valuable.



BEURRE D'AREMBERG.

GLOUT MORCEAU.

AREMBERG, (or *Beurré d'Aremerg*.) Medium or large, short pyriform, stalk thick and fleshy; skin thick, greenish yellow, partly russeted; flesh yellowish, melting and juicy, with a high, vinous, rather acid flavor. A great bearer—and keeps with little care. Late autumn and early winter.

GLOUT MORCEAU. Large, short obtuse pyriform; greenish; flesh white, fine grained, buttery and melting, sweet, of fine flavor. Early winter. Best on quince.

LAWRENCE. Medium, obovate, slightly pyriform; skin yellow, flesh melting, sweet, rich, high flavored. A good grower, fine bearer, and very valuable pear for market. Early winter.

BEURRE LANGELIER. Large, pyriform, obtuse; pale yellow with a slight blush—flesh fine grained, melting and juicy—flavor rich and fine. First half of winter.

WINTER NELIS. Medium, roundish obovate, sometimes slightly pyriform; yellowish green, much russeted—flesh fine grained, buttery and very melting, rich, sweet or slightly vinous, perfumed and of excellent flavor. Growth slender and very straggling, productive, and probably the highest flavored of all winter pears.

PASSE COLMAR. Medium or rather large, short pyriform, pale yellow; flesh fine grained, buttery, melting, and sweet,—when well grown, and well ripened, of a delicious flavor. Overbears. Early winter.

DOYENNE D'HIVER. Large, pyriform, yellow, with a tinge of brown to the sun; flesh melting, buttery, rich. Growth upright and vigorous. Keeps mostly through winter.

PRINCE'S ST. GERMAIN. Medium, obovate, sometimes slightly pyriform obtuse; partly russeted on a green skin and dull red to the sun; flesh juicy and melting, slightly vinous, with an agreeable and fine flavor. Ripens through winter. A good variety.

EASTER BEURRE. Large, obtuse obovate; yellowish green, often a broad, brown check; flesh, when well grown and ripened, very buttery, juicy, of an excellent, first-rate flavor. Best on quince. Needs high warm culture at the north. The best late pear, ripening in spring.

A good selection of summer, autumn, and winter pears, will furnish a succession of this delicious fruit from midsummer till late in spring—instead of a supply for a week or two, as too often happens, from a few trees of common sorts.

PEACHES.

FREE STONES OR MELTERS—IN THE ORDER OF RIPENING.

[Varieties are distinguished in part by their leaves and flowers. The cut leaved sorts, (always without glands) are shown by Fig. 1, the small globose glands, by fig. 2; and the large, or reniform glands, by fig. 3.

The large flowers are represented by fig. 4, and the small, by fig. 5.]

EARLY ANNE. Small, round, greenish white—flesh white to the stone—a mild, pleasant, vinous flavor. Cut-leaved, and large flowered. Tender and of slow growth—but valuable for its earliness.

EARLY TILLOTSON. Medium, round, mostly dark red; flesh partly adhering to the stone, juicy and high flavored. Flowers small, leaves cut, and

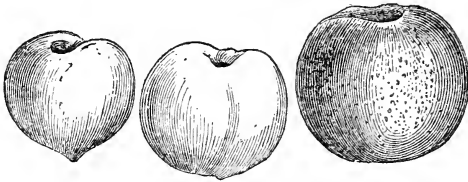


FIG. 1.

FIG. 2.

FIG. 3.

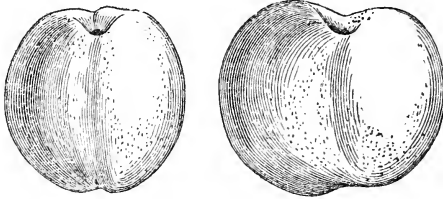
COMPARATIVE FORMS OF PEACHES,
ACCURATELY REDUCED TO A SCALE OF ONE-HALF THE DIAMETER.



NUTMEG.

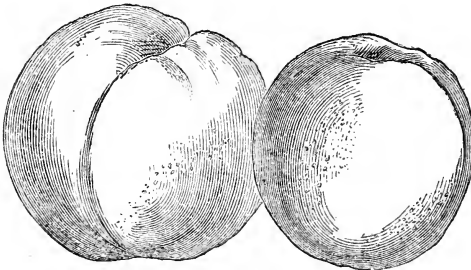
EARLY ANNE.

EARLY TILLOTSON.



SERRATE EARLY YORK.

LARGE EARLY YORK.



JAQUES' RARERIPEC.

EARLY CRAWFORD.

apt to mildew—often fails at the north, but unexcelled in Virginia, Kentucky, and other more Southern States. Varies sometimes 2 or 3 weeks in ripening on the same tree. A great bearer.



FIG. 4.



FIG. 5.

SERRATE EARLY YORK. Medium, roundish oval, mostly dark red—flesh uncommonly juicy—rich, with a faint mingling of acid. Stone red. Leaves cut, and flowers large.

The three preceding usually ripen in New-York from two to four weeks before the close of the summer months.

COLE'S EARLY RED. Medium, roundish, with a fine red cheek; flesh moderately juicy, pleasant, good, but not of first quality. Leaves with globose glands, growth vigorous, tree productive.

EARLY NEWINGTON FREESTONE. Medium, roundish, white, dotted and streaked with red, and with a rich red cheek; flesh at first adhering, afterwards partly separating from the stone—juicy, rich, fine.

COOLEIDGE'S FAVORITE. Full medium, roundish, skin nearly white in the shade, with a broad very brilliant red cheek to the sun; one of the most showy of all peaches; flesh very juicy and melting, with a rich, faintly acid flavor. Very productive, hardy, and valuable. Glands globose, flowers small.

GROSSE MIGNONNE. Rather large, roundish, with a deep red cheek, with a juicy, rich, and high flavor. Flowers large, glands globose.

LARGE EARLY YORK. Large, roundish, sides full, nearly white in the shade, full deep red in the sun—flesh very fine grained, very juicy, with a mild, rich, excellent flavor. Flowers small, glands globose. Very productive and valuable.

GEORGE THE FOURTH. Large, round, deep red to the sun, flesh juicy, rich, excellent. Much resembles the last, but ripens a little later, more moderate bearer, higher flavored, and branches rather more spreading.

WHITE IMPERIAL. Rather large, roundish, nearly white, a little tinged with purple to the sun; very juicy, with a mild, excellent flavor. Fine at the north—often worthless south.

BREVOORT. Medium or large, round, deep red to the sun, flesh rather firm, rich, sweet, and high flavored. Glands reniform, flowers small.

BARNARD, (or Yellow Alberge, erroneously.) Large, deep yellow, with a dark, rich red cheek; flavor fine; shoots rather spreading—tree very hardy and productive. Glands globose, flowers small.

CRAWFORD'S EARLY. Very large, has measured over ten inches round, roundish oval, light yellow, with a broad reddish cheek; flesh yellow, juicy, vinous, fine, but not fully first rate. Productive, hardy, and succeeds everywhere. Glands globose, flowers small.

BERGEN'S YELLOW. Quite large, round, color deep orange, with a broad red cheek; flesh juicy, rich, and excellent. Probably the finest of all yellow peaches. Growth and productiveness, moderate. Glands reniform, flowers small.

JACQUES' RARERIPPE. Very large, roundish, one side larger with a deep suture, yellow shaded with deep red; flesh deep yellow, red at the stone, of good but not highest flavor. Shoots rather spreading. Glands small reniform, flowers small.

NIVETTE. Large, roundish, slightly oval, surface rather even, yellowish green, with a faint red cheek, flesh greenish white, reddish at the stone, juicy, melting, and rich. An excellent peach for the middle season of ripening. Glands globose, flowers small.

MORRIS WHITE. Rather large, roundish oval, skin rather downy, pale creamy white at maturity, flesh wholly white, free from the drab stone, melting, juicy with a good flavor, hardly first rate north, better in the middle states, and popular everywhere. Glands reniform, flowers small.

OLDMIXON FREESTONE. Large, roundish, slightly oval, pale yellowish white, with a marbled red cheek, flesh deep red at the stone, tender, rich, excellent. Fine in all localities. Glands globose, flowers small.

PRESIDENT. Large, roundish, very downy, yellowish white, with a dull red cheek, flesh deep red at the stone, juicy, with a fine flavor, partly adhering to the stone. Glands globose, flowers small.

RED-CHEEK MELOCOTON. Large, roundish oval, with a point at the apex; yellow, with a deep red cheek, flesh juicy, with a good but not first rate flavor. Much valued as a market fruit. Glands globose, flowers small.

DRUID HILL. Large at the south, medium north, roundish, surface nearly white in the shade, with a fine red cheek, flesh very juicy, rich, and excellent. A fine late peach.

CRAWFORD'S LATE. Very large, roundish, sometimes slightly oval, deep yellow with a red cheek, flesh rich and juicy, nearly first rate. A valuable late variety. Glands globose, flowers small.

CLINGSTONES.

OLDMIXON CLING. Large, roundish oval, yellowish white, with a dotted red cheek; juicy, rich, excellent. Glands globose, flowers small.

LARGE WHITE CLINGSTONE. Large, round, white, dotted with red, or with a red cheek, juicy, sweet, rich, and high flavored. Glands globose, flowers small.

OLD NEWINGTON. Resembles Oldmixon, but not so good, and differs by its cut, glandless leaves.

LEMON CLING. Large, oblong oval, with a point at the apex, deep yellow, with a brownish red cheek, flesh firm, rich, vinous, sub-acid, second rate. Productive, hardy. Glands reniform, flowers small.

BLOOD CLING. Quite large, roundish oval, downy, dark, dull-purplish red, flesh deep red throughout, firm, only valuable for culinary purposes.

HEATH. Very large when not crowded, round when large, oval when small, downy, nearly white, very juicy, melting, sweet, with a high, rich, excellent flavor. Glands reniform. Fails to ripen far north, and sometimes poor far south.

NECTARINES.

[The nectarine, being nothing but a peach with a smooth or glossy skin like that of a plum, requires special protection from the curculio. When well grown, it is one of the most beautiful of all fruits, but successful crops are not common.]

HUNT'S TAWNY. Rather small, roundish oval, with a dark red cheek on pale orange, flesh orange. Quite early, but the leaves being cut and glandless, it often mildews badly.

EARLY VIOLET. Medium, roundish, dark purplish red, flesh whitish, much reddened at the stone, flavor very fine. Glands reniform, flowers small.

ELRUGE. Medium, roundish oval, mostly dark reddish purple, flesh greenish white, light red at the stone, fine flavored. One of the best.

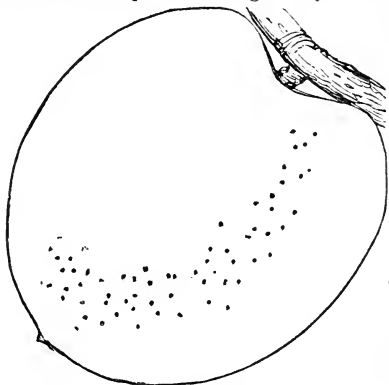
BOSTON. Large, very handsome, roundish oval, bright yellow and deep red, flesh yellow, pleasant, but not high flavored.

DOWNTON. Size medium, roundish oval, pale green and violet red, melting, rich, excellent.

STANWICK. A new foreign sort of great excellence, but requiring a hot-house for ripening it is of little general value. When first introduced small trees sold at \$50 each.

APRICOTS

[The apricot is nearly allied to the plum, while it has a slightly downy skin like the peach. Being nearly a month earlier than early peaches, it



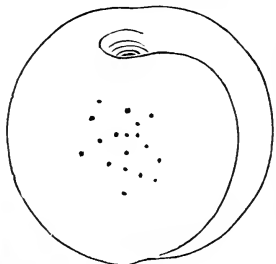
LARGE EARLY.

is a fruit of great value, but the tree is liable to disease of the bark, and the fruit is much attacked by the curculio. To prevent the former, let the branches be low and plant on a dry sub-soil; to destroy the curculio, turn in pigs and poultry when the young fruit begins to drop, and jar down and catch on sheets.]

LARGE EARLY. Full medium, oblong, pale orange, with a spotted orange check, rich, juicy.

EARLY GOLDEN. Small, smooth, wholly pale orange, sweet, good, free from the stone. Early, at mid-summer. Hardy and productive.

BREDA. Rather small, roundish, orange, with a reddish cheek, flesh deep orange, free from the stone, rich and high flavored. Growth hardy and vigorous, tree productive and valuable. Ripens at the north soon after or about mid-summer.



BREDA.

MOORPARK. Large, nearly round, orange with a red cheek, flesh free from the stone, yellowish orange, quite juicy, rich, excellent. Ripens soon after the Breda, but less hardy. Stone with a hole lengthwise under one edge.

PLUMS,

NEARLY IN THE ORDER OF RIPENING.

PRIMORDIAN, (or *Jaune Hative*.) Small, obovate, necked; pale clear yellow; with a rather sweet, mild, good flavor, very free from the stone—shoots very downy—growth slow, tree very productive. Valuable for its extreme earliness, ripening before wheat harvest.

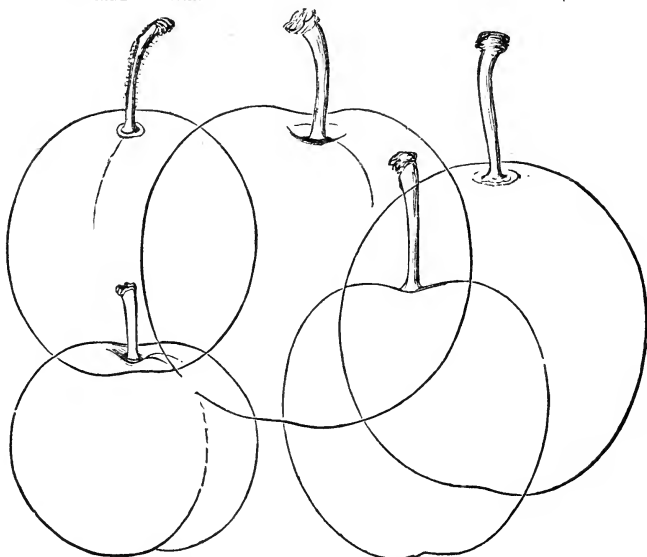
IMPERIAL OTTOMAN. Nearly medium, oval, pale greenish yellow, marbled, juicy, sweet, excellent. Ripens two weeks after Primordian.

HOWELL'S EARLY. Rather small, oval, light brown, flesh juicy, sweet, perfumed, free from the small, oval stone. Shoots slender, grey, downy. Productive.

IMPERIAL OTTOMAN.

WASHINGTON

JEFFERSON.



GREEN GAGE.

IMPERIAL GAGE.

PEACH PLUM. Very large, roundish oblate, color light dull red—flesh rather coarse, juicy, sprightly—tree very productive—handsome and showy, valuable for early market.

EARLY ORLEANS. Medium, round, oval, reddish purple, flavor mild, rich. The *Orleans* is larger and later.

EARLY ROYAL. Medium, roundish, light purple, flavor rich, excellent—nearly free from the stone. Shoots very downy.

PRINCE'S YELLOW GAGE. Medium, oval, golden yellow, slightly clouded; flesh yellow, rich, sugary; shoots smooth.

HUDSON GAGE. Medium, oval; yellow, streaked with faint green, bloom thin, flesh juicy, rich, sprightly, excellent—nearly free from stone.

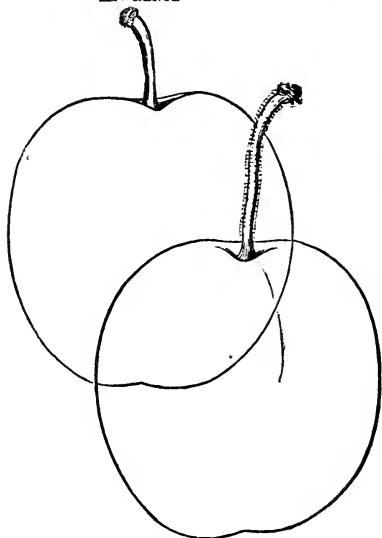
GREEN GAGE. Rather small, full round; green, becoming yellowish green, with brown dots and network near the stem; flesh pale green, melting, juicy, exceedingly sweet and rich—unequaled in flavor by any other plum. Shoots smooth, short, growth slow. There are many worthless and spurious sorts, of this name.

RED GAGE. Hardly medium, round-ovate, brownish red; flesh free from the stone, juicy, melting, with a mild, sweet, rich, agreeable and refreshing flavor.

LAWRENCE, (or Lawrence Gage.) Rather large, roundish oval, yellowish green; flesh, melting, juicy, rich, excellent, free from the stone. A very valuable sort.

LOMBARD (or Bleeker's Scarlet.) Medium or rather large, round-oval, violet red, flesh pleasant, of fine but not rich flavor, adhering to the stone.—Hardy and very productive.

LAWRENCE



BLEEKER'S GAGE.

WASHINGTON, (or Bolmar's.) Quite large, roundish oval, yellowish green, sometimes with a blush; flesh rather firm, sweet, mild, moderately rich, free from stone. Growth vigorous, leaves large. A general favorite—but apt to rot.

COLUMBIA. Quite large, nearly globular, brownish purple, flesh rather coarse, free from the stone—of good flavor.—Handsome and showy. Tree spreading.

JEFFERSON. Large, oval, greenish yellow, becoming golden yellow, sometimes faintly reddened; flesh nearly free from the stone, very juicy, luscious, excellent.

SMITH'S ORLEANS. Large, oval, reddish purple becoming very dark; flesh firm, juicy, rich—tree vigorous and productive—popular and profitable.

RED DIAPER. Large, oval, slightly necked; reddish purple, flesh pale green, melting and juicy, with a fine flavor, free from the small stone. Growth rather slow.

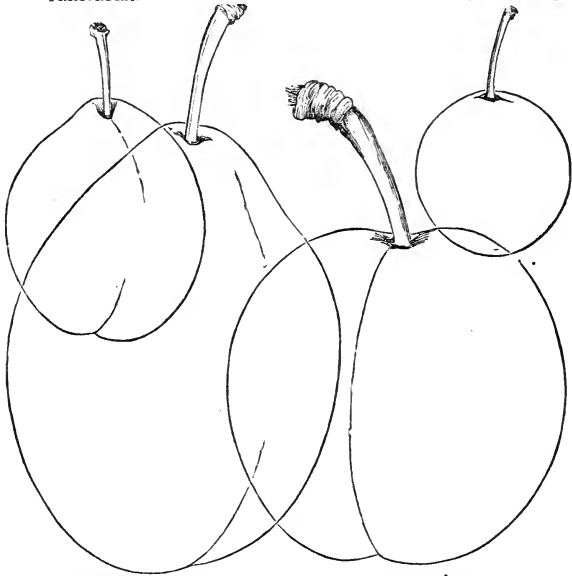
IMPERIAL GAGE. Rather large, oval, green and yellow, marbled, flesh juicy, melting, sweet and rich,—sometimes poor on heavy soils,—mostly free from the stone. Growth tall, tree very productive—highly esteemed.

DUANE'S PURPLE. Very large, oval, reddish purple, flavor moderate,—showy and productive.

PURPLE FAVORITE. Medium, roundish-obovate; brownish purple; flesh juicy, tender, melting, rich, sweet, and excellent, free from the small, roundish stone. Shoots smooth, short, growth slow.

PRIMORDIAN

WHITE DAMSON.



COE'S GOLDEN DROP.

HULING'S SUPERB.

BLEECKER'S GAGE. Medium in size, roundish oval, yellow; flesh rich, sweet, luscious, partly free from the stone.

BINGHAM. Large, oval, deep yellow, with red spots to the sun; flesh juicy, rich and fine—adheres to the stone. Handsome, productive and valuable.

MCLAUGHLIN. Rather large, roundish; russet yellow with thin red, flesh rather firm, sweet, rich, and of excellent flavor—adheres to the stone. A new valuable sort from Maine.

HULING'S SUPERB. Quite large, round oval, dull greenish yellow, flesh rather firm, adhering, rich, brisk, excellent. Leaves very large; moderate bearer.

ROYALE. Medium, round-oval, reddish purple, bloom very thick; flesh rather firm, with an excellent flavor. Shoots very downy.

PURPLE GAGE. Medium, roundish, skin violet, bloom light blue; flesh rather firm, rich, sugary, of very high and excellent flavor, free from the stone. Growth like the Green Gage. The genuine sort is rare—a spurious sort is often cultivated.

GERMAN PRUNE. Large, long oval, curved or swollen on one side, with a long neck; skin purple; flesh rather sweet, of moderate flavor, free from the long, curved stone. Valuable for drying and preserving.

REINE CLAUDE DE BAVAY. Round oval, greenish yellow—flesh rather firm, juicy, sugary, rich—adhering to the stone. A new Belgian sort.

ST. MARTIN'S QUETSCH. Medium, ovate, pale yellow, flesh juicy, rich, excellent—keeps long—great bearer and profitable.

COE'S LATE RED, (or Red St. Martin.) Medium, roundish, light purplish red; flesh rather firm, crisp, vinous, rich. A valuable late plum.

WHITE DAMSON, (or Yellow Damson.) Quite small, oval, pale yellow, dotted with reddish brown; flesh rich, sub-acid, agreeable. A great bearer, and hangs long.

COE'S GOLDEN DROP. Very large, oval, necked; yellow, often dotted red; flesh rather firm, rich, sweet, closely adhering to the stone. Does not always ripen at the north.

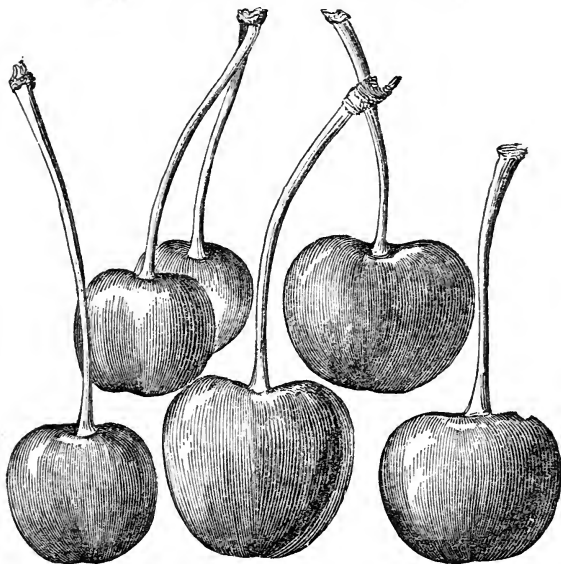
FROST GAGE. Small, round-oval, deep purple, juicy, sub-acid, becoming sweet, of fine, but not the highest flavor; valuable for its lateness, hardness, and great bearing.

ICKWORTH IMPERATRICE. Above medium, obovate, purple, flesh juicy, sweet and rich, very late, keeping into winter, becoming dryer and sweeter.

CHERRIES.

MAY BIGARREAU.

KNIGHT'S EARLY BLACK



EARLY PURPLE GUIGNE.

BLACK TARTARIAN.

BLACK EAGLE

HEART AND BIGARREAU CHERRIES—IN THE ORDER OF RIPENING.

EARLY PURPLE GUIGNE. Size medium, round-heart-shaped, dark red, becoming nearly black; flesh tender, juicy, rich, sweet. Shoots spreading, leaves drooping—the best very early variety.

MAY BIGARREAU, (or Baumann's May.) Rather small, nearly round when ripe; deep red, becoming black, flesh rather sweet, not high-flavored.

BELLE D'ORLEANS. Size full medium, pale red, flavor excellent—valuable. New, from France.

DOCTOR. Medium, round-heart-shaped, light or yellowish red, flesh tender, sweet, fine-flavored. Raised by Dr. Kirtland, Ohio.

GOVERNOR WOOD. Large, heart-shaped, light red, tender, flavor excellent—unexcelled among cherries. Raised by Dr. Kirtland.

COE'S TRANSPARENT. Full medium, round, skin thin, pale amber, reddened in the sun with pale spots—melting, sweet, excellent.

BLACK TARTARIAN. Quite large, heart-shaped, surface wavy, black when ripe; flesh sweet, mild, with a very fine flavor.

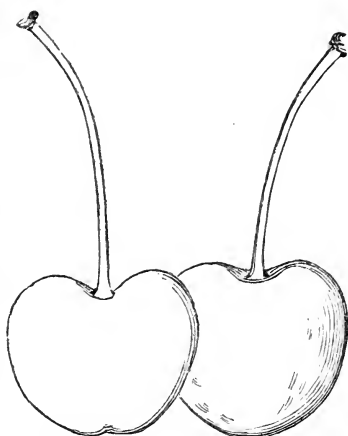
Growth strong, upright; a great bearer—and generally popular.

KNIGHT'S EARLY BLACK. Large, roundish heart-shaped, nearly black when ripe, with a very rich, high flavor.

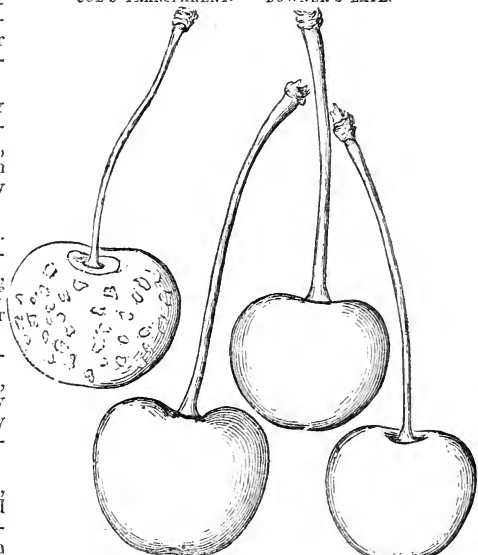
AMERICAN HEART. Full medium, roundish heart-shaped, light red, flesh half tender, with a rather sweet fine flavor.

GREAT BIGARREAU. Very large, heart-shaped, very dark red or nearly black, flavor excellent.

ELTON. Large, pointed heart-shaped—rather oblong, yellow with red; flesh firm, becoming rather

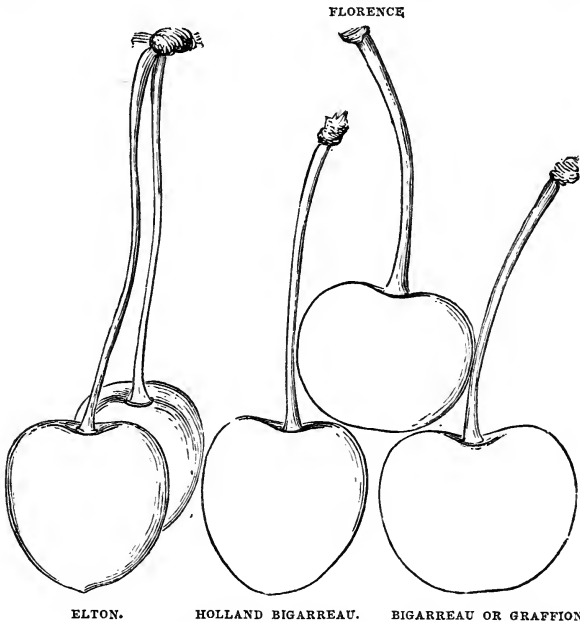


ROCKPORT BIGARREAU NAPOLEON BIGARREAU.
COE'S TRANSPARENT. DOWNER'S LATE.



DOWNTON.

SPARHAWK'S HONEY.



ELTON.

HOLLAND BIGARREAU.

BIGARREAU OR GRAFFION.

er tender, rich and high-flavored. Growth spreading—leaf stalks dark purple.

ROCKPORT BIGARREAU. Large, round-heart-shaped, clear red, flesh firm, sweet and rich, usually excellent, but often variable. Dr. Kirtland, Ohio.

BURR'S SEEDLING. Rather large, heart-shaped, a fine clear red, flesh half tender, sweet, rich, with a fine flavor. Growth very handsome and vigorous.

YELLOW SPANISH, (Bigarreau, or Graffion.) Very large, round-heart-shaped, very smooth, waxy yellow with a handsome red cheek—flesh firm, with a fine, rich flavor. Very popular—a moderate bearer in some localities.

HOLLAND BIGARREAU: Large, oblong heart-shaped, pale yellow with bright red to the sun—flesh firm, with a rather sweet and fine flavor.

BLACK EAGLE. Rather large, roundish heart-shaped, nearly black, with a very rich, high, excellent flavor. Growth rather spreading, resembling that of the Yellow Spanish.

DOWNTON. Large, roundish heart-shaped, a light yellow stained with red; flesh tender, rich, delicious.

NAPOLEON BIGARREAU. Very large, heart-shaped, skin pale yellow, spotted and shaded with deep red; flesh very firm, with a fine but hardly first-rate flavor.

SPARHAWK'S HONEY. Size medium, round-heart-shaped, regular, a bright red when ripe; flesh juicy, delicate, sweet, with a very agreeable flavor. A great bearer.

FLORENCE. Large, roundish heart-shaped, smooth, amber yellow with a red cheek, flesh firm, rather sweet, fine—resembling Yellow Spanish but smaller and later.

DOWNER, (or Downer's Late.) Medium, round-heart-shaped, smooth, red, flesh melting, rich, very high flavored—hardy, productive, and very valuable.

DUKES AND MORELLOS.

MAYDUKE. Large, roundish, heart-shaped, nearly black and flesh dark purple when ripe; very juicy, rich, acid, excellent. Often varies much in ripening. Hardy everywhere.

BELLE DE CHOISY. Medium, round, skin thin, pellucid, yellowish red, with a fuller red in the sun; very tender, melting, with a fine, sub-acid, delicate flavor. Moderately productive.

EARLY RICHMOND, (or Kentish.) Hardly medium in size, round, color full red, very juicy, acid, moderately rich—hangs long and improves. Very productive, hardy, certain—fine for cooking.

REINE HORTENSE. Large, bright red, tender, juicy, slightly acid, flavor fine. Hangs long.

CARNATION. Large, round, yellowish red, mottled, with a mild, acid, rich and fine flavor.

BELLE MAGNIFIQUE. Quite large, roundish heart-shaped, a fine rich red, flavor mild, rather acid, rich; slow grower, but great bearer. Very valuable.

PLUMSTONE MORELLO. Large, roundish, heart-shaped, deep red; flesh reddish, of rich acid flavor. Stone large.

THE STRAWBERRY.

Modern cultivators divide all strawberries into two distinct classes, one being termed *staminate*, (or male,) in



FIG. 1.

STAMINATE.



FIG. 2.

PISTILLATE.

(figs. 1 and 2,) represent the usual appearance of these two kinds of



FIG. 3.

PISTILLATE FLOWER, MAGNIFIED.



FIG. 4.

STAMINATE FLOWER, MAGNIFIED.

flowers; and figs. 3 and 4, magnified portions of the same, fig. 4 exhibiting

a part of the flower of the Large Early Scarlet, and fig. 3 the same of Hovey's Seedling; *a* being the stamens, and *b* the pistils. By the use of a microscope it will be found that the former is abundantly supplied with pollen or fertilizing dust, while the latter is nearly or totally destitute. Hence Hovey's Seedling or any other pistillate variety, can never, or but very imperfectly, fertilize its own flowers, and the impregnation must be derived from a staminate sort.

A few staminates will fertilize many pistillates; and to prevent the intermixture of the two sorts by runners, they may be planted in alternate strips, as indicated in the following diagram. S representing staminate and P pistillate varieties.

P P P P	S	P P P P	S	P P P P	S S S S
P P P P	S	P P P P	S	P P P P	S S S S
P P P P	S	P P P P	S	P P P P	S S S S
P P P P	S	P P P P	S	P P P P	S S S S
P P P P	S	P P P P	S	P P P P	S S S S
P P P P	S	P P P P	S	P P P P	S S S S
P P P P	S	P P P P	S	P P P P	S S S S
P P P P	S	P P P P	S	P P P P	S S S S

The principal requisite for success in the management of these beds, is clean cultivation, keeping the runners down by hoeing or treating them precisely as weeds.

VARIETIES

LARGE EARLY SCARLET. Size medium, sometimes large, roundish ovate, bright scarlet, of a rich, high flavor. Ripens at the north the first week or two in summer. Staminate.

BURR'S NEW PINE. Large, roundish conical, regular in form, pale red, flesh very tender, of a mild and very excellent flavor. A great bearer. Pistillate. Quite early.

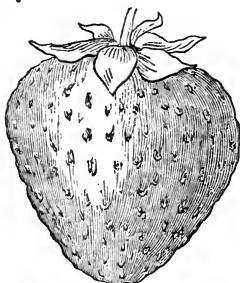
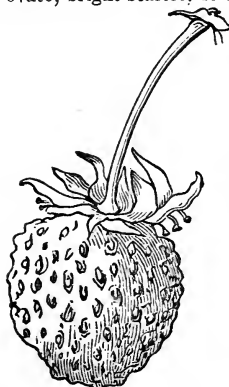
BOSTON PINE. Large—roundish—deep red, rather firm with a rich flavor. Needs good cultivation. Staminate. Early.

WALKER'S SEEDLING. Large, very dark red, with a fine flavor—productive and valuable. Staminate.

BLACK PRINCE.

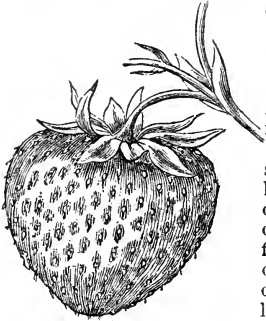
LARGE EARLY SCARLET. Large, roundish, of a very dark red, nearly black when ripe. Often very fine, but very variable—watery in wet weather—must be fully ripe. Pistillate.

HOVEY'S SEEDLING. Very large, roundish conical, color a fine scarlet, flesh rather firm, good but not high flavored. Often quite productive—and fine for market. Pistillate.



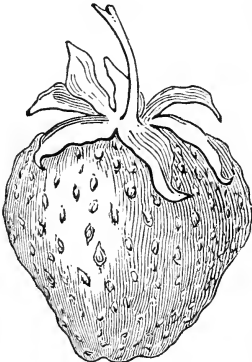
BURR'S NEW PINE.

IOWA. Rather large, bright scarlet, acid, flavor moderate, hardy, strong, and productive; being a staminate variety, much valued as a fertilizer, as well as for market.



WALKER'S SEEDLING.

LING. A large new variety,



HOVEY'S SEEDLING.

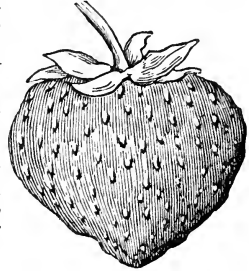
A very handsome strawberry, and a fine bearer. Rather late. Raised by Ellwanger & Barry, Rochester.

HUDSON, (or *Old Hudson*.) Size medium, roundish oval, rich red, firm, acid. A great bearer, and celebrated for market at Cincinnati. Pistillate.

The Rival Hudson, a new variety, resembles this, but is darker and rather superior.

CRIMSON CONE. Size medium, conical, color bright scarlet, firm, flavor rich, rather acid—hardy and vigorous—in most instances quite productive. Pistillate. Late.

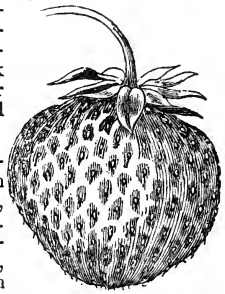
MOYAMENSING. Rather large, roundish conical—deep crimson, flavor fine, plant vigorous and productive. Pistillate. New. Originally from Pennsylvania.



BLACK PRINCE.

HOOKER'S SEEDLING. Originated at Rochester—dark red, resembling Black Prince, but superior in size, flavor, and productiveness.

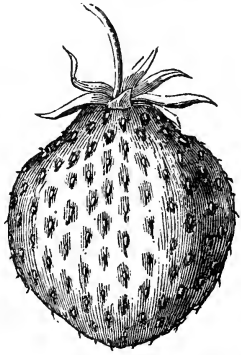
McAVOY'S SUPERIOR. Large, often quite large, dark red, flesh soft, flavor fine. Berries often imperfect. A valuable sort, but does not sustain its high Cincinnati reputation at the North and East. Pistillate.



IOWA.

GENESEE.—

Large, roundish, slightly necked, bright crimson, with a mild but



GENESEE.

G R A P E S .

NATIVE.

CONCORD. Bunches very large; berries large, with a thick bloom, dark purple, round; flavor good, but not first-rate. A very showy and good grape, quite early, ripening some weeks before the Isabella. Will probably prove valuable for market. A new Massachusetts variety.

DIANA. A seedling from the Catawba, but paler and much smaller. Bunches and berries rather small, of a pale greyish red, almost without pulp, sweet, juicy and rich. A valuable and excellent new Massachusetts sort, nearly as early as the Concord.

YORK MADEIRA. Bunches and berries medium or rather small, juicy, sweet, and rich—resembles Isabella, but earlier, smaller, and freer from pulp. This was confounded by Downing with the Alexander, a very different and greatly inferior variety. A moderate grower.

CLINTON. Bunches and berries rather small, black, pulpy, juicy, with a rich, rather acid, and before fully ripe a harsh flavor. Very hardy, and a free grower.

ISABELLA. Bunches medium, berries round oval, dark purple, tender, with some pulp, and with a sweet, rich, slightly musky, excellent flavor. Vigorous, and very productive. The most popular sort at the North.

CATAWBA. Bunches medium or rather large, berries large, pale red, deeper in the sun; flesh slightly pulpy, juicy, sweet, rich, aromatic. Ripens well in the middle and western States, and is the great favorite at Cincinnati.

FOREIGN.

[There are many exotic varieties cultivated in graperies, but only a very few of the most common and best can be noticed here—some others being nearly or quite equal to them in quality.]

The *Black Cluster* is remarkable for its small very compact bunches, of small grapes, the flavor sweet and good. It is hardy, and will succeed in the open air. The *Early White Malvasia* is another sort succeeding tolerably well in open air; the bunches are rather large, the berries small, yellowish white, juicy, with a nearly sweet, agreeable flavor. The *White Sweetwater* has bunches of medium size and round berries, which are yellowish green, and are crisp, watery, sweet, rich, and very pleasant. It needs a glass structure, the berries soon becoming mildewed after the first or second year in open air. The *Royal Muscadine* or *Chasselas*, resembles the Sweetwater, but has larger berries, and a stronger growth. The *Black Hamburg* is the most highly esteemed of all exotic grapes for house culture—the bunches and berries are large, becoming nearly black when ripe, the flavor sugary and rich. The *White Muscat of Alexandria* has large, loose bunches, and large oval berries, of a pale amber color when ripe—rather firm, crisp, and with a rich and delicious flavor. It is best when ripened with fire heat. The *Grizzly Frontignan*, which ripens before, and the *White Frontignan*, which ripens after the Hamburg, are valuable foreign sorts—the former with medium sized, round, reddish gray berries, and the latter with rather large, yellowish berries, both with fine flavor. The *Black Frontignan*, is also a rich, and excellent, and productive grape.

CULTURE OF THE GRAPE.

PROPAGATION.

The vine is propagated by *seeds, layers, cuttings*, and by *grafting*.

Seeds are planted only for obtaining new varieties, by cross-fertilization.

Layers furnish a very sure mode of obtaining large well rooted plants the same autumn after the young shoots are buried in the soil, which may be done a little before midsummer.

Cuttings are less certain of success than layers, but are usually more convenient, and admit of more rapid multiplication. They should be a foot long and planted sloping, and should just reach up to the surface of the soil, which should be rich, deep, and rather moist. They strike more readily under a frame of glass.

Grafting is sometimes useful for changing large vines of worthless sorts to a better, and bearing fruit in less time than a young vine on its own roots. To prevent bleeding, the work must be done below the surface in the root; or after the leaves are expanded, the scions having been preserved in a cool cellar for this purpose.

SOIL.

“The essence,” says Downing, “of all that can be said in grape culture respecting soil, is that it be *dry and light, deep and rich.*” A dry bottom is highly essential; hence a bed of stones, shells and bones, eighteen inches beneath the surface, has been very useful. The manure must be in some degree adapted to the nature of the soil, but generally, vegetable mould or muck, with a portion of ashes intermixed, is one of the very best.

PRUNING AND TRAINING.

A well pruned vine will not only produce *earlier* fruit, but it will be larger, and incomparably superior, than on one left to straggle without care.

There are two leading principles that should be always observed in pruning the grape, whatever may be the particular mode adopted. The first is, that the vine *always bears its fruit on the present year's shoots*, which have sprung from buds on the previous year's growth, (Fig. 1.) Secondly, that the full growth and perfect ripening of the *fruit* depends wholly on healthy, well developed *leaves*, which supply food to the forming berries, and hence the growth must not be allowed to become so thick that the leaves cannot properly develop themselves, nor should the vines be trimmed so closely that there shall not be leaves enough for the perfection of the fruit. These two facts must be always borne in mind by those who would raise the best grapes. These being understood, we now proceed to the details of pruning.

FIRST YEAR. When a vine is first procured from the nursery in spring, it is usually furnished with several irregular shoots of the previous summer's growth, resembling fig. 2. These should be all closely pruned to the older wood, leaving only the strongest, and this should be cut back so as to leave but two or three buds, fig. 3. These buds will grow, and when only a few inches in length, the strongest shoot must be selected, and the others rubbed off. This single shoot is allowed to grow till about the first



FIG. 2. VINE AS OBTAINED FROM NURSERY.



FIG. 3. SAME, PRUNED, WHEN SET OUT.

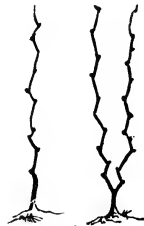


FIG. 4.

FIG. 5.

END OF FIRST END OF SEC-
SUMMER. OND SUMMER.

FIG. 1.—VINE IN BEARING—PORTION REPRESENTING THE BEARING BRANCHES FROM THE SIDES OF A LAST YEAR'S VINE.

of autumn. After this period, the new leaves and wood that are formed, cannot mature perfectly, and their growth will be in some degree at the expense of the matter forming in the previous portion of the shoot. Its growth should be therefore stopped by pinching off the end. This will assist in maturing and strengthening the vine. Any *side-shoots* that appear during the summer, or any smaller shoots that happen to spring up from the stump, should be kept rubbed off as fast as they appear, as they withdraw and divide the nourishment received from the roots.

SECOND YEAR. The single strong shoot made the first year, (fig. 4,) should be cut down to three or four buds, only *two* shoots from which should be allowed to grow, the others being rubbed off, and the lateral shoots, should any appear, being removed as already described. The autumnal shortening of the two shoots as above stated is also necessary.

The judgment of the cultivator will teach him, that if the transplanted vine is small or weak the first year, and makes but a few feet growth, the same first year's process must be gone over again the second year, until the vine becomes strong enough to send up a shoot at least some nine or ten feet in length, when the "second year's" operation may be commenced upon it. Any fruit which sets should be removed, as the vine is not yet strong enough to bear and support a vigorous growth at the same time.

THIRD YEAR. The two shoots made during the second year, (fig. 5,) are now extended each way horizontally, and fastened to the newly erected trellis. This may be done at the end of the second year, or early in the spring of the third. These horizontal branches, termed *arms*, are to

be cut back at the same time, so as to leave two good buds on each, so that four shoots, two on each side, may spring up from them; the same care as formerly being observed to remove suckers or supernumerary shoots and side branches, and to give the autumn shortening. None of the fruit bunches should be allowed to remain. The four shoots, as they advance in growth, should be tied to the trellis, in the position that the figure represents.

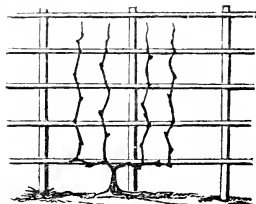


FIG. 6.—GROWTH AT END OF THIRD SUMMER.

to remain and ripen; the ends of these spurs or side-shoots being pinched off, as shown at *c*, fig. 1. All other bunches should be rubbed off as soon as they form. The other two or outer shoots, should, early in the same spring, (or late the previous autumn,) be laid down horizontally so as to form an extension or continuation of the *arms*; and at the same time be shortened to within about two feet of the ends of the previous arms. Two buds should be allowed to grow on each of these horizontal portions, one of which is to be trained up on the trellis for another bearing branch, and the other to serve for a continuation of the arms, as before, no bunches being allowed to grow on them. In this way, two new bearing shoots are added yearly, until the entire space intended for the vine on the trellis is filled.

We have already remarked at the beginning of the previous paragraph, that the two upright shoots are cut down to three or four feet. A bud should be allowed to grow at their upper ends, from which all bunches are to be removed, so that they may serve to extend their length upwards, till the full height of the trellis is attained.

There are two modes of treating vines trained in this way. One is what is termed *spur-pruning*, and the other the *long-cane* or *renewal* system. Theoretically speaking, there is but little difference between them, but they are quite different in practice. We have already remarked that the bunches are borne on the present season's shoots. In *spur-pruning*, these shoots are thrown out yearly from the sides of a *permanent* upright shoot, and are cut back yearly, for new ones to spring out from the buds left at their base in pruning.

In the *long-cane* or *renewal* system, every alternate stem is cut wholly down to the horizontal arm; so that, while last year's upright shoot is furnishing a crop of grapes this year,—this year's shoot is growing (free from all bunches,) for a similar crop for next year. No shoot, therefore, remains above the arms longer than two years.

Spur-pruning is best adapted to slowly growing sorts, (chiefly exotics,) which cannot produce a full length branch in one year. The renewal system is best for the most vigorous American varieties, which will grow fifteen or twenty feet in a year. Fig. 7 exhibits distinctly a vine trained to a trellis, and treated on the renewal system, the dark shoots being the present season's bearers, and the dotted lines showing the growth of the

canes for bearers next year, while new ones are growing on the places of this year's bearers.

Summer pruning, which consists in the removal of all supernumerary shoots and bunches as fast as they appear, and in pinching off the ends of bearing shoots, after enough leaves have formed, is of great consequence.

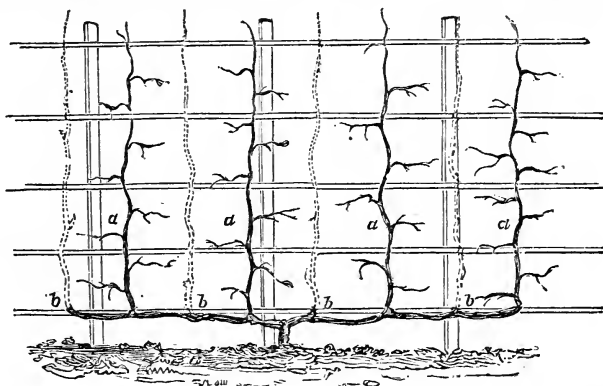


FIG. 7.—A FULL GROWN GRAPE VINE, TRAINED ON THE ALTERNATE OR RENEWAL SYSTEM —THE DARK VINES, THE PRESENT YEAR'S BEARERS—THE DOTTED ONES, GROWING THIS YEAR, FOR BEARING NEXT.

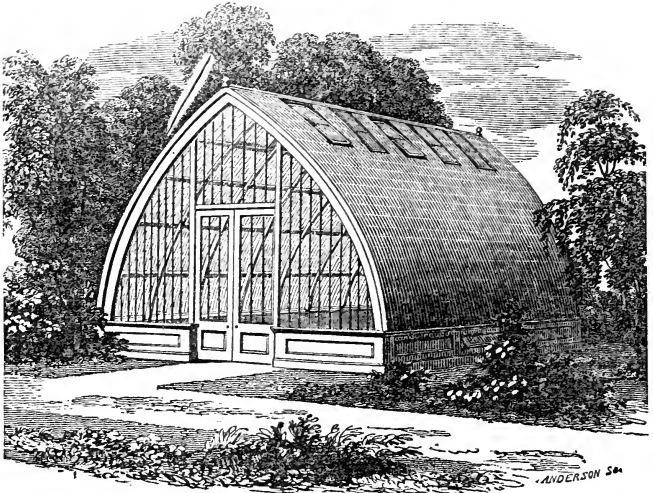
Vines left to themselves, even after a thorough spring pruning, soon have such a profusion of leaves and branches, that none can perfectly develop themselves, and the fruit is consequently small, the bunches meagre, and the ripening late. The summer pinching of the ends of the bearing shoots should be cautiously done, and not before the grapes are about half grown; four or five leaves at least should be left on every one, above the last bunch, and never more than two bunches be allowed on each bearing spur.

The old vine should never be allowed to rise a foot from the ground—the lower it is kept the easier the vine will be managed, and the freer it may be kept from suckers. Some of the best cultivators bury the old stump beneath the soil.

GRAPE HOUSES.

The preceding directions are intended to apply chiefly to the outdoor management of hardy or American grapes, although all the general principles apply to all kinds of grape culture. It rarely happens that the more delicate or exotic varieties are successfully cultivated in the open air for any length of time, and therefore the protection of glass becomes necessary, which gives highly improved fruit, and far greater certainty of a crop. At the same time, a considerable amount of attention is requisite during the period of growth and ripening.

Grape houses are of three kinds, the *cold house*, which only protects from the exterior changes of the weather, and retains the heat of the



COLD GRAPE HOUSE.

earth and of the sun; the *forcing house*, used for ripening early grapes by the assistance of artificial heat; and the *late house*, to be also heated artificially, to ripen, during winter, the later varieties.

The best cold houses are made with *span-roofs*, as in fig. 1; while the *lean-to* house, fig. 2, is best adapted to forcing, affording better security against the admission of cold. For this purpose the latter should also have a double wall at the back.

FIG. 1.—SPAN-ROOF GRAPERY.

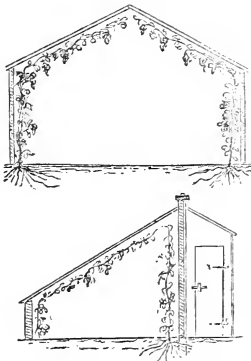


FIG. 2.—LEAN-TO GRAPERY.

site page.) The walls are

made by setting posts into the ground, and

constructed for the cold grape house, is represented in the annexed figure, (fig. 3 on opposite

A great improvement in *cheapness of construction* for the cold grape house, is represented in the annexed figure, (fig. 3 on opposite

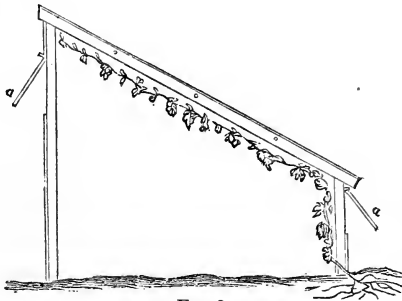


FIG. 3.

rowed at the rafter and let into it sufficiently to be on a level with its top.

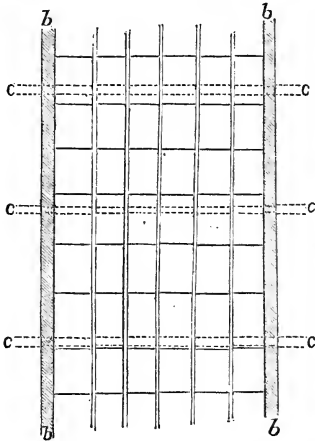


FIG. 4.

covering with a rough, white-washed, board siding. The cover of glass is greatly simplified and cheapened, by *fixed sashes*, the necessary ventilation being effected by the board shutters, *a a*, opening outwards on hinges, and placed at intervals along the back and front walls.

Fig. 4 represents a portion of the glass roof—*b b* are the rafters; *c c* are cross bars, made of strips of inch board about two and a half inches wide, set on edge, and nar-

rowed at the rafter and let into it sufficiently to be on a level with its top. These cross pieces support long slender bars parallel with the rafters, and formed on the top in the shape of a common sash-bar and to receive the glass.

The leading figure on page 234 represents a very neat and tasteful cold grape house, erected by H. INGER-SOLL, near Pdiladelphia. It is 18 feet by 43½ feet, and 14 feet high; was built of the best materials, by mechanics at city prices, and cost \$500.

Border for the Vines. This should never be less than 12 feet wide, and if 20 or 25 feet it would be better — The roots of grape vines run rapidly to a great distance, and it is indispensable to their successful growth to furnish them ample room for extension. J. F. ALLEN, of Salem, Mass., a most successful cultivator, in his Treatise on the Grape, recommends for a border, a mixture of one-half

loam, or the top soil of an old pasture, one-fourth bones or other strong manure, one-eighth oyster-shells, lime, or brick rubbish, one-eighth rotten stable manure—varying with circumstances. The bed should be well mixed, and should be two to three feet deep.

The same work states the cost of a cheap lean-to grape house, without fire heat, 12 or 14 feet wide, at about eight dollars per running foot; and with the addition of a heating apparatus, at ten dollars per running foot, constructed as cheaply as possible.

It would be impossible, within the space of a few pages, to give full directions for the management of a grape house. The following brief instructions, from A. J. DOWNING, contain all that is essential for a cold house:

ROUTINE OF CULTURE.

“In a vinery without heat this is comparatively simple. As soon as the vines commence swelling their buds in the spring, they should be carefully washed with mild soap suds, to free them from insects, soften the wood, and assist the buds to swell regularly. At least three or four times every week, they should be well syringed with water, which, when the weather is cool, should always be done in the morning. And every day the vine border should be duly supplied with water. During the time when the vines are in blossom, and while the fruit is setting, all sprinkling or syringing over the leaves must be suspended, and the house should be kept a little more closed and warm than usual, and should any indications of mildew appear on any of the branches, it may at once be checked by dusting them with flour of sulphur. Air must be given liberally every day when the temperature rises in the house, beginning by sliding down the top sashes a little in the morning, more at mid-day, and then gradually closing them in the same manner. To guard against the sudden changes of temperature out of doors, and at the same time to keep up as moist and warm a state of atmosphere within the vinery as is consistent with pretty free admission of the air during sunshine, is the great object of culture in a vinery of this kind.”

GENERAL RULES

FOR PLANTING AND MANAGING FRUIT TREES.

1. The first or preliminary requisite is a good, rich, deep, dry soil. If inclining to be wet, or if the subsoil is too moist, it must be well underdrained, for a common but unknown cause of bad growth and poor fruit, is hidden, stagnant water in the soil.

If not naturally very fertile, it must be enriched by manuring—and this is best if done for a year or two before planting, that it may be well incorporated. Subsoiling and trench plowing should be performed in connexion with the process of working in the manure, and it should be thoroughly intermixed by intermediate harrowings. A deep soil, besides causing a more rapid growth and finer fruit, is less affected by drouth and by heavy rains.

2. The second requisite is a good enclosure. The young trees must be protected from injury by cattle, and the fruit afterwards from the deprivations of boys. A strong common fence will answer for the former, but an Osage hedge, with its numerous thorns may be required for the latter, although a good watch-dog is valuable. A hedge planted when the trees are set, and well managed, will form a good protection by the time the trees bear much, but there should be a good barrier for cattle before the first tree is planted.

3. The third point of importance is to procure and set out the trees. The lists we have given in the former and present numbers of *THE REGISTER*, will assist in making a good selection. They should be carefully dug up with a full supply of small roots. The holes should be large—not less than four feet in diameter, and in setting, it should be filled with the best rich mellow earth, but no manure should touch the roots. If any manure

is used, it should be old or rotted, well mixed in with earth, and placed in a remote part of the hole. The broken roots should be all pared off with a sharp knife. All the roots should be carefully spread out with the fingers while filling, and before the hole is quite full, the fine earth should be settled among all the interstices by pouring in water. The trees should be placed no deeper than they stood before, allowing an inch or two for settling. All except small trees need staking to protect them from the wind.

4. The after management consists in keeping the surface mellow and clean and in preserving the moisture. A well mellowed surface rarely becomes dry, but if watering is ever needed, the top earth should be removed, the water poured directly among the roots, and the earth again replaced. But a better way is to mulch, or cover the surface six inches deep about the tree, with old straw or other litter.

5. The subsequent growth of the trees will greatly depend on clean and mellow cultivation. Generally, young trees will grow from *ten to twenty* times as fast when cultivated, than if suffered to grow among weeds and grass. Spading a small circle round the tree answers the purpose poorly, as the roots are usually as long as the tree, and the cultivation must be *broadcast* to impart full benefit.

6. *Predators.* *Mice* are excluded by banking up a foot around every tree, late in autumn—*birds* from cherries by shooting—*curculios* are destroyed by jarring down on sheets and also by turning in pigs and geese—*caterpillars*, by lime wash—*borers* by punching to death in their holes with a small twig—and the *peach worm* by cutting out with a knife, &c.

The *fire-blight* in pears, needs a prompt excision of the affected branches—the *yellow*s in the peach requires the whole tree to be destroyed—and the *black-knot* in the plum is kept off by *continued* amputation, *beginning in time*.

ORNAMENTAL PLANTING.

IN THE RURAL REGISTER of last year, a number of suggestions were given in relation to the arrangement and treatment of ornamental trees,

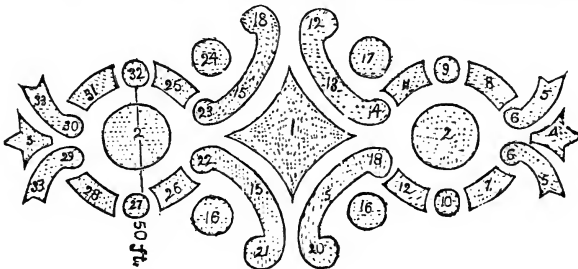


FIG. 1.—DROPMORE GARDEN.

which need not be repeated. We may remark, however, that success in planting, and a rapid, handsome, and luxuriant growth, require the same

care in providing a deep fertile soil, and in giving them for some years subsequently, a high, rich, and mellow cultivation, that is so indispensably required for fruit trees, and which we have already pointed out.

There are several modes of planting and managing the grounds about a dwelling. When the place is large, and several acres are devoted to this purpose, large or *park* trees are to be introduced, and the grass may be kept short and in good order by pasturing with sheep; leaving a small space immediately about the house, separated by a stiff wire fence, and which may be more neatly kept. Smaller grounds may be planted with small trees and shrubs and the ground be mostly covered with grass, which is neatly mowed once a fortnight — according to the plan described for gardens on p. 35 of last year's REGISTER. Still smaller grounds, when economy in labor would be less an

object, and where it is desirable to make the most of their limited extent, may be nearly all occupied with flower beds in the geometric style, which admits

a more compact arrangement. The accompanying figures are two examples of this sort. Fig. 1 represents the form and disposition of the beds in the celebrated *Dropmore* garden, England; and fig. 2 another in the form of a circle. If the walks are 3 feet wide, the circle will be 75 feet in diameter. It may be reduced by omitting any portion of the exterior.

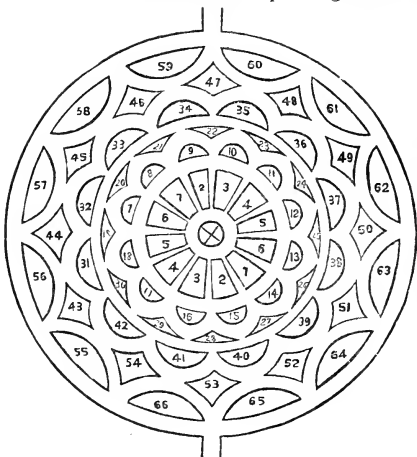


FIG. 2.



CEDAR OF LEBANON.

SELECT LIST OF TREES AND PLANTS—HARDY.

PARK TREES. The *Oak*, (of which there are many species;) *American Elm*; *Maples*, including the sugar, black, red, Norway and silver; *Catalpa*; *Chestnut*; *Black Walnut*; *White Ash*; *Tulip Tree*; *European*

Larch; *White Horsechestnut*; *Cucumber Magnolia*; *Basswood*; *American Cypress*. EVERGREENS—*Norway fir*; *Hemlock*; *White Pine*; *Balsam fir*; *American Arbor vite*. The *Deodar* and *Cedar of Lebanon* are hardy if shaded from the sun.

SMALL TREES AND LARGE SHRUBS. *Weeping Ash*; *Judas tree*; *Laburnum*; *Mountain Ash*, American and European; *Virgilia*; *Fringe tree*, purple and white; scarlet, pink, and white *Hawthorn*; *Silver Bell*; *Althea*; *Philadelphus*, (*Syringo*,) several species; *Snowball*; *Common and Siberian Lilacs*; *Cornelian Cherry*; *Eunonymous* or burning bush; *Chinese White Magnolia*; *Soulange's Purple Magnolia*.

SMALL SHRUBS. *Japan quince*; dwarf *Flowering Almond*; *Sweet Scented Shrub*; *Pink Mezercon*; *Yellow Jasmine*; *Japan Globe-flower*; *Crimson Currant*; *Tartarian Honeysuckle*, white, pink, and striped varieties; *Spiraea*, several shrubby species; *Magnolia obovata*; *Tree Pæonia*; *Barberry*; *Deutzia scabra*; and all the finer hardy *Roses*.

CLIMBING SHRUBS. *Honeysuckles*, several species; *Bignonia*; *Aristolochia*, (or *Dutchman's pipe*;) *Clematis*, several sorts; *Ayrshire Roses*; and *Baltimore Belle*, *Queen of Prairies*, and other *Prairie Roses*.

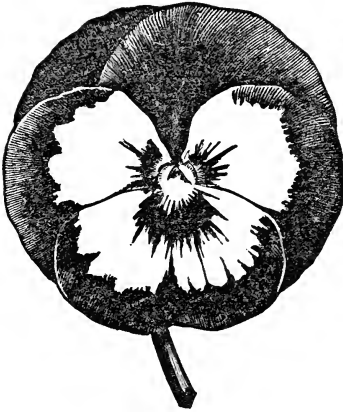
EVERGREEN SMALL TREES AND SHRUBS. *Tree Box*; *Common Juniper*; *Red Cedar*; *White Spruce*; *Irish Yew*.

HERBACEOUS FLOWERING PLANTS.

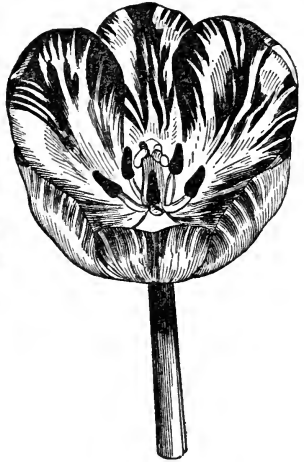
In order to have a handsome succession of flowers through the season, *bulbous flowers* must be selected for the earliest bloomers; other *herbaceous perennials* for their successors; and some particular *bulbous plants*, *annuals*, and *green-house plants*, for late summer and autumnal flowering.



DEODAR CEDAR.



PERFECT PANSY.



PERFECT TULIP.



TIGER FLOWER.

The earliest bulbous flowers are *Snowdrop*, single and double; *Bulbocodium vernum*; *Crocus*, several colors; and *Siberian Squill*; all of which appear in bloom as soon as the snow disappears from the ground. They

are followed by several very early herbaceous perennials, among which are the *Claytonia*, the *Hepatica*, *Adonis*, *Wood Anemone*, *Phlox subulata* or moss pink, *Pansies*, *Cowslip*, sweet scented *Violet*, creeping *Phlox*, *Dodecatheon*, *Erythronium*. About the same time with some of these, appear the *Hyacinths*, *Daffodils*, *Jonquills*, succeeded by the numerous and brilliant varieties of the *Tulip*. The last is followed by a rapid succession of herbaceous perennials, some of the finest of which are the *Veronicas*, the earlier *Phloxes*, the *Lupins*, the *Iris* of many sorts, the *Columbines*, the oriental and Caucasian *Poppy*, and the magnificent varieties of the herbaceous *Pæonia*. The mid-summer flowers are the herbaceous *Spiræas*, among which the *S. lobata* and *S. aruncus*, are especially showy; the *Cypripediums*, the *Lychnis*, the Chinese *Larkspur*, the peach-leaved and large flowered *Campanulas*, the *Clematis erecta*, the *Aconites*, several *Pentstemons*, *Diellamnus*, *Dracoccephalum*, *Lythrums*, *Coreopsis*, *Liatris*, several *Phloxes*, *Yucca*, &c.

GLADIOLUS FLORIBUNDUS.

Among the most interesting summer flowering bulbous plants, are the *Gladiolus communis*, or common purple sword-lily, which is perfectly hardy; the *Gladiolus floribundus* or profuse-flowering sword-lily, remarkable for its beautiful flesh colored flowers, but being tender, requires taking up before winter, and preservation from frost; and *Gladiolus gandivensis*, or Ghent sword-lily, with flowers of a rich orange scarlet, and also tender like the last. The *Tiger flower*, remarkable for its beautiful and showy petals, blooms about the same time, and requires similar treatment on account of its tender character. The *Japan lilies*, equally showy, are quite hardy.

Flowers in autumn are obtained largely from the successful culture of annuals, and from the hardier green-house plants, commonly known as bedding plants, among the most successful and desirable of which are the *Verbenas* and *Salvias*. The *Chrysanthemums*, including the dwarf or "pom-pone," flower almost into winter. They are hardy, and will succeed if planted in open ground, with a shelter, and full exposure to the sun during the latter part of autumn.

BUTTER AND CHEESE MAKING.

WRITTEN FOR THE REGISTER, BY JOSEPH HARRIS.

It is not our purpose to consider general dairy management. It is too important a subject to be discussed in the few pages allowed for this article. We shall take it for granted that the cows are properly managed; that in winter they are carefully sheltered from fierce blasts and piercing cold, and provided with abundant nutriment in the form of hay, corn-stalks, straw, roots, &c.; that in summer they have the run of a good range of pastures, stocked with the best natural and artificial grasses, with a constant supply of pure water and grateful shade; that they are milked regularly and thoroughly, and treated with all gentleness; never whipped or harshly spoken to; never driven too far or too fast, or irritated or frightened in any way. We take it for granted that *good milk is obtained*, and that it is the object of the dairyman to get from it the butter and cheese which it contains.

The quantity of butter and cheese in milk, varies materially, according to the age of the cow, breed, and distance from calving, the nature of her food and general treatment. HENRY & CHEVALLIER found in the biestings or first milk, 15 per cent. of casein or curd, and only $2\frac{1}{2}$ per cent. of butter. The same chemists give the following as the average composition of ordinary cow's milk: casein or curd, 4.48 per cent.; butter, 3.13; sugar, 4.77; saline matter, 0.60; water, 87.02. The average of five determinations made by BOUSSINGAULT, with milk from a French cow, fed each week on different food, for five weeks, was: casein, 3.24 per cent.; butter, 4.06; sugar, 5.38; saline matter, 0.19; water, 87.13. The average of four determinations of milk from a Swiss cow, fed on different food each week for a month, was: casein, 3.75 per cent.; butter, 3.75; sugar, 4.75; saline matter, 0.28; water, 87.47. The average of nine analyses of milk from a Short horn cow, made by Dr. PLAYFAIR, was casein, 4.17 per cent.; butter, 5.00; sugar, 4.12; saline matter, 0.54; water, 86.17. The average of these 18 analyses is: casein, 3.91 per cent.; butter, 3.98; sugar, 4.76; saline matter, 0.40; water, 86.95.

Casein, or pure curd, is almost identical in composition with the albumen of grass, roots, hay, &c.; with the legumin of peas and beans; with the gluten of wheat, &c., and with all the so called protein compounds of oil cake, bran, linseed, corn, barley, oats, and all substances used as food. These foods also contain oil or butter, as well as starch or sugar; so that we find in milk precisely the same substances as in grass, hay, roots, grains, &c. In view of this fact, some writers have supposed that, by selecting food containing more or less albumen or oil or starch, we might, by using the body of the cow as a machine, obtain at pleasure milk containing more or less cheese, butter, and sugar. So far, the experiments which have been made show this idea erroneous. It is found that substances rich in albuminous matter, and which according to this idea should produce milk rich in casein or curd, have precisely the opposite effect, and give milk relatively deficient in casein and rich in butter.

Milk when drawn from the cow is always alkaline; it contains free soda. Casein or curd is insoluble in pure water, but readily soluble in water containing free soda. It is the soda of the milk, therefore, that keeps the curd in solution. The oil or butter is contained in little bags or films of casein,

and is not dissolved, but simply suspended in the water. The sugar and saline matter are of course held in solution. Such is milk when drawn from the cow. By allowing it to cool and remain quiet for a short time, the little bags of butter, being specifically lighter than the other portion of the milk, rise to the surface, and are known as cream. Other changes soon take place. The milk coagulates, and at a warm temperature speedily becomes perceptibly sour. The cause of this is very simple. At a proper temperature, by the absorption of oxygen from the atmosphere, the casein undergoes a slight transformation, and reacts on the sugar of the milk, converting it into lactic (milk) acid. This acid immediately unites with the soda, which holds the curd in solution, neutralizing it, and forming lactate of soda, while the casein being insoluble in water, is precipitated, or, in common parlance, the milk becomes curdled. The conditions favorable to fermentation—heat, light and moisture—are therefore unfavorable for preserving milk sweet.

Milk can be instantly curdled by the addition of an acid, and in some countries spirits of salts (hydrochloric acid) and vinegar (acetic acid) are used instead of rennet for "setting the cheese." In these cases the soda which holds the casein in solution is neutralized by the acids, and the curd immediately becomes insoluble, and is separated from the whey as in ordinary cheese making. Cheese so made, however, is hard and unpalatable.

The only way to make good cheese is to produce lactic acid from the sugar of milk by fermentation. A great variety of means are employed for this purpose. As we have said, the casein in milk will of itself change the sugar into lactic acid and curdle the milk; but before it does this it has itself begun to ferment under the influence of light and heat, and by the absorption of oxygen from the air. If curd be exposed to the atmosphere for a few days, and then added to milk, it coagulates it as quickly as rennet, and is often used for this purpose. A number of vegetable substances, such as the juice of the fig or thistle, a decoction of the dried flowers of the artichoke or thistle are also used as rennet. All animal substances in a certain state of decomposition will convert the sugar of milk into lactic acid, but, although pig's bladder is still used in some countries in Europe, it is generally conceded that the stomach of the calf, properly prepared, is the best substance for this purpose.

When fresh, the membrane of the calf's stomach is insoluble in water, but when it is salted and kept for several months exposed to the air, a portion of its surface is decomposed, and becomes soluble. It is this soluble, decomposed, or more properly *decomposing* membrane, which is the active principle in rennet. It is a soluble, highly nitrogenous substance, having its elements in a disturbed state, and therefore highly effective in inducing change in the elements of other bodies with which it is brought in contact.

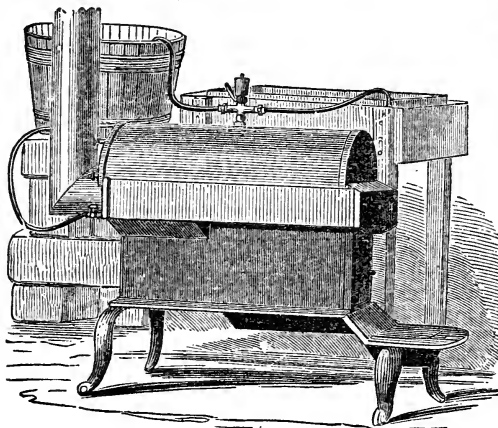
In preparing rennet, we have to check the natural decomposition of the stomach by the use of salt, otherwise it would communicate an unpleasant flavor to the cheese; but at the same time keep the salted stomach long enough to permit its elements to become disturbed by the action of the atmosphere. In Cheshire, Eng., the skins are cleaned out, and packed away with salt in an earthen jar till the following year. They are taken out a month before use, stretched on pine sticks, and dried. A square inch of the skin for each 15 or 20 gallons of milk is soaked for 24 hours in

a solution of lukewarm water and salt, and the whole poured into the milk and well stirred. In Gloucestershire, the cleaned stomach is salted, and pickled, and dried; and when at least a year old, it is well sodden in salt water; half a pint of which is sufficient to coagulate 50 gallons of milk. In Ayrshire, *the contents of the stomach are preserved*; they are well salted, both inside and out, and dried for a year or more; and when needed for use, the whole is chopped up and placed with salt in a jar, along with water and new whey, which after two or three days, is strained to remove impurities, and is then ready for use. In the dairy districts of this State, the stomach is emptied of its contents, salted and dried, without scraping or rinsing, and kept for one year. It is then soaked for 24 hours in tepid water—a gallon of water to each rennet. They should be frequently rubbed and pressed to get out all the strength. The liquor containing the soluble rennet, is then saturated with salt, allowed to settle, and strained to separate the sediment and all impurities. It is then fit for use. It should be kept in a stone jar, and in a cool place. As much of the liquor is used each morning as will set the cheese firm in 40 minutes. We have visited many excellent English dairies where the same system is adopted. It is, in our opinion, better than placing the rennet itself in the milk. The stomach may again be salted, stretched, and exposed to the air for some months, when it can be used over again—a fresh portion of the membrane having been decomposed by the air and rendered soluble. This fact, and others that might be mentioned, sufficiently prove that it is not the *gastric juice* of the stomach that is the active ingredient of rennet in coagulating milk.

As cheese making is a fermenting process, it is influenced materially by heat, proceeding within certain limits, faster or slower as the temperature is raised or lowered. In England, the milk is generally raised to a temperature of 85° Fahr. before adding the rennet. In this country it is set cooler, and raised to a higher temperature after the milk is coagulated. This is called "scalding." The word is a bad one, calculated to mislead. To "*scald the curd*" would be to spoil the cheese; but all that is meant by the phrase is raising the temperature of the *whey and curd* up to about 100 Fahr. This "scalding" process has many advantages: among others, the cheese requires less pressure, and the milk can be set at a much lower temperature—say 80° Fahr.

Scalding should be done with great care and nicety. Formerly it was done by heating a portion of whey, and pouring it into the cheese; but there is danger of injuring a portion of the cheese by over-heating it. A much better method is now generally adopted by the dairymen in the northern counties of New-York, and it is one of the greatest improvements in cheese making we have seen. What our English friends call the "cheese tub," is made of tin, and is placed in a wooden frame, so fixed that it can be surrounded by hot or cold water as desired. The evening's milk is strained into this tin, as it is brought in warm from the cows; and is kept cool by allowing cold water to run round it. The morning's milk is added to the cooled evening's milk, and if not then sufficiently warm to add the rennet, warm water is poured round the tin till the proper temperature is attained. There is some difference of opinion on this point: we know good dairymen who add the rennet to the milk at 80°, and others not till it is as high as 90°. The curd should come in about 40 minutes. Shortly afterwards the curd is cut up with a "cheese breaker,"

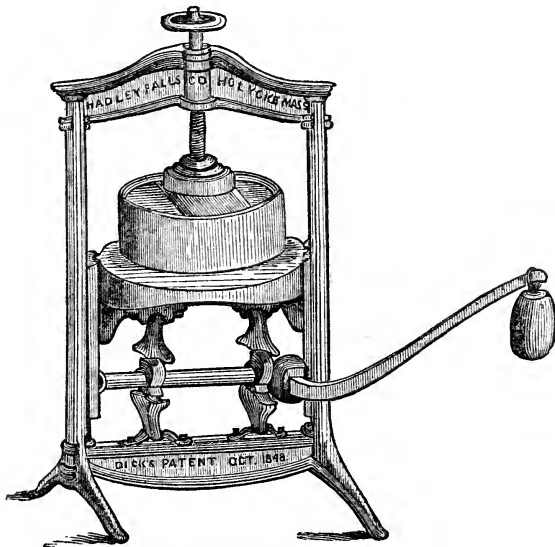
and then the temperature is gradually raised by pouring warm water



DAIRY STEAMER

round the tin. Many err by raising the temperature too fast. It should not be increased more than a degree in five minutes.

In many dairies, a steamer is employed for heating the water surrounding the tin, containing the milk, or whey and curd, as also for supplying hot water for washing utensils, &c. The accompanying engraving will give a correct idea of it.



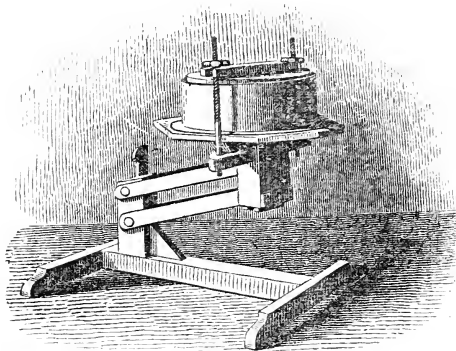
DICK'S CHEESE PRESS.

The English method of separating the whey from the curd by allowing it to settle, and dipping off the whey, is too slow for an intelligent 'go-ahead American. A lattice frame work, on which a large cloth is spread, is fitted into a sink, connected by a pipe with the receptacle for the whey, or pig cistern. The whey and curd are dipped on to this cloth, the whey running through in a few minutes, leaving the curd on the cloth. A little

cold water is then poured on to the curd to keep it from packing.

Some, however, prefer to cool whey and curd together, by putting cold water round the tin. When the whey has all drained away, the curd is broken up fine and salted. It is then placed in a cheese hoop and pressed for 24 hours.

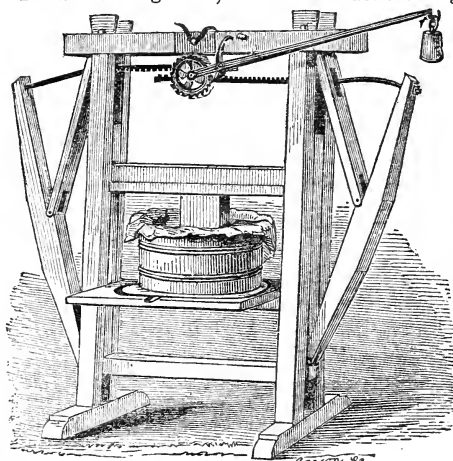
There are a number of excellent cheese presses, but probably none superior to that invented by Mr. Dick.



PATENT SELF-ACTING CHEESE PRESS.

The Self-Acting Press, so called because the weight of the cheese is the

power which creates the pressure, is frequently used in small dairies.



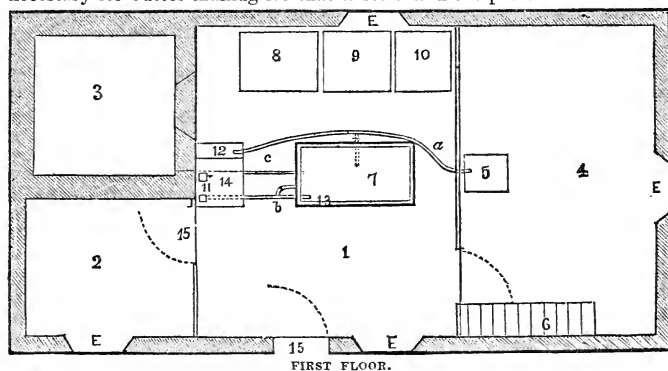
KENDALL'S CHEESE PRESS.

In the dairy districts of this State, Kendall's Cheese Press would appear to be the most popular, being cheaper than Dick's, and more efficient than the Self-Acting Press. A weight of 20 lbs. at the end of the lever gives a pressure of 10 tons. In all presses, it is very desirable that the pressure should faithfully follow the cheese as it shrinks.

Cheshire dairymen, as a general thing, do not scald their curd, and hence much more

care is needed in salting and pressing than in the process we have described. After the curd is separated from the whey, it is put under a hand press for an hour or two, and as much of the whey expressed from it as possible *previous to salting*. When taken from under the hand press, it is broken quite fine by hand, and salted. It is then put in the cheese hoop, and pressed slightly for six or eight hours. It is then taken from under the press, pierced with a wooden skewer, in order to open channels for the exudation of the whey, covered with a clean cloth, and put under a heavy pressure till next morning, when a clean cloth is again put round it, and a heavy pressure applied till it will no longer wet the cloth. Cheeses are frequently left under the press three or four days. "Scalding" expels the whey from the curd more effectually than can be done by the most powerful and long continued pressure, but it is a question whether at the same time it does not destroy some of the desired flavor of the cheese. If our dairymen should "scald" less and press more, their cheese would be more highly prized, at least in the English market.

The following plan for a dairy house, is given by GURDON EVANS, in *The Cultivator*. "It is arranged for cheese making, though it will be found equally convenient for butter making, by substituting the furniture necessary for butter making for that described in the plan."



The building should consist of a cellar and one story above; the former, settled about three or four feet below the surface, provided with a drain, emptying if possible into the slop-tub in the cow barn. The wall of the cellar, and both stories, if convenient, should be of stone or brick, laid in lime mortar, and from 18 to 24 inches thick. The bottom should be of water-lime mortar, which will, when properly prepared, soon harden into a level smooth surface, quite imperishable, and be proof against water, and all rats and mice. The pipes, leading to and from the cisterns, &c., should be laid down before the floor is laid, and the mortar carefully fitted to them. The ice house should be plastered with water-lime, and a little space left between the ice and bottom of the house, to allow the water a small space. The top and side walls of the dairy house should be finished with plaster, by which means a uniform temperature, indispensable to curing cheese well, is more easily secured. Size, 18 by 30 feet outside.

First Floor.—1. The room for making cheese in, 14 by 18. 2. Closet 10 by 10, provided with shelves, for storing all sorts of furniture.

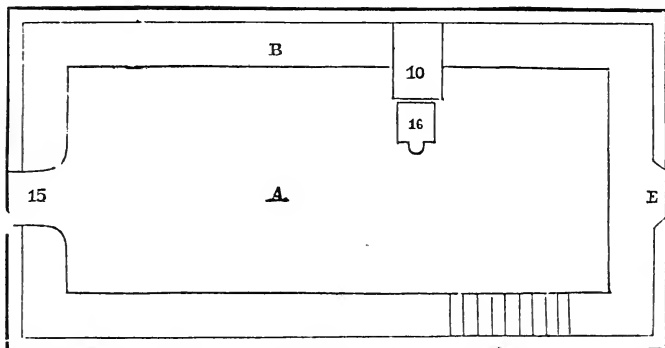
3. Ice house, 10 by 10. This should be enclosed by double walls, and great care taken to make both perfectly air tight, and the space may be filled with sand, leached ashes, or almost any dry porous substance; but nothing is so good as air, provided it is not permitted to circulate in and out of the space, because air when not in motion is almost a non-conductor of heat; but since cold air is *heavier* than warm, if crevices are left near the bottom of the ice vault, the cold air contained in it, as soon as the temperature without is raised, flows out, and its place is supplied by warmer air passing in at the same crevices, and an equilibrium is soon restored between the temperature of the air without and within the ice house, and the ice rapidly wastes away. For this reason the door should be double, and open near the top of the vault, or it may have no door on the side, and be filled and emptied through a trap door from the upper story. The lower floor must be high enough to draw water from it into the milk vat.

4. General store room and wood cellar, 11 by 18

5. A stove or furnace of some kind, at which steam is generated for warming milk, heating water, &c. 6. Stairs to the cheese loft. 7. A tin cistern, large enough to contain as much milk as is to be set at once, surrounded by a wooden vat, leaving a space an inch wide at the sides, and nearly two under the bottom, for the introduction of water, either warm or cold, for heating or cooling milk. *a.* Lead pipe leading from steam generator to water in wooden vat, by which the milk is conveniently raised to any desired temperature. By means of the stops in the pipe, the steam may be let in to a water cistern (12) when not needed to heat the milk, by which hot water is always easily kept on hand for cleansing the various utensils. The end of the steam pipe should pass under the center of the cistern, and a board a foot square must be placed between it and the cistern to prevent heating the cistern too hot just when the steam is discharged. *b.* A pipe leading to the sink drain, by which both the whey and water are led off from the cistern, when the cheese is sufficiently scalded. The whey pipe should be large, not less than two inches, so that when the orifice is opened the whey will escape immediately, and thus prevent the curd from sticking together. To prevent the curd from escaping with the whey, a tin strainer of a peculiar form is inserted in the orifice. This strainer is a cylinder five inches in diameter, and as long as the vat is deep; this cylinder is perforated as full of fine holes as the strength of the metal will admit, and to the lower end of it is soldered a tin tube large enough to fit the orifice in the bottom of the vat. While the curd is setting, the orifice is stopped with a plug reaching the top of the vat, smaller at the upper end, and when the whey is to be let off, the tin strainer is slipped over the plug, and into the orifice, when the plug is removed, and the whey escapes; this may be done if the orifice is tapering, and the plug made to fit the lower part, and the cylinder the upper. *c.* Pipe leading cold water from the bottom of the ice house to the wooden cistern, for the purpose of cooling the milk.

8. Cheese press. 9. Table for turning the cheese upon. This table should be about two inches lower than the press bed, and a wide board, upon small wheels, is placed upon the table, and the cheese placed upon it, after being pressed.

10. An elevator raised by cords, pullies, and weights, by which the cheese is elevated on the little car, to the loft, when, after being wheeled on the scales and weighed, it is run back, raised to any shelf, and wheeled around to any desired place. This saves all lifting, after leaving the press, till it is sold. 11. Pump or penstock. 12. Tub or cistern for heating water in, by steam. 13. Wooden vat in which the tin vat is placed. 14. Sink provided with a spout, leading all slop, whey, &c., away. 15. Doors. E. Windows.



SECOND FLOOR.

Plan of loft.—A. Second floor. B. Shelves, 30 inches wide, extending around the room. As many of them can be arranged as necessary to accommodate the cheese.

There is but one window, and this should be provided with blinds and darkened in warm weather, to guard against all insects. 16. Scales.

In all the operations of the dairy the most scrupulous cleanliness must be observed; but in the production of butter it is even more necessary than in cheese making. Cream is more easily tainted by noxious gases than almost any other substance. It is impossible to make good flavored butter if the utensils and dairy are not scrupulously sweet; or if fumes from the barn-yard or out-buildings are not excluded.

As we have said, the oil or butter is suspended in milk in small globules surrounded by films of casein. Cream is an aggregation of these oil bags. The object of churning is to separate the oil from the curd by which it is surrounded. This is accomplished by agitating the cream and breaking the films of curd, setting the oil free, which then runs together and forms lumps of butter. Cream, from the formation of lactic acid, is generally sour before churning, and if not, always becomes so during the operation. The lactic acid acts on the films of curd and renders them more easily broken. During the progress, the cream increases in temperature from 5° to 10° . The best temperature at which to churn the cream is a disputed point. It appears, however, to be well established by numerous experiments, that 55° Fahr. when the cream is put in the churn, and about 65° when the butter comes, affords the best results. If higher than this, the butter is white and soft; if lower, the whole of the butter is not separated and the labor of churning is much increased. In summer, the

butter should not come in less than 40 minutes. If obtained quicker it is generally at the expense of color, flavor, and hardness. After the cream is broke, it should be churned slowly till the butter is gathered.

Some good butter makers do not wash the butter at all, merely working out the buttermilk by pressure. It is said that a better flavored butter is obtained in this way; but where good, cool spring water can be obtained we prefer to thoroughly wash the butter, taking great pains to remove all the buttermilk. Butter generally contains about 15 per cent. of water, curd, &c. It is important for the preservation of butter that as much of this as possible should be removed. The quantity of salt required depends very much upon the quantity of water in the butter. The water should be saturated with salt, hence the less water the butter contains, the less salt will be required for its perfect preservation. There are several machines for working butter, but we have had no experience in their use.

There are various opinions as to the advantage of churning the whole milk or only the cream. Some contend that not only is more butter obtained by churning the whole milk, but that it is of better flavor. There is probably a little more butter obtained but that it is of better quality we may be allowed to question. In the neighborhood of a large city, where, as in Great Britain, buttermilk is in demand, it will pay to churn the whole of the milk, but as a general thing, it is much less labor and far more convenient to churn only the cream.

In some of the best English dairies that we are acquainted with, the milk is skimmed every morning; and sometimes, when a very superior article of butter is required, the cream from the first or second skimmings only is churned—that from the milk when it is partially or quite sour being churned separately for use in the kitchen. In this country, the milk is not skimmed till all the cream has risen, and it is all removed at once. This is probably the better way, for not only is it less labor, but the milk remains sweet much longer than when disturbed every morning by skimming; and this in our hot weather is quite a consideration. It is desirable that the dairy should be cool enough to keep the milk sweet sufficiently long to permit all the cream to rise to the surface, for there can be little doubt that if the milk becomes quite sour or bitter before the cream is removed, the quality of the butter will be impaired. Milk, too, for butter making purposes should not be placed in deep pans, or all the cream may not have time to reach the surface. For the same reason the pans should be narrower at the bottom than at the top.

Probably a better quality of butter is obtained by churning the cream before it becomes sour. In hot weather, it is almost impossible to do this, without churning every morning. A greater length of time is occupied in churning sweet than sour cream, but in hot weather this is no objection. When by fast churning, or any other cause, the butter comes in 10 or 15 minutes, it can hardly fail to be soft, white and poor flavored. A celebrated butter maker in this state, who churns every morning in hot weather, has the cream so cold, and churns so slowly, that the butter is from one to two hours in coming. When the butter is come, it is well washed and salted—6 lbs. Pacific salt to each 100 lbs. of butter. The next day it is re-worked till every particle of buttermilk is removed, when it is packed in tubs, and stored away in a cool cellar.

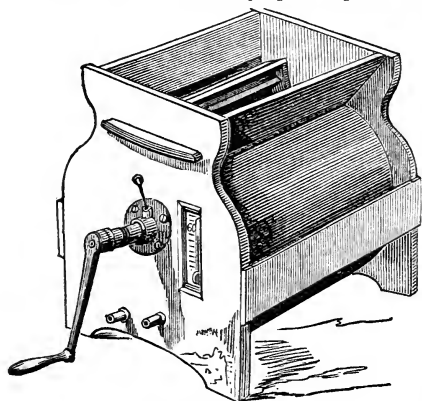
“The chief points besides cleanliness,” says an experienced writer, “in making good butter are these: To milk at regular hours; to place the milk in shallow vessels; to have a perfectly clean cellar, with a hard brick or flag stone bottom, and with shutters and wire screen windows, to admit air and exclude insects; to skim the milk the moment it coagulates or “lobbers,” which will be in 30 to 48 hours; to churn the cream at a temperature between 60° and 65° [in hot weather 55° to 60° is better] by the thermometer; to free the butter as much as possible from buttermilk, and then add a sixteenth part of the purest salt; to work out the remaining buttermilk in 12 hours afterwards, and again in 24 hours, being careful not to work it too much at a time; to pack it closely in stone jars, till nearly full, and then spread clean white muslin cloth over the top, pack closely a layer of one inch of fine salt upon the muslin, and finally cover the jar with a neatly fitting tin cover. This is, substantially, the process of most of the best butter makers. Butter thus made will keep a year, if placed on the bottom of a cool cellar.”

Cream always becomes sour in churning, and rises in temperature. This is owing to chemical action—to the conversion of sugar into lactic acid. This increase in temperature, if the cream is cool enough when put into the churn, is probably desirable. But after the cream is well “broke,” it is frequently necessary to cool it slightly, while the butter is being gathered. This is usually done by pouring in a little cold water, washing down the particles of butter attached to the sides of the churn at the same time. In gathering the butter, it is essential not only to have the buttermilk cool, but to churn quite slowly, or the butter will be soft, and it will be difficult to work out the buttermilk.

For the attainment of the proper temperature in churning, we consider the

“Thermometer Churn” one of the best inventions of recent date. It consists of a zinc cylinder, with the lower half encased in a wooden frame lined with zinc, having an inch or two of space between, so that the body of the churn can be surrounded with warm or cold water as desired. There is also a thermometer set in one end, which is of much use as long as it is clean, so that the mercury can be seen.

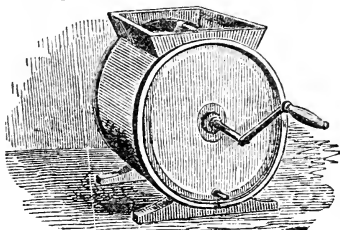
Kendall's Cylinder Churn is well known, and much esteemed for its cheapness and simplicity. It is an excellent churn,



THERMOMETER CHURN.

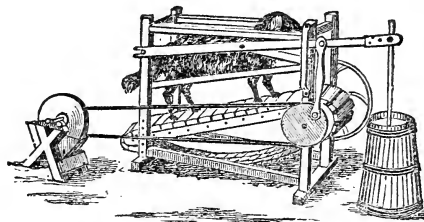
especially for small dairies. Some object to it and to the Thermometer Churn, on account of the corrodibility of the iron at the ends of the axis, which, when much time is occupied in churning, as is frequently the case in late autumn and winter, imparts by the action of the acid buttermilk

a disagreeable color and flavor to the butter. This difficulty does exist



KENDALL'S CHURN.

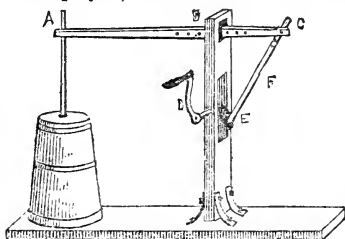
in all churns of this description we have used. Nevertheless, if the joints are properly fitted together, and ordinary care is exercised in keeping them clean and free from all rust, little inconvenience will be encountered from this cause. There are those however, who prefer the old barrel churn, or some of its modifications, as in it all danger in this respect is removed. Some, too, are inclined to go back to first principles and use the old up and down plunge churn. This is very well



where a dog power is used as shown in the annexed engraving; but when worked by hand, it is a barbarous institution, at least such was our opinion when in our boyish days we had to use it by the hour together.

If a dog power is not used, the labor of working the plunge or dasher churn may be greatly lessened by means of a crank. Numerous methods for accomplishing this are employed, but there are probably none more simple than that given by

E. M. FULLER, Salisbury, N. Y., in the *Country Gentleman*, as shown in the accompanying cut.



A, is the mortice that the dasher goes through—B, is the place where the evener is fastened, by means of a bolt; and by moving the evener towards the letter B, the dasher will not move so high—C, is the place where the evener and pitman are joined—F, is the pitman—D, is a crank about a foot long—E, is a short crank about 4 inches long, working in a mortice in the center of the post, 1 foot long and 4 inches wide. A fly wheel attached to this or similar contrivances would be a great advantage in lessening the labor, by rendering the motion uniform.

By whatever means cream or milk is churned, the motion at first should be rather slow, increasing when the cream begins to swell. Sometimes the cream will swell so much that very rapid motion is required, but when it begins to sink, the motion should be lessened somewhat, and after the cream is "broken" it should be gradually slower till the butter is gathered into lumps.

We cannot better close this article than by copying from the *Country Gentleman*, a description of a dairy room belonging to HARVEY WING, Morris, N. Y., combining in an unusual degree the necessary requisites for successful butter making.

The room, (on the north side of the house) is sixteen feet long by ten feet wide, and is situated directly over a cold cellar, from which the air

may be drawn at pleasure by means of ventilators, for the perfect regulation of the temperature of the room. The places of these ventilators, (between the room and the cellar,) are shown in the plan Fig. 1., by the dotted lines on each side of the room, and they consist each of a single slit or opening, under the shelves, running the whole length of the room, and closed by a board with hinges precisely like a trap door.

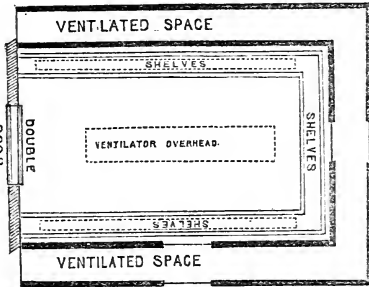


FIG. 1.

These slits are only six inches wide; it is believed that more perfect ventilation would be afforded, and a more complete control of the temperature attained, if they were nine inches or a foot wide.

Overhead, there is another ventilator, also closed by a similar trap door, 6 or 7 feet long and a foot wide, opening upwards. An elevating stick with holes or notches, enables the attendant to raise them to any desired degree. When the upper ventilator is opened, the heated air of the room passes out by reason of its specific levity, and the cold air from the cellar, immediately rises to supply the space,—in the same way that water rises to fill a pump when the air is drawn out above.

A ventilated space of one or two feet surrounds the room, and prevents the heating so often resulting from confined air in the adjacent walls. This ventilation is only partially effected in the instance before us, a temporary board partition being made to form the outer wall on the exterior side of the room—we have consequently figured in one plan, what it is *intended*

to be in this respect, rather than what we found it in actual practice.

The room is entered by a double door, the outer being a tight one to exclude hot summer air, and the inner of lattice or wire-gauze, to admit cool night air when necessary.

The shelves are not flat boards, as usually constructed, but are formed of two narrow strips of inch board on edge, on which the pans rest, thus admitting a free circulation of air on every side. The mode of constructing these shelves is

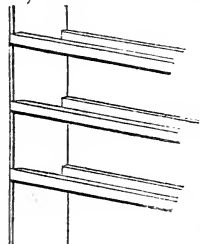


FIG. 3

shown in figs. 2 and 3. Fig. 2 exhibits the upright board support at the ends of the shelves and at intervals of five feet between; the notches

being made on each side to receive the horizontal strips which form the shelves. Fig. 3 shows a portion of the shelves completed. A space is left between them for the side window. The strips forming the shelves are 9 inches apart outside for each, and each strip 1 by 2 inches, set on edge. The shelves are 8 inches apart, or with 6 inches of clear space between them, for the reception of the pans.

It is found of great importance not to fill the pans to more than one-half their capacity—one-third is still better. The dairy, consisting of about 15 cows, requires nearly 200 twelve-quart pans at the season when milk is most abundant, the rising of the cream continuing longer than is common, on account of the perfect control of temperature which is secured by the ventilation of the room. There are 11 shelves, on 2 sides, with the exception of a space for windows, and they are capable of holding 250 pans if required

WINEGAR'S AUTOMATON GATE.

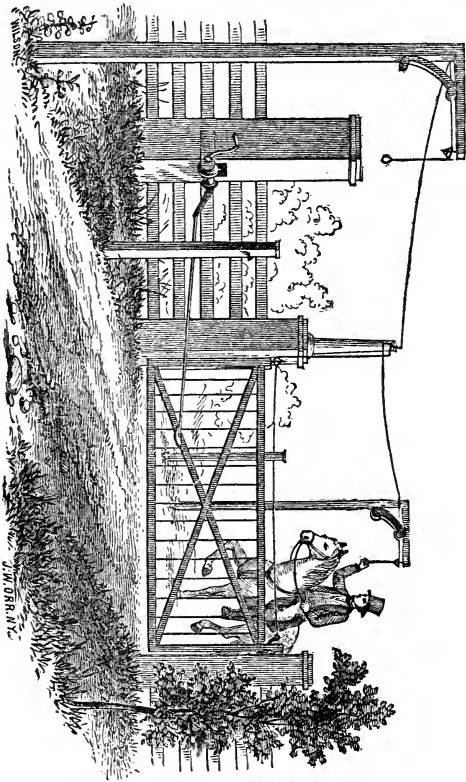
Equestrians and carriage-drivers have long felt it quite an annoying inconvenience, to be compelled to alight whenever passing a gate. The rich man's remedy is a porter's lodge, and a person hired by the year to open and shut the gate on the approach of any vehicle. But all this trouble may be easily and cheaply avoided by the use of *Winegar's Automaton Gate*, invented by C. WINEGAR, Esq., of Union Springs, N. Y., the successful operation of which we have had ample opportunity of witnessing.

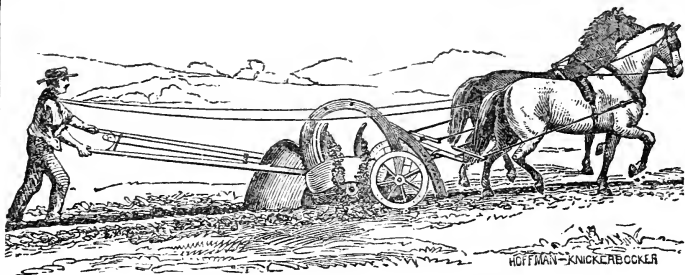
This contrivance, not unlike a clock, consists of two principal parts, the running and regulating parts. The weight which opens and shuts the gate, is contained in a tall box, seen on the left side of the figure, and resembling in external appearance a large post. The weight, in descending, turns a crank. A rod placed between this crank and the gate, and connected to each, receives by this means a reciprocating motion, and would open and shut the gate in rapid succession until the weight reaches the ground, were its motion not controlled by the latch which fastens it shut when it strikes the post, or which fastens it open as soon as it reaches the smaller post placed at the proper point for this purpose.

The opening and shutting is effected from the carriage or saddle by simply giving a slight pull or jerk on the loop suspended from the arm of the tall post, a short distance from the gate. A wire, extending from this loop to the hinge-post, and thence across the top of the gate to the latch, instantly sets it free whenever a slight pull is given, and the crank and rod immediately draw it open, where it is retained by the latch. On passing through, the loop is pulled on the other side, loosening the latch again, and causing the gate immediately to close.

The weight, when once wound up, will open and shut the gate about fifty times, and a boy ten years old will easily do it in a few seconds. In ordinary cases this will do if performed once a week, or if the gate be much used, it may be done each morning with the rest of the "chores." We consider it an important invention, and an admirable contrivance. The whole cost is \$10 to \$20.

WINEGAR'S AUTOMATON GATE.





PRATT'S DITCH DIGGER.

Nearly every important operation in modern improved farming, may now, through the improvements in machinery, be performed by horse power. The spade has given way to the subsoil and trench plow, the hand rake to the horse rake, the flail to the thrashing machine, hand sowing to the wheat drill, the scythe and cradle to the mower and reaper, and lastly, and by no means the least, an efficient ditch digging machine has been made and put into successful operation, that will work in almost any soil. The inventor is R. C. PRATT, and the manufacturers are PRATT & BROTHERS, of Canandaigua, N. Y.

We have tried this machine on our own land, and seen it operate in other places. A furrow is first turned with the common plow, and the ditcher then passes and repasses, throwing out from one to three inches of earth at each passage. In dry peaty ground, it will throw out five inches. It will cut 9 inches to a foot wide, and fully two feet and a half deep—it may be made to run down three feet. A small plow attached to the machine loosens the earth, and revolving shovels throw it out. Where there are no stones, one man with a team will cut 75 to 100 rods of ditch two and a half feet deep in a day. Where stones prevail, an additional hand or two are needed to loosen them with a crow bar, and throw them out as they are successively laid bare, and these will also reduce the daily amount of work to 50 or even down to 30 rods. This estimate is the result of our own experience and observation; and we are satisfied that the cost of digging ditches will be reduced to less than one half the present expense, by the use of PRATT'S DITCHER.

This machine is nearly all iron, is strong and well made, not liable to get out of order, so far as we have observed, and is sold at what we regard as a low price for the cost of manufacture, namely \$150.

RICHNESS OF MILK.—An experienced farmer says, "I find by skimming the milk separate, that *one* of my best cows will make as much butter as *three* of my poorest cows, giving the same quantity of milk."

FEEDING CATTLE.—Cattle standing in cold muddy yards, exposed to the weather, consume about twice as much as those in sheltered stables kept clean and littered, and free from the accumulations of manure.

ALLEN'S MOWING MACHINE.

Since the publication of the Register for 1855, which noticed several of the principal mowing machines then in use, another has been brought before the public, which has been proved of great efficiency and value. This is *Allen's Mower*, as improved and now

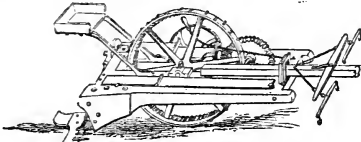


FIG. 1.

manufactured by R. L. ALLEN, of New-York. Having witnessed its operation, and received information from several intelligent farmers who have given it a thorough trial, we are satisfied that taken all together it has no superior, and in some respects it excels any other machine that we have examined.

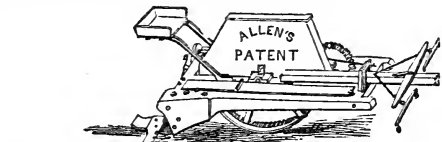


FIG. 2.

Among those advantages which this mower particularly possesses, lightness, ease of draft, and efficiency on both rough and smooth land, appear to be conspicuous. As recently improved, it appears also to be capable of running long without needing repairs; to cut well while the horses are moving at a slow pace; to cut high or closely to the ground, as may be required; is not easily clogged; and may be easily backed, or transferred from place to place.

Fig. 1 represents the mower with the cover off, to show the gearing; and Fig. 2 the same with the cover on. The driver in riding, places one foot on each side of this cover, and is thus firmly secured in his seat, however rough the ground may be.

The price of this mower is \$120, or with mower and reaper, \$140.

HORTICULTURAL HINTS.—To preserve plum trees from black knots or excrescences, cut them off several times a year, *cut and keep cutting*.

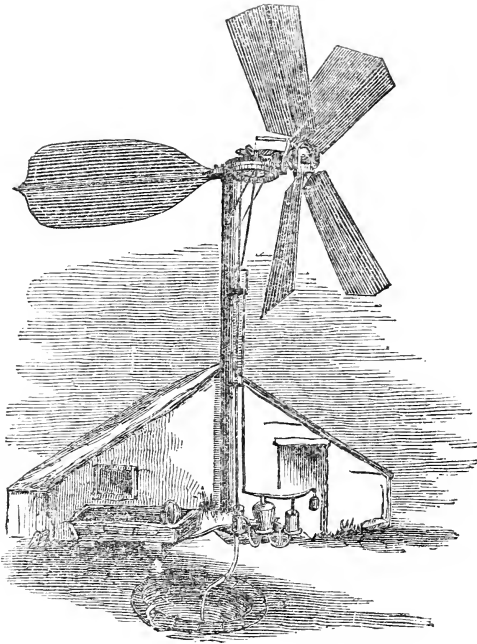
To prevent the cherry crop from being spoiled by the curculio, *keep the ground from grass*.

The only remedy for the cherry bird, is shooting—hundreds have thus been driven away by a few hours labor, *so that one was not seen for a week*.

The best remedy for bugs on melons and squashes, is a cheap square box, covered with gauze or netting.

To transplant evergreens, one point attended to will result in success—neglected, in failure—this is, *removing plenty of the earth with the roots*.

Mulching and watering the raspberry on light soils, will usually double the size of the fruit.



HALLADAY'S WIND-MILL.

Steam, horse, and water-power, have been variously used for driving stationary machinery. The two former require the expenditure of fuel or feed, and the latter does not exist on many farms, and can be only occasionally used. But there is another, and universal power—found on every part of every single farm in the world—and sweeping over all with a strength of thousands of horses—which has been very little used for farm purposes. This is wind.

The great difficulty in the way of the general use of wind-power, is its unsteadiness. Common wind-mills of much size cannot be run in any weather of a tempestuous character, and much care is needed in regulating; rendering its ordinary use impracticable. Small wind-mills, not over four feet in diameter, have been successfully applied to the pumping of water, where the wells were not deep; but unless well made, even these are liable to be broken by strong blasts.

These difficulties have been very successfully overcome by Halladay's Self-Regulating windmill, invented by DANIEL HALLADAY, of Ellington, and manufactured by the Halladay Windmill Company, of South

Coventry, Ct. The self-regulating part is not unlike that of the *governor* of a steam engine. When a strong wind drives the mill too fast, the excess of water driven by a forcing pump against a piston, is made by a set of rods and levers to turn the edges of the sails more against the wind, and when the wind subsides, the same cause restores them to their former position.

These windmills are chiefly intended for farmers, and may be applied to various other purposes besides pumping water. It is now about two years since their manufacture was commenced, and we have heard of none out of the many which have been erected, that have been blown down or injured by the wind. The cost of the smaller size is \$75.

SCOTT'S CORN AND COB-MILL.

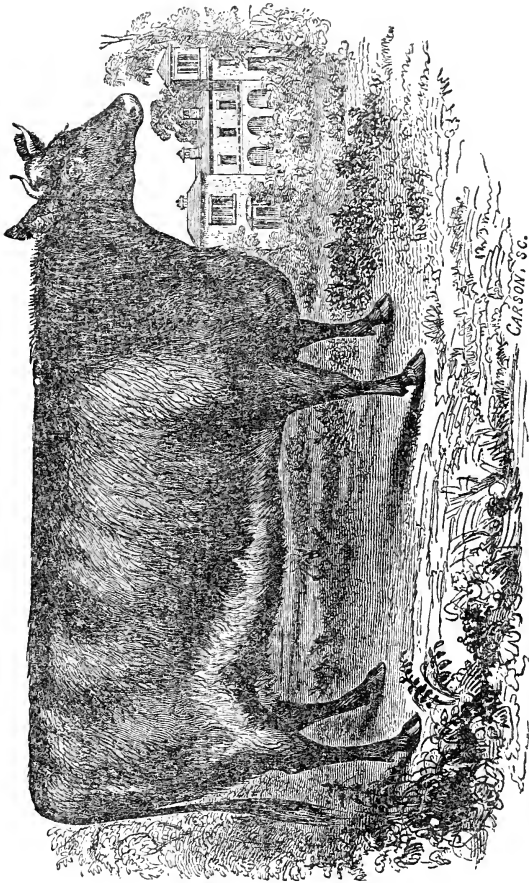


For grinding corn in the cob, and other coarse feed, for domestic animals, and saving the toll and drawing to mill, by the use of horses on rainy or spare days, probably nothing equals Scott's CORN AND COB MILL, manufactured by R. Scott & Co., of Philadelphia, and others. It is strong; weighs only three to five hundred pounds; costs from \$44 to \$66, varying with size, and with one or two horses will grind into coarse meal from eight to twenty bushels of corn per hour. Several thousands of these mills have been sold, and so far as we know, have given satisfaction — some asserting

that they have paid for themselves in a single month.

STEALING FROM GARDENS.—The author of "Rural Hours," after speaking of some well dressed girls, "elegantly flounced," &c., reaching their hands through the garden fence, and helping themselves to some of the finest and rarest flowers, just as if they had a right to them, asks the very pertinent question, "What would they have thought if some one had stepped up with a pair of scissors, and cut half a yard from the ribbon on their hats, merely because it was pretty, and one had a fancy to it?" Yet the flowers cost more time, labor, and money, and could not be so easily replaced.

UNITED STATES STANDARD BUSHEL.—This contains 2150.42 cubic inches. Its dimensions are $18\frac{1}{2}$ inches (inside) diameter, and 8 inches deep, and when heaped the cone must be at least 6 inches high.

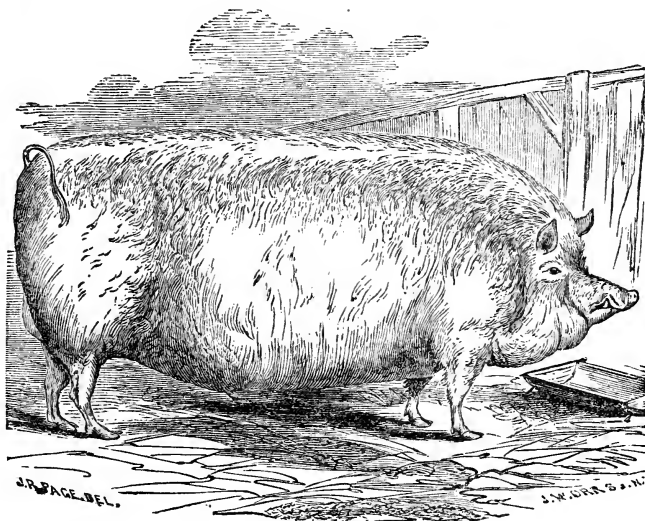


CARSON, SC.

SHORT-HORN COW JACINTHA.

IMPROVED ANIMALS.

We gave portraits in last year's REGISTER, illustrating some of the best breeds of animals, with the hope that they might prove useful to farmers in selecting good blood to infuse into their herds by crossing with natives. We now furnish engravings of some single individuals of recent importation or raising, in further illustration of the character of these breeds.



SUFFOLK.

The above is a portrait of a fine animal of the Suffolk breed, belonging to LEWIS G. MORRIS, of Mount Fordham, near New-York. It won one of the first prizes at the New-York State Show in 1853.

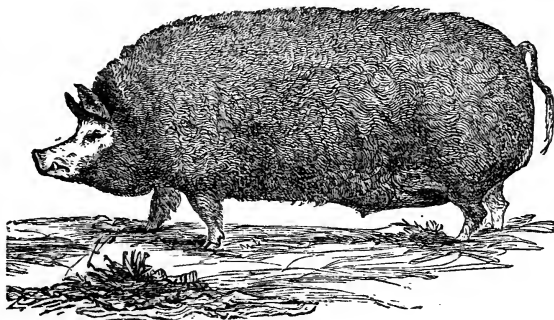
The Suffolk is an admirable breed for crossing with the larger and more hardy animals among our native swine, and is deservedly more popular than any other improved breed for this purpose.

A correspondent of the *Country Gentleman*, speaking of the Suffolks, says:—"In all the good qualities that constitute a perfect animal for producing the most pork, of the best quality, at the least cost, this family stands unrivalled as yet by any in the United States. Their merit in part consists in size, length of quarters, short and lean dished heads; fine, thin, and upright ears; prominent eyes; fine tail, and limbs; quietness; and, above all, their perfect adaptation to take fat readily on the most valuable parts. I have slaughtered hogs of this breed whose live and dressed weights differed less than a ninth." The introduction of these animals



SOUTH-DOWN.

into the State is a matter in which our farmers are much interested; and all who can should avail themselves of the benefit to be derived from them.



BERKSHIRE.

Scarcely inferior in any particular to the Suffolk, is the improved BERKSHIRE, although it is disliked for its usual black color. The above figure represents one of L. G. MORRIS' finest boars of this breed.

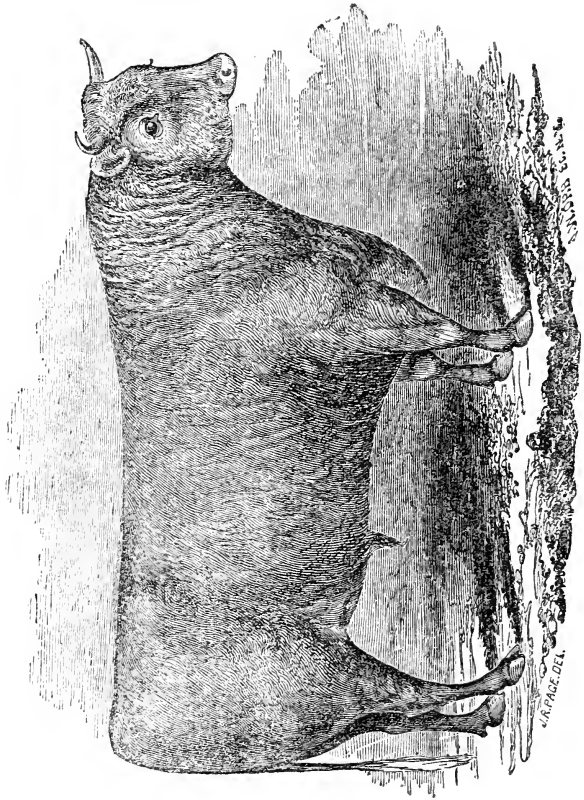
SOUTH DOWN SHEEP.

Beautiful South Down Sheep, from the celebrated herd of JONAS WEBB in England, have been imported by JONATHAN THORNE of Dutchess county, and L. G. MORRIS of Fordham, N. Y., and so perfect are these animals of their kind, that before importation, was several hundred dollars each were paid to obtain them. The excellent portraits which we give, hardly do justice to their full and symmetrical form. (For illustration, see page 262.)

IMPROVED CATTLE.

The two favorite breeds of cattle; with most of our enterprising farmers, are the Short Horns and Devons. In many districts of country, a great and striking improvement has been effected in the common herds by crosses with the Short Horns; and the rapid introduction of the Devons is likely to result in a similar advantage; the former increasing the size, early maturity, and fullness and symmetry of form—and the latter, the compactness, finish, hardiness, and beautiful exterior—of our native animals.

The accompanying portraits represent excellent specimens of each of these breeds, imported by L. G. MORRIS, of Fordham. (For illustrations, see pages 260 and 264.)



DEVON BULL

DOMESTIC ECONOMY.

WASHING FLANNEL. To prevent flannel from shrinking and turning yellow, wash them in hot suds, and rinse them in clear, soft, boiling water—standing till cool enough to wring out.

INK SPOTS may be removed from linen by dropping melted tallow on them, and then washing.

A GOOD RAT TRAP may be made by filling a smooth kettle to within six inches of the top with water, and covering the surface with chaff. The first chap who gets in makes an outcry because he cannot get out, and the rest coming to see what the matter is, share his fate.

TO REMOVE OLD PUTTY, moisten it with muriatic acid, and it will immediately become soft.

TO WASH SILK WITH GREAT SUCCESS, spread it on a table, and then rub it with a sponge dipped in a mixture of equal parts of soft soap, brandy, and cane molasses. Rinse it thoroughly in three successive portions of water, and iron it before quite dry.

WOUNDS IN CATTLE are quickly cured by washing several times a day with a mixture of the yolk of eggs and spirits of turpentine.

PAINTING HOUSES. The paint will harden better and last twice as long by being applied late in autumn, than during the hot season.

MARBLE FIREPLACES AND TABLES. Never wash them with soap suds—the potash of the soap decomposes the carbonate of lime, and in time destroys the polish.

DOOR KNOBS. To secure the paint around them in cleaning, place a piece of pasteboard with a hole cut to encircle them, and a slit to slip on.

GRIDDLE CAKES. To prevent them from sticking, rub salt over the griddle with a piece of bread before greasing.

MOTHS are effectually excluded from clothes kept in cedar chests, or with cedar shingles occasionally laid between the clothes, in wardrobes, closets, &c.

FLAT IRONS, if rough or smoky, will not stick to a starched surface, if rubbed over a flat surface of salt laid on a board or table.

CRACKS IN STOVES may be effectually stopped by a paste made of ashes and salt, with water. Iron filings and sal ammoniac make a still harder and firmer cement.

GILT FRAMES, if cleaned are soon worn and spoiled—to prevent which, preserve them by applying a transparent varnish.

TO DRY PUMPKINS, stew them first—they will be as good as fresh pumpkins in winter. Finish the drying in a warm oven.

TO PREVENT COLORS FADING. Dip new calico, pocket-handkerchiefs, &c., in salt water.

BEE STINGS may be quickly cured by applying repeatedly a soft paste made of saleratus and water—the potash neutralizes the acid poison.

A GLASS STOPPER, when too tight to be easily removed, may be easily loosened by applying a cloth wet in hot water, which expands the neck and sets it free.

ADHESIVE PASTE, made of rye flour, with a little alum added while it is boiling, is almost as strong as glue.

CARPETS last longest by being often shaken, preventing the dirt under and in them from grinding out the texture; and by not being swept too frequently.

MINCE PIE MEAT will keep well for several months, boiled, chopped, and packed down in a stone jar covered with molasses.

SAUSAGE MEAT is best preserved in new cotton bags a foot long and two or three inches in diameter, which after filling are dipped in and coated with melted lard. When used, the bag is sliced off with the meat, as it is much easier to make new ones than to preserve the old.

WEEKLY EXAMINATIONS. See that beef and pork are under brine; count towels, sheets, spoons, &c.; examine preserves and see they do not become mouldy; mend all garments; see that vegetables in the cellar are not sprouting and becoming mouldy; count clothes-pins; stir Indian meal to prevent fermentation.

FRAGMENTS OF BREAD may be all saved by making them into toast and puddings, and they also make excellent pancakes, by soaking over night in milk, and then adding an egg or two and a little salt and flour.

PRESERVES. If fermenting, boil them, and add a little powdered sale-ratus, say size of a pea for a quart or two, but more if much fermented.

BLACK ANTS. A correspondent of the *Country Gentleman*, says he tried many remedies for black ants without any success. His ground being gravelly, he could not make holes with the crowbar to entrap them; tin cylinders, sunk in the earth, containing molasses, they went into—helping themselves with the molasses, and crawling out again. Tar round his trees became crusted in one day, and they crawled over it. They seemed to care nothing for all his attempts to get rid of them. He at length presented them a *bill for collection*, for damages done, and that answered completely. Chickens completely routed them,—the coops being placed about the garden walks. In one week, the last ant disappeared.

TO MAKE HEMLOCK BEER FOR THE SICK. Fill a very clean two gallon iron kettle with hemlock branches and with cold water, and add two quarts of wheat bran; boil nearly an hour, strain and sweeten it with nearly a pound of sugar, add a teacup full of fresh yeast. As soon as fermentation commences, bottle it for future use. Tried, and found right.

CHURNING. In churning butter, if small granules of butter appear which do not "gather," throw in a lump of butter, and it will form a nucleus, and the butter will "come."

TO REMOVE RUST FROM KNIVES, &c. Cover the knives with sweet oil, well rubbed on, and after two days, take a lump of fresh lime, and rub till all the rust disappears. It forms a sort of soap with the oil, which carries off all the rust.

TO CLEAN BRASS. Rub the tarnished or rusted brass, by means of a cloth or sponge, with diluted acid, such as the sulphuric, or even with strong vinegar. Afterwards wash it with hot water, to remove the acid, and finish with dry whitening.

GLOSS ON LINEN. To restore the gloss commonly observed on newly purchased collars and shirt bosoms, add a spoonful of gum-arabic water to a pint of the starch as usually made for this purpose. Two ounces of clear gum-arabic may be dissolved in a pint of water, and after standing over night, may be racked off, and kept in a bottle ready for use.

TO THAW FROZEN PUMPS. Some throw in salt, some heat iron rods, &c., but an incomparably better way is to place a small lead pipe within the pump, and pour in hot water by means of a funnel. The pipe should be as long as the frozen portion; and conducting the boiling water right on the ice, removes it with astonishing rapidity, say one foot per minute,

the pipe settling as rapidly. Where pumps are liable to freeze, it is well to have a lead pipe always at hand.

OILING LATCHES AND HINGES. Every person who lives in a house, should spend fifteen minutes once every month in going over every part with a teaspoonful of oil and a feather, and give all the hinges, locks and latches a touch. It will save an incredible amount of scraping, banging, jarring, squeaking, harsh grating, dismal creaking, and other divers and several noises, which result from the want of a little oil.

INTERESTING FACTS FOR FARMERS.

THE WAY WEEDS MULTIPLY. Dr. Lindley estimates as a low average the following number of seeds from each of these four plants:

1 plant of Groundsel produces.....	2,080	} 16,360 plants,
1 " Dandelion "	2,740	
1 " Sow Thistle, "	11,040	
1 " Spurge "	540	

or enough seed from these four plants to cover three acres and a half, at three feet apart. To hoe this land, he says, will cost 6s. (sterling) per acre, and hence a man throws away 5s. 3d. a time, as often as he neglects to bend his back to pull up a young weed before it begins to fulfil the first law of nature. He recommends every gardener, whose vertebral column will not bend, to count the number of dandelions, sow thistles, &c., on the first square rod he can measure off. This same operation may be repeated in this country, by applying all the above estimates to the pig-weed, burdock, mullein, fox-tail, chick-weed and purslane.

PLOWING HEAD-LANDS. We observe that this is often inconveniently and awkwardly done. The best way is to leave strips of untouched land at the sides, as well as at the ends of the field, all of equal width, and then the whole is finished by going round with one continuous furrow until it is finished close to the fence. In this way none of the newly plowed ground is trodden hard.

STRIKING ILLUSTRATION. At the Agricultural Convention held in Boston in March last, the presiding officer, Hon. M. P. WILDER, in the course of an able speech showing the advantage of improving agriculture, gave the following example:—"We have 150,000 cows in this Commonwealth. Suppose science enable these, or improved breeds, to yield *one* additional quart of milk per day, this at 3 cts. per quart, would increase the productive capital of the State \$4,500 per day, or \$1,642,500 per year; or if two quarts per day, a gain of more than *three million dollars* annually.

DURABILITY OF RED CEDAR. We have heard of an old farmer, who, when asked how he knew that cedar posts would "last forever," said he had frequently tried the experiment. Some may doubt his assertion, yet its lasting powers have been found to exceed a long lifetime. At the head of one of the graves in "Old St. Mary's," Md., there stands a cedar slab, which, as the inscription indicates, was placed there in 1717, and is still perfectly sound.

BREAKING HALTERS. It is a serious fault for a horse to pull at his halter. An animal of this character was tied to a stake on the bank of a stream, with his tail towards the water. He snapped the halter, tumbled

over the bank, floundered in the water to his heart's content, and afterwards was willing to remain "at his post."

AGRICULTURAL PAPERS. Every farmer, however small his farm, can well afford to take a good agricultural paper, to assist him in the erection of suitable buildings and fences; the making and saving manure; the selection of proper agricultural implements; the best kinds of stock and fruit; the feeding and fattening of cattle; the management of his land and crops; thus obtaining the united wisdom and experience of science and the best practical farmers, not only of our own country, but of the civilized world.

DEEP AND SHALLOW PLANTING. C. L. SHEPHERD, of Illinois, planted his corn-field shallow, or about an inch deep, except eight rows through the middle, which were planted two or three inches deep. The shallow corn came up first, and kept the lead during the whole season. The difference was discernible as far as the corn could be seen.

WASH FOR BARNs. The *Horticulturist* gives the following as the best for this purpose: Hydraulic cement, 1 peck; freshly slacked lime, 1 peck; yellow ochre, (in powder,) 4 lbs.; burnt umber, 4 lbs.; the whole to be "dissolved" in hot water, and applied with a brush.

BENEFIT OF DEEP PLOWING. The *Michigan Farmer* states that H. B. LATHROP, of Jackson county, in that State, put in a piece of wheat, plowing not less than eight inches deep. At the same time, a neighbor plowed an adjoining field, being careful that the plow did not run more than four inches deep. The deep plowing gave *thirty-two* bushels to the acre, and the shallow plowing only *seven*. A portion of the sub-soil often operates as manure, and a deep soil prevents excessive flooding, as well as excessive drouth. The result, however, may vary much with change in localities, but may be easily determined by experiment.

DURABILITY OF POSTS. In a recent discussion, one member said he had used burr-oak posts 7 years, and thought they would last 6 or 7 years longer. White-oak will last, according to another member, 10 or 12 years; locust 20 years or more. Another stated that cherry rotted in 8 or 9 years; white-oak in 10 to 14 years; black-walnut in 9 to 10 years; locust 20 years. Much depends, it was affirmed, on the character of the soil; moist land causing a sooner decay than dry.

HEDGES FOR FLOODED LANDS. M. B. BATEHAM, of the *Ohio Cultivator*, states that a two year old osage orange hedge was submerged a week without injury, where peach trees were killed by the flooding.

PARSNIPS FOR HOGS. Parsnips appear to be nearly the only root, good for swine in an uncooked state. Turn a herd of swine into a field containing field beets, ruta bagas, carrots, and parsnips, and the question will very soon be settled which they like best, and which, consequently, is best for them—the parsnips being wholly devoured before the others are touched.

BALKY HORSES. It is said to be a first rate way to treat balky horses, by hitching a good steady horse and team behind them. They will soon forget their peculiar propensities and be glad for a chance to move the other way.

FOOD FOR SICK ANIMALS. The American Vet. Journal states that an excellent diet for sick animals, is simply *scalded shorts*. When a horse has taken cold, with discharge from the nostrils, the *mash* may be put into the manger while hot, with a view of steaming the nasal passages.

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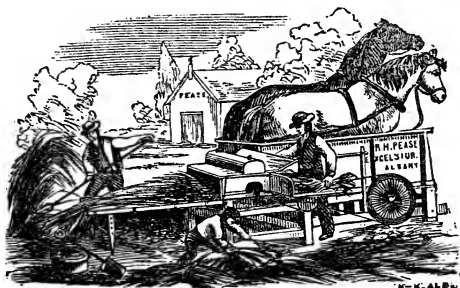
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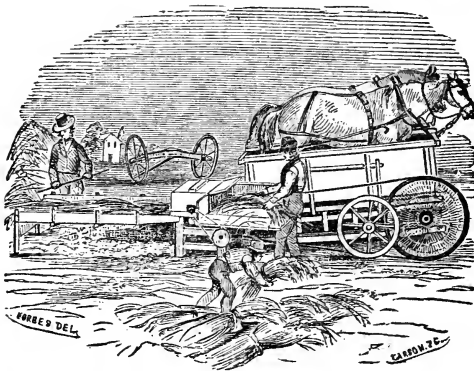
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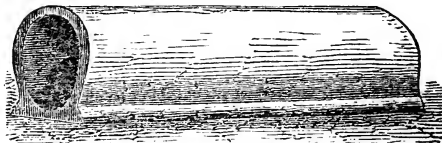
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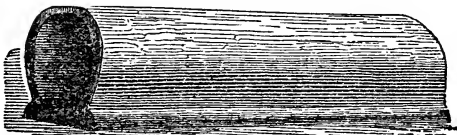
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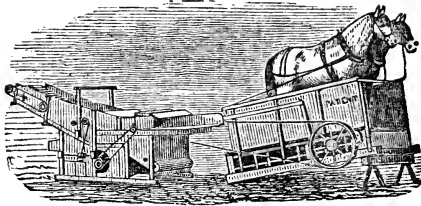
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