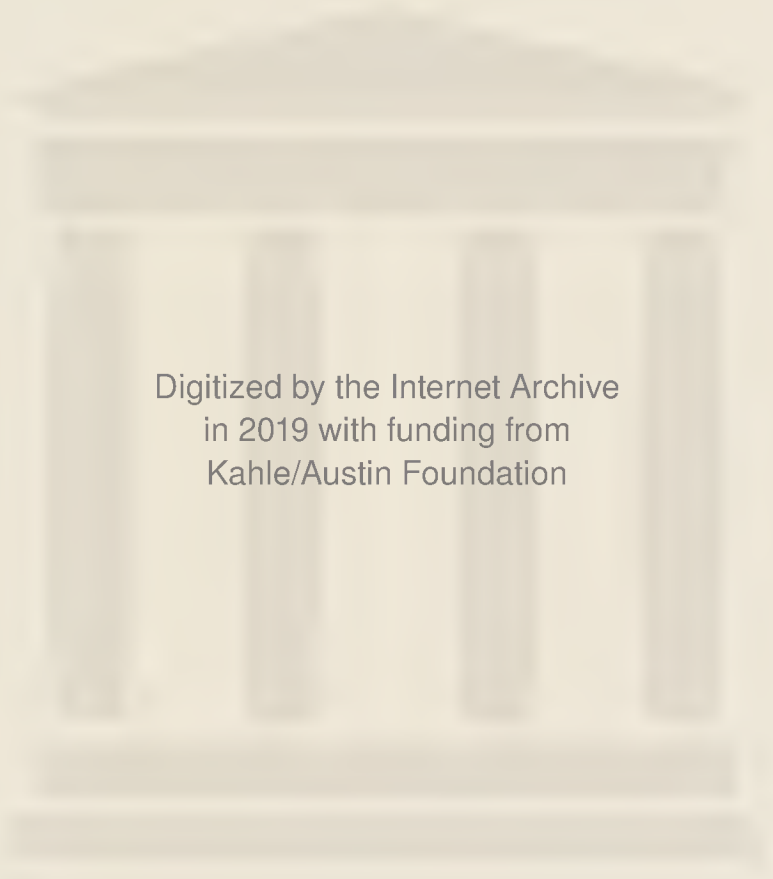
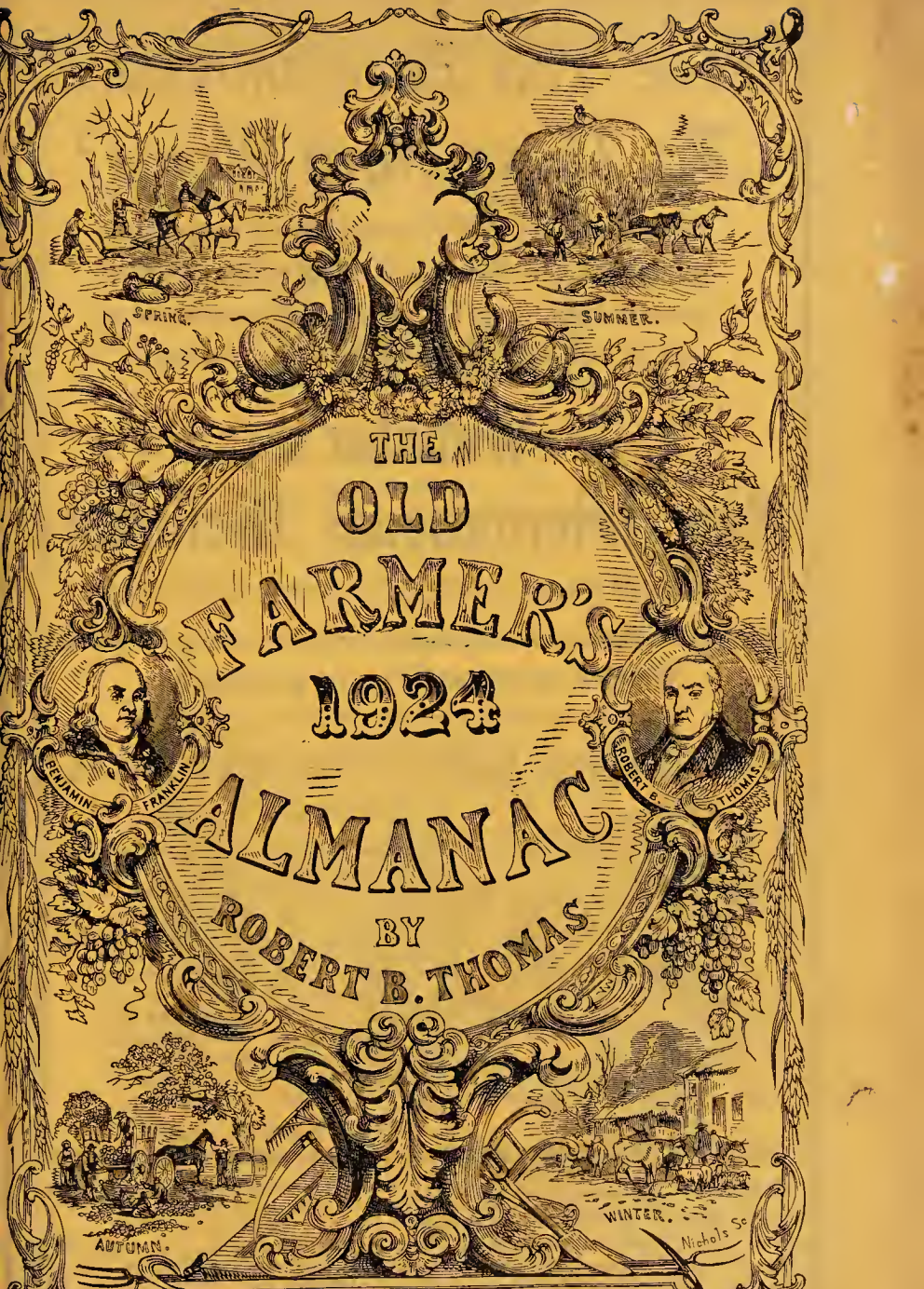


132d Year



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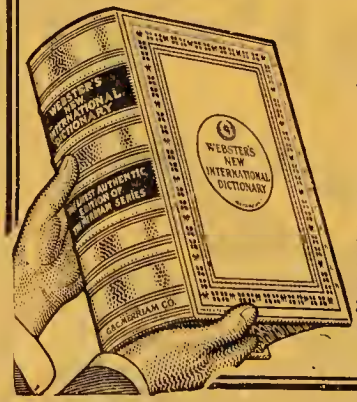

Here are Samples:

Czecho-Slovak	aerial cascade
junior college	agrimotor
capital ship	mud gun
Devil Dog	broadcast
overhead	daylight saving
megabar	Schick test
duvetyn	rotogravure
vitamin	Air Council
kafirin	mystery ship
Murman Coast	marquisette
mirrorscope	royal spade
novocaine	hot pursuit
camp-fire girl	plasmon

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(OLD)

FARMER'S ALMANACK,

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FOR THE YEAR OF OUR LORD

1924

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148th of American Independence.

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Welcome, O morning air of health and strength!
O glad New Year, bring us new hope tomorrow,
With blossom, leaf and fruitage bright at length.

CELIA THAXTER.

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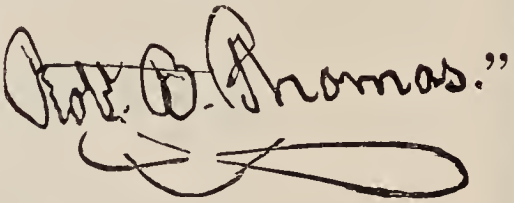
TO PATRONS AND CORRESPONDENTS.

The number we now submit to you is our *One Hundred and Thirty-second.* But however many the years that have passed, each new year brings new tasks to hand.

"God be thank'd that the dead have left still
Good undone for the living to do—
Still some aim for the heart and the will
And the soul of a man to pursue."

So we repeat once more,

"It is by our works and not by our words we would be judged: these we hope will sustain us in the humble though proud station we have so long held. . . .



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EXPLANATIONS FOR CALENDAR PAGES.

The **Calculations** are made for the latitude and longitude of Boston and are in *Eastern Standard Time*, i. e., the time of the 75th meridian West from Greenwich, which is 16 minutes behind Boston mean time; and for general purposes are sufficiently accurate for all parts of New England. If, however, greater accuracy is desired, regard may be had to the following precepts.

The Table given below contains corrections in minutes of time for a number of important places in New England, and any other place in New England can use the correction of the place in the Table which is nearest in longitude to itself.

For the Rising and Setting of the Sun, Moon and Planets add tabular quantity if longitude from Boston is West, but subtract it if East; and this will give the value when the place is in or near the same latitude as Boston. When the latitude of the place differs considerably from that of Boston, the correction will also be right when the celestial body is on or near the Equator; but when it is remote from the Equator so much accuracy cannot be expected.

For Sun Fast, subtract tabular quantity if longitude from Boston is West, but add it if East.

For Moon Souths, add tabular quantity if longitude from Boston is West, but subtract it if East.

	East.		*West.*		*West.*
Eastport, Me.	16 min.	Concord, N. H.	2 min.	Springfield, Mass.	6 min.
Bangor, Me.	9 "	Nashua, N. H.	2 "	Williamstown, Mass.	9 "
Augusta, Me.	5 "	Plymouth, N.H.	3 "	Newport, R. I.	1 "
Lewiston, Me.	4 "	Keene, N. H.	5 "	Providence, R. I.	1 "
Portland, Me.	3 "	Montpelier, Vt.	6 "	Woonsocket, R.I.	2 "
Biddeford, Me.	2 "	Brattleboro, Vt.	6 "	New London, Conn.	4 "
Portsmouth, N.H.	1 "	Rutland, Vt.	8 "	Willimantic, Conn.	5 "
Provincetown, Mass.	4 "	Burlington, Vt.	9 "	Hartford, Conn.	6 "
Gloucester, Mass.	2 "	Lowell, Mass.	1 "	New Haven, Conn.	7 "
Plymouth, Mass.	2 "	Worcester, Mass.	3 "	Bridgeport, Conn.	9 "

If during any part of the year 1924 there is in operation in any State or City of New England any of the so-called "*daylight saving*" laws or ordinances, proper allowance for that should be made in applying the figures of time given in the Almanac, which figures, as above stated, are all herein given in *Eastern Standard Time*.

The **Times and Heights of the Tides at High Water** are for the Port of Boston (Navy Yard). The times of High Water are given on the left hand Calendar pages under "Full Sea." The heights of High Water in feet and tenths are given among other data on the right hand Calendar pages under "Aspects," &c. The heights are reckoned from Mean Low Water; each day has a set of figures—many of them preceded by the word "Tides." The upper figures give the height of the morning (A.M.) tide, and the lower that of the evening (P.M.) tide.

Names and Characters of the Principal Planets.

☉ ☼ ☺ ☻ The Sun.	♀ Venus.	♃ Jupiter.	♆ Neptune.	⚴ Juno.
● ☽ ☾ ☇ The Moon.	⊕ The Earth.	♄ Saturn.	⚶ Vesta.	⚴ Pallas.
☿ Mercury.	♂ Mars.	♅ or ⛢ Uranus.		⚳ Ceres.

Names and Characters of the Aspects.

☌ Conjunction, or in the same degree.	☊ Dragon's Head, or Ascending Node.
□ Quadrature, 90 degrees.	☋ Dragon's Tail, or Descending Node.
☍ Opposition, or 180 degrees.	

Names and Characters of the Signs of the Zodiac.

1. ♈ Aries, head.	5 ♌ Leo, heart.	9. ♐ Sagittarius, thighs.
2. ♉ Taurus, neck.	6. ♍ Virgo, belly.	10. ♑ Capricornus, knees.
3. ♊ Gemini, arms.	7. ♎ Libra, reins.	11. ♒ Aquarius, legs.
4. ♋ Cancer, breast.	8. ♏ Scorpio, secrets.	12. ♓ Pisces, feet.

Chronological Cycles for 1924.

Golden Number	6	Solar Cycle	1
Epact	24	Dominical Letter	FE
		Roman Indiction	7
		Year of Julian Period,	6637

Movable Feasts and Fasts for 1924.

Septuagesima Sun.,	Feb. 17	Good Friday,	April 18	Whit-Sunday,	June 8
Shrove Sunday,	Mar. 2	Easter Sunday,	" 20	Trinity Sunday,	" 15
Ash Wednesday,	" 5	Low Sunday,	" 27	Corpus Christi,	" 19
1st Sunday in Lent,	" 9	Rogation Sunday,	May 25	1st Sunday in Advent,	Nov. 30
Palm Sunday,	April 13	Ascension Day,	" 29		

ECLIPSES FOR THE YEAR 1924.

In the year 1924 there will be five Eclipses, three of the Sun and two of the Moon; also a Transit of Mercury.

I. A Total Eclipse of the Moon, February 20, invisible in New England.

The beginning of the Eclipse will be visible generally in the extreme northwestern part of North America, the Pacific Ocean, Australia, Asia, and the Indian Ocean; the ending will be visible generally in the western part of the Pacific, Asia, Australia, the Indian Ocean, Europe, and Africa, except the extreme northwestern part.

II. A Partial Eclipse of the Sun, March 5, invisible in New England.

The Eclipse will be visible generally over the southern part of the South Atlantic Ocean, and the Antarctic Ocean.

III. A Partial Eclipse of the Sun, July 31, invisible in New England.

The Eclipse will be visible only in the Antarctic Ocean, less than one fifth of the Sun's diameter being obscured.

IV. A Total Eclipse of the Moon, August 14, invisible in New England.

The beginning of the Eclipse will be visible generally in the western part of the Pacific, Australia, Asia, the Indian Ocean, eastern and central Europe, and Africa, except the northwestern part; the ending will be visible generally in central and western Asia, western Australia, the Indian Ocean, Europe, Africa, the Atlantic Ocean, and eastern and central South America.

V. A Partial Eclipse of the Sun, August 29, invisible in New England.

The Eclipse will be visible generally over the Arctic Ocean, Greenland, except the southern portion, the extreme northern part of Europe, and the northeastern part of Asia.

VI. A Transit of Mercury over the Sun's disk, May 7, partly visible in New England, the Sun setting before egress of the Planet.

At Boston, the external contact occurs at about 4h. 42m. 27s., and the internal contact at about 4h. 45m. 27s.

The ingress will be visible generally in the western part of the Atlantic Ocean, North America, northern and western parts of the South Atlantic Ocean, the Pacific Ocean, eastern Asia, and eastern Australia; the egress will be visible generally in the extreme northwestern part of North America, the Indian Ocean, Europe, and Africa, except the extreme northwestern part.

THE SEASONS, 1924.

Winter begins	1923,	December	22,	3h.	54m.	P. M.	— Sun enters	Capricornus,	♑
Spring	"	1924,	March	20,	4h.	20m.	P. M.	"	"	Aries,	♈
Summer	"	"	June	21,	0h.	0m.	P. M.	"	"	Cancer,	♋
Autumn	"	"	September	23,	2h.	59m.	A. M.	"	"	Libra,	♎
Winter	"	"	December	21,	9h.	46m.	P. M.	"	"	Capricornus,	♑
Spring	"	1925,	March	20,	10h.	13m.	P. M.	"	"	Aries,	♈

Length of	Winter,	1923–1924,	89	days,	0	hours,	26	minutes.
" "	Spring,	1924,	92	"	19	"	40	"
" "	Summer,	"	93	"	14	"	59	"
" "	Autumn,	"	89	"	18	"	47	"
" "	Winter,	1924-1925,	89	"	0	"	27	"

EARTH IN PERIHELION AND APHELION, 1924.

January 1, 1924, 10h. P.M., Earth in Perihelion; distant from the Sun about 91,341,000 miles. July 3, 9h. A.M., Earth in Aphelion; distant from the Sun about 94,459,000 miles.

MORNING AND EVENING STARS, 1924.

Mercury will be most favorably situated for being seen about February 5, June 3, and September 27, in the East, just before Sunrise, as Morning Star; and April 16, August 14, and December 9, in the West, just after Sunset, as Evening Star; a transit of Mercury, partly visible in New England, is noted under "Eclipses."

Venus will be Evening Star until July 1, then Morning Star the rest of the year.

Mars will be Morning Star until August 23, then Evening Star the rest of the year.

Jupiter will be Morning Star until June 5, then Evening Star until December 23, then Morning Star the rest of the year.

Saturn will be Morning Star until April 19, then Evening Star until October 28, then Morning Star the rest of the year.

VENUS, MARS, JUPITER AND SATURN, 1924.

Below are given the times of the rising or setting of the Planets named, on the first, tenth and twentieth days of each month. The time of the rising or setting of any one of said Planets between the days named may be found with sufficient accuracy by interpolation.

		VENUS	MARS	JUPITER	SATURN
		h. m.	h. m.	h. m.	h. m.
JANUARY	1st	sets 6 35 P.M.	rises 3 8 A.M.	rises 4 49 A.M.	rises 1 36 A.M.
"	10th	" 6 58 P.M.	" 3 2 A.M.	" 4 23 A.M.	" 1 3 A.M.
"	20th	" 7 23 P.M.	" 2 56 A.M.	" 3 53 A.M.	" 0 26 A.M.
FEB'ARY	1st	sets 7 53 P.M.	rises 2 48 A.M.	rises 3 16 A.M.	rises 11 37 P.M.
"	10th	" 8 14 P.M.	" 2 41 A.M.	" 2 47 A.M.	" 11 1 P.M.
"	20th	" 8 37 P.M.	" 2 32 A.M.	" 2 14 A.M.	" 10 22 P.M.
MARCH	1st	sets 9 0 P.M.	rises 2 23 A.M.	rises 1 40 A.M.	rises 9 41 P.M.
"	10th	" 9 20 P.M.	" 2 13 A.M.	" 1 9 A.M.	" 9 4 P.M.
"	20th	" 9 43 P.M.	" 2 1 A.M.	" 0 33 A.M.	" 8 22 P.M.
APRIL	1st	sets 10 8 P.M.	rises 1 44 A.M.	rises 11 43 P.M.	rises 7 30 P.M.
"	10th	" 10 24 P.M.	" 1 29 A.M.	" 11 8 P.M.	" 6 51 P.M.
"	20th	" 10 38 P.M.	" 1 12 A.M.	" 10 27 P.M.	sets 5 15 A.M.
MAY	1st	sets 10 46 P.M.	rises 0 51 A.M.	rises 9 41 P.M.	sets 4 30 A.M.
"	10th	" 10 44 P.M.	" 0 33 A.M.	" 9 2 P.M.	" 3 53 A.M.
"	20th	" 10 32 P.M.	" 0 12 A.M.	" 8 17 P.M.	" 3 12 A.M.
JUNE	1st	sets 10 0 P.M.	rises 11 41 P.M.	rises 7 23 P.M.	sets 2 23 A.M.
"	10th	" 9 22 P.M.	" 11 19 P.M.	sets 4 2 A.M.	" 1 47 A.M.
"	20th	" 8 23 P.M.	" 10 52 P.M.	" 3 18 A.M.	" 1 7 A.M.
JULY	1st	rises 4 27 A.M.	rises 10 21 P.M.	sets 2 30 A.M.	sets 0 23 A.M.
"	10th	" 3 36 A.M.	" 9 53 P.M.	" 1 52 A.M.	" 11 44 P.M.
"	20th	" 2 47 A.M.	" 9 19 P.M.	" 1 10 A.M.	" 11 5 P.M.
AUGUST	1st	rises 2 5 A.M.	rises 8 35 P.M.	sets 0 17 A.M.	sets 10 19 P.M.
"	10th	" 1 44 A.M.	" 7 58 P.M.	" 11 41 P.M.	" 9 45 P.M.
"	20th	" 1 31 A.M.	" 7 13 P.M.	" 11 3 P.M.	" 9 7 P.M.
SEPTEM'R	1st	rises 1 27 A.M.	sets 4 8 A.M.	sets 10 18 P.M.	sets 8 22 P.M.
"	10th	" 1 30 A.M.	" 3 24 A.M.	" 9 45 P.M.	" 7 49 P.M.
"	20th	" 1 39 A.M.	" 2 42 A.M.	" 9 10 P.M.	" 7 12 P.M.
OCTOBER	1st	rises 1 54 A.M.	sets 2 3 A.M.	sets 8 32 P.M.	sets 6 31 P.M.
"	10th	" 2 9 A.M.	" 1 38 A.M.	" 8 2 P.M.	" 5 59 P.M.
"	20th	" 2 27 A.M.	" 1 14 A.M.	" 7 29 P.M.	" 5 22 P.M.
NOVEM'R	1st	rises 2 51 A.M.	sets 0 52 A.M.	sets 6 51 P.M.	rises 5 56 A.M.
"	10th	" 3 10 A.M.	" 0 38 A.M.	" 6 23 P.M.	" 5 27 A.M.
"	20th	" 3 32 A.M.	" 0 25 A.M.	" 5 52 P.M.	" 4 54 A.M.
DECEM'R	1st	rises 3 57 A.M.	sets 0 13 A.M.	sets 5 19 P.M.	rises 4 17 A.M.
"	10th	" 4 18 A.M.	" 0 4 A.M.	" 4 52 P.M.	" 3 46 A.M.
"	20th	" 4 42 A.M.	" 11 54 P.M.	" 4 22 P.M.	" 3 12 A.M.

TIDE CORRECTIONS.

Both the times and heights of the Tides in the calendar are for the Port of Boston. The following table gives the approximate difference between Boston and the places named. If the hours and minutes opposite a place named in the table are preceded by a "+" sign, the time of high water at that place will be that much later than at Boston; if preceded by a "—" sign, high water will be that much earlier. This also applies to the heights of the tide. If the feet in the table opposite the place are preceded by a "+" sign, the height of high water at that place will be that much higher than the height at Boston; if preceded by a "—" sign, the height of high water will be that much lower than the height at Boston.

Port	*h. m.*	*feet*
Augusta, Me.	+ 8 42	— 5.5
Bangor, Me.	— 0 17	+ 3.5
Bar Harbor, Me.	— 0 41	+ 0.9
Bath, Me.	+ 0 42	— 3.2
Belfast, Me.	— 0 26	+ 0.1
Block Island, R. I.	— 3 53	— 6.6
Boothbay Harbor, Me.	— 0 29	— 0.8
Bridgeport, Conn.	— 0 10	— 2.4
Bristol, R. I.	— 3 25	— 5.6
Camden, Me.	— 0.27	+ 0.0
Chatham Lgts., Mass.	+ 0 18	— 2.9
Cohasset, Mass.	— 0 13	— 0.6
Eastport, Me.	— 0 36	+ 8.6
Edgartown, Mass.	+ 0 59	— 7.6
Fall River, Mass.	— 3 17	— 4.7
Gloucester, Mass.	— 0 15	— 0.7
Greenport, L. I.	— 0 59	— 7.2
Hartford, Conn.	+ 3 54	— 8.8
Hyannisport, Mass.	+ 0 45	— 6.3
Nantucket, Mass.	+ 0 52	— 6.5
Narragansett Pr., R.I.	— 3 44	— 6.1

Port	*h. m.*	*feet*
New Bedford, Mass.	— 3 31	— 5.6
Newburyport, Mass.	+ 0 11	— 1.8
New Haven, Conn.	— 0 12	— 3.6
New London, Conn.	— 1 58	— 7.1
Newport, R. I.	— 3 43	— 6.1
New York, Gov. Isl.	— 3 12	— 5.2
Plymouth, Mass.	— 0 08	+ 0.0
Point Judith, R. I.	— 3 41	— 6.5
Portland, Me.	— 0 20	— 0.7
Port Clyde, Me.	— 0 35	— 0 3
Portsmouth, N. H.	— 0 08	— 0.9
Providence, R. I.	— 3 14	— 5.0
Provincetown, Mass.	— 0 09	— 0.4
Rockland, Me.	— 0 28	+ 0.1
Salem, Mass.	— 0 12	— 0.6
Sandwich, Mass.	+ 0 02	— 0.2
Stamford, Conn.	— 0 18	— 2.3
Stonington, Conn.	— 2 25	— 6.9
Viney'd Haven, Mass.	+ 0 13	— 7.9
West Falmouth	— 3 39	— 5.5
Wood's Hole, Fish Com. Whf.	— 3 03	— 7.8

ASTRONOMICAL CALCULATIONS.

☉'s Declination.	Days.	d. m.	Days.	d. m.	Days.	d. m.	Days.	d. m.	Days.	d. m.
	1	23s. 4	7	22 28	13	21 36	19	20 30	25	19 9
	2	22 59	8	22 21	14	21 26	20	20 17	26	18 54
	3	22 54	9	22 13	15	21 16	21	20 4	27	18 39
	4	22 48	10	22 4	16	21 5	22	19 51	28	18 24
	5	22 42	11	21 55	17	20 54	23	19 37	29	18 8
	6	22 35	12	21 46	18	20 42	24	19 23	30	17 52

● New Moon, 6th day, 7h. 48m., morning, E.
☽ First Quarter, 13th day, 5h. 45m., evening, E.
○ Full Moon, 21st day, 7h. 57m., evening, E.
☾ Last Quarter, 29th day, 0h. 53m., morning, E.

Day of Year.	Day of Month.	Day of the Week.	☉ Rises. h. m.	☉ Sets. h. m.	Length of Days. h. m.	Day's Incr. h. m.	Sun Fast. m.	Moon's Age.	Full Sea, Boston. Morn h.	Full Sea, Boston. Even h.	☽'s Place	☽ Rises. h. m.	☽ Souths. h. m.
1	1	Tu.	7 13	4 22	9 9	0 3	12	25	6	6½	sec.	1 20	7 6
2	2	W.	7 13	4 23	9 10	0 4	12	26	7	7½	sec.	2 30	8 1
3	3	Th.	7 13	4 24	9 11	0 5	11	27	8	8½	thi.	3 42	8 58
4	4	Fr.	7 13	4 25	9 12	0 6	11	28	9	9½	thi.	4 52	9 57
5	5	Sa.	7 13	4 26	9 13	0 7	11	29	10	10½	kn.	5 59	10 58
6	6	S.	7 13	4 27	9 14	0 8	10	●	10¾	11½	kn.	sets	11 58
7	7	M.	7 13	4 28	9 15	0 9	10	1	11¾	—	legs	6 4	0 56
8	8	Tu.	7 13	4 29	9 16	0 10	9	2	0¼	0½	legs	7 10	1 51
9	9	W.	7 13	4 30	9 17	0 11	9	3	1¼	1¼	legs	8 15	2 43
10	10	Th.	7 13	4 31	9 18	0 12	8	4	2	2¼	feet	9 19	3 32
11	11	Fr.	7 12	4 32	9 20	0 14	8	5	2¾	3	feet	10 20	4 18
12	12	Sa.	7 12	4 33	9 21	0 15	8	6	3½	3¾	h'd	11 20	5 2
13	13	S.	7 12	4 34	9 22	0 16	7	7	4½	4¾	h'd	morn	5 45
14	14	M.	7 11	4 35	9 24	0 18	7	8	5¼	5½	n'k	0 18	6 28
15	15	Tu.	7 11	4 36	9 25	0 19	6	9	6	6½	n'k	1 16	7 11
16	16	W.	7 11	4 38	9 27	0 21	6	10	7	7½	n'k	2 12	7 56
17	17	Th.	7 10	4 39	9 29	0 23	6	11	7¾	8¼	arm	3 8	8 43
18	18	Fr.	7 10	4 40	9 30	0 24	5	12	8½	9	arm	4 3	9 31
19	19	Sa.	7 9	4 41	9 32	0 26	5	13	9½	10	br.	4 57	10 20
20	20	S.	7 8	4 42	9 34	0 28	5	14	10	10½	br.	5 48	11 11
21	21	M.	7 8	4 44	9 36	0 30	5	○	10¾	11¼	br.	rises	morn
22	22	Tu.	7 7	4 45	9 38	0 32	4	16	11½	—	h'rt	5 40	0 1
23	23	W.	7 6	4 46	9 40	0 34	4	17	0	0¼	h'rt	6 43	0 52
24	24	Th.	7 6	4 47	9 41	0 35	4	18	0¾	1	bel.	7 48	1 43
25	25	Fr.	7 5	4 49	9 44	0 38	3	19	1½	1¾	bel.	8 55	2 33
26	26	Sa.	7 4	4 50	9 46	0 40	3	20	2¼	2½	rei.	10 3	3 22
27	27	S.	7 3	4 51	9 48	0 42	3	21	3	3¼	rei.	11 11	4 12
28	28	M.	7 2	4 52	9 50	0 44	3	22	3¾	4¼	sec.	morn	5 3
29	29	Tu.	7 2	4 54	9 52	0 46	3	23	4¾	5¼	sec.	0 20	5 55
30	30	W.	7 1	4 55	9 54	0 48	2	24	5¾	6¼	sec.	1 29	6 50
31	31	Th.	7 0	4 56	9 56	0 50	2	25	6¾	7¼	thi.	2 37	7 46

JANUARY hath 31 days. [1924

O, Winter! thou art welcome; thou to me
Art a bestower of joy and guiltless mirth;—
Thou bringest many an eve of social glee
When dear friends gather round the blazing hearth,
And childhood's merry laugh, and youth's glad smile,
The lingering hours of many a day beguile.

JOHN HOWARD BRYANT.

D. M.	D. W.	Aspects, Holidays, Heights of High Water, etc.	Farmer's Calendar.
1	Tu.	Circumcision. ⊕ in Peri. Tides {9.6 9.0	Before the war the bricklayer received about $5 per day for his labor. To get the same amount of money the farmer had to grow and market about five bushels of wheat. Today some bricklayers get as high as $15 a day and the farmer has to grow and market about fifteen bushels of wheat to secure the same income. Relatively to the wheat farmer, the bricklayer is three times as well off and the wheat farmer only one third as well off as he was ten years ago. A similar comparison could be made between other farm crops and other kinds of laborers. To a marked degree the farmer has lost and the laboring man has gained economically during the past decade.
2	W.	♂ ☌ ☾. Tides {10.0 9.1 1st. ♂ ♄ ☾.	
3	Th.	☿ in ♌. ☿ stat. {10.4 9.3 *High*	
4	Fr.	☾ in Peri. Tides {10.9 9.5 3d. ♂ ☍ ☾.	
5	Sa.	☾ runs low. Tides {11.2 9.8 *winds*	
6	F	Epiphany. Tides {11.4 9.9 *and*	
7	M.	♂ ☿ ☾. ☿ in Peri. Tides {11.4 — *cold.*	
8	Tu.	♂ ♀ ☾. Tides {9.9 11.2	
9	W.	Tides {9.8 10.8 Connecticut ratifies U. S. Constitution, 1788.	
10	Th.	♂ ♅ ☾. Tides {9.7 10.3	
11	Fr.	Alexander Hamilton born, 1757. Tides {9.4 9.7	
12	Sa.	♂ ☿ ☉ inf. ☾ on Eq. Tides {9.2 9.1	
13	F	1st Sun. after Epiph. {8.9 8.6 *Look*	
14	M.	Tides {8.8 8.2	
15	Tu.	☾ in Apogee. Tides {8.7 8.0 *for*	
16	W.	Edward Gibbon, historian, died, 1794. Tides {8.8 7.9	
17	Th.	☿ Gr. Hel. Lat. N. Tides {8.9 7.9 *snow.*	
18	Fr.	Tides {9.1 8.1	
19	Sa.	☾ runs high. Tides {9.4 8.3	
20	F	2d Sun. after Epiphany. {9.7 8.5	
21	M.	Tides {9.9 8.8 *Change-*	
22	Tu.	Byron born, 1788. Tides {10.1 —	
23	W.	□ ♄ ☉. ♂ ♆ ☾. {9.0 10.2 *able.*	
24	Th.	Tides {9.2 10.2	
25	Fr.	Conversion of St. Paul. Tides {9.4 10.1	
26	Sa.	☾ on Equator. Tides {9.5 9.9	
27	F	3d S. af. Epiphany. Tides {9.6 9.6	
28	M.	♂ ♄ ☾. Tides {9.7 9.3 *More*	
29	Tu.	Kansas admitted to the Union, 1861. Tides {9.8 9.0 *snow*	
30	W.	{9.8 8.8 31st. ♂ ☌ ☾. ♂ ☍ ☾. *and*	
31	Th.	♂ ♀ ♅. ☾ in Peri. Tides {9.9 8.7 *colder.*	

ASTRONOMICAL CALCULATIONS.

☉'s Declination.	Days.	d. m.	Days.	d. m.	Days.	d. m.	Days.	d. m.	Days.	d. m.
	1	17s. 19	7	15 33	13	13 37	19	11 33	25	9 22
	2	17 2	8	15 14	14	13 17	20	11 12	26	9 0
	3	16 45	9	14 55	15	12 56	21	10 50	27	8 38
	4	16 27	10	14 36	16	12 36	22	10 28	28	8 15
	5	16 9	11	14 16	17	12 15	23	10 7	29	7 52
	6	16 51	12	13 57	18	11 54	24	9 45		

● New Moon, 4th day, 8h. 38m., evening, W.
☽ First Quarter, 12th day, 3h. 9m., evening, E.
○ Full Moon, 20th day, 11h. 7m., morning, W.
☾ Last Quarter, 27th day, 8h., 15m., morning, W.

Day of Year.	Day of Month.	Day of the Week.	☉ Rises. h. m.	☉ Sets. h. m.	Length of Days. h. m.	Day's Incr. h. m.	Sun Fast. m.	Moon's Age.	Full Sea, Boston, Morn h.	Full Sea, Boston, Even h.	☽'s Place	☽ Rises. h. m.	☽ Souths. h. m.
32	1	Fr.	6 59	4 58	9 59	0 53	2	26	7¾	8¼	thi.	3 43	8 44
33	2	Sa.	6 58	4 59	10 1	0 55	2	27	8¾	9¼	kn.	4 45	9 43
34	3	S.	6 57	5 0	10 3	0 57	2	28	9¾	10¼	kn.	5 40	10 41
35	4	M.	6 55	5 2	10 7	1 1	2	●	10½	11¼	legs	sets	11 37
36	5	Tu.	6 54	5 3	10 9	1 3	2	1	11½	—	legs	5 56	0 30
37	6	W.	6 53	5 4	10 11	1 5	2	2	0	0¼	feet	7 0	1 21
38	7	Th.	6 52	5 5	10 13	1 7	1	3	0¾	1	feet	8 4	2 8
39	8	Fr.	6 51	5 7	10 16	1 10	1	4	1½	1¾	h'd	9 5	2 54
40	9	Sa.	6 50	5 8	10 18	1 12	1	5	2¼	2½	h'd	10 4	3 38
41	10	S.	6 48	5 9	10 21	1 15	1	6	3	3¼	h'd	11 3	4 22
42	11	M.	6 47	5 11	10 24	1 18	1	7	3¾	4	n'k	morn	5 6
43	12	Tu.	6 46	5 12	10 26	1 20	1	8	4½	5	n'k	0 0	5 50
44	13	W.	6 45	5 13	10 28	1 22	1	9	5¼	5¾	arm	0 57	6 35
45	14	Th.	6 43	5 15	10 32	1 26	1	10	6¼	6¾	arm	1 53	7 22
46	15	Fr.	6 42	5 16	10 34	1 28	1	11	7	7¾	arm	2 47	8 11
47	16	Sa.	6 41	5 17	10 36	1 30	1	12	8	8½	br.	3 38	9 1
48	17	S.	6 39	5 18	10 39	1 33	2	13	8¾	9¼	br.	4 27	9 51
49	18	M.	6 37	5 20	10 43	1 37	2	14	9½	10	h'rt	5 12	10 43
50	19	Tu.	6 36	5 21	10 45	1 39	2	15	10¼	10¾	h'rt	5 53	11 34
51	20	W.	6 35	5 22	10 47	1 41	2	○	11	11½	bel.	rises	morn
52	21	Th.	6 33	5 23	10 50	1 44	2	17	11¾	—	bel.	6 42	0 26
53	22	Fr.	6 32	5 25	10 53	1 47	2	18	0¼	0½	bel.	7 51	1 16
54	23	Sa.	6 30	5 26	10 56	1 50	2	19	1	1¼	rei.	9 1	2 8
55	24	S.	6 29	5 27	10 58	1 52	2	20	1¾	2¼	rei.	10 11	2 59
56	25	M.	6 27	5 28	11 1	1 55	2	21	2½	3	sec.	11 20	3 52
57	26	Tu.	6 26	5 30	11 4	1 58	3	22	3½	4	sec.	morn	4 46
58	27	W.	6 24	5 31	11 7	2 1	3	23	4¼	5	thi.	0 29	5 41
59	28	Th.	6 23	5 32	11 9	2 3	3	24	5¼	6	thi.	1 35	6 38
60	29	Fr.	6 21	5 33	11 12	2 6	3	25	6½	7	kn.	2 37	7 35

FEBRUARY hath 29 days. [1924

Merrily by the hearthstone we
Sit with a song of social glee,
While the blaze of the red fire glows,
Painting the sides of the rafters old,
Till they shine in the roof like melted gold,
Right under the piled up, chilling snows.

WILLIAM ELLERY CHANNING.

D. M.	D. W.	Aspects, Holidays, Heights of High Water, etc.	Farmer's Calendar.
1	Fr.	Tides {10.1 8.8 2d. ☌ ☿ ☾.	This is the month for the farmer to be testing his seeds or to be finding out where he can buy seeds which have been tested and guaranteed for both germination and purity. If the local seed merchant does not carry tested seeds, a sample should be taken and sent to the state college for testing. Seeds sold in the small ten-cent packets are especially likely to be old and of low grade.
2	Sa.	Pur. of V. Mary. Candlemas. ☾ runs low {10.4 9.1	
3	F	4th Sun. after Epiph. Tides {10.6 9.4	
4	M.	Kentucky admitted to the Union, 1791. Tides {10.8 9.6	
5	Tu.	☿ Gr. el. W. Tides {10.9 — *Unsettled.*	
6	W.	Tides {9.8 10.7	
7	Th.	☌ ♅ ☾. ☌ ♀ ☾. Tides {9.8 10.4	
8	Fr.	☿ ☍ ☉. ☾ on Equator. {9.7 10.0	
9	Sa.	☿ in ♒. Tides {9.5 9.5	A good farmer would no more think of using poor seed than a poultryman would of attempting to hatch infertile eggs. There is, furthermore, no reason why any farmer should have to use poor seed because thirty-nine of our states have already enacted laws regulating the sale and quality of seeds, and good seeds can nearly always be secured if an effort is made to do so.
10	F	5th Sun. after Epiph. Tides {9.3 9.0	
11	M.	♄ stat. Tides {9.0 8.6 *Continued*	
12	Tu.	☾ in Apogee. LINCOLN DAY. Tides {8.8 8.1	
13	W.	☌ ☌ ☊. Tides {8.7 7.8	
14	Th.	St. Valentine. Tides {8.6 7.7 *cold.*	
15	Fr.	Tides {8.7 7.7	
16	Sa.	☾ runs high. Tides {8.9 7.9	
17	F	Septuagesima Sun. Tides {9.2 8.2	
18	M.	Tides {9.6 8.6	
19	Tu.	☌ ☍ ☾. Tides {9.9 9.1	Too frequently we get poor crops and lay the blame on the weather, the crows, the bugs or worms, the fertilizer, the birds, or something else, while as a matter of fact the real trouble was poor, untested seed.
20	W.	☿ in Aph. ☾ Total Ecl. invisible. {10.2 9.4 *Grows*	
21	Th.	Tides {10.4 — *warmer,*	
22	Fr.	WASHINGTON born, 1732. Tides {9.8 10.5 *with rain*	
23	Sa.	☾ on Eq. {10.1 10.4 24th. ☌ ♄ ☾. *in some*	
24	F	Sexa. S. St. Mathias. {10.3 10.2 *quarters.*	The three chief factors in crop production which the farmer can control are through tillage, abundance of fertilizer and good seed; and not the least of these is good seed. Turn to the 13th chapter of St. Matthew and read the "parable of the tares."
25	M.	☾ in Peri. Tides {10.4 9.9	
26	Tu.	♀ in ♒. Tides {10.3 9.4	
27	W.	☌ ☊ ☾. Tides {10.1 9.0 *Blustering*	
28	Th.	☌ ☌ ☾. Tides {9.9 8.7 *winds.*	
29	Fr.	☾ runs low. Tides {9.8 8.6	

1924] MARCH, Third Month.

ASTRONOMICAL CALCULATIONS.

☉'s Declination.	Days.	d. m.	Days.	d. m.	Days.	d. m.	Days.	d. m.	Days.	d. m.
	1	7s. 30	7	5 11	13	2 50	19	0 28	25	1 54
	2	7 7	8	4 48	14	2 26	20	0s. 4	26	2 17
	3	6 44	9	4 24	15	2 3	21	0N. 19	27	2 41
	4	6 21	10	4 1	16	1 39	22	0 43	28	3 4
	5	5 58	11	3 37	17	1 15	23	1 7	29	3 28
	6	5 35	12	3 14	18	0 52	24	1 30	30	3 51

● New Moon, 5th day, 10h. 58m., morning, E.

☽ First Quarter, 13th day, 11h. 50m., morning, E.

○ Full Moon, 20th day, 11h. 30m., evening, E.

☾ Last Quarter, 27th day, 3h. 24m., evening, W.

Day of Year.	Day of Month.	Day of the Week.	☉ Rises. h. m.	☉ Sets. h. m.	Length of Days. h. m.	Day's Incr. h. m.	Sun Fast. m.	Moon's Age.	Full Sea, Boston. Morn h.	Full Sea, Boston. Even h.	☽'s Place	☽ Rises. h. m.	☽ Souths. h. m.
61	1	Sa.	6 20	5 35	11 15	2 9	3	26	7½	8¼	kn.	3 33	8 32
62	2	S.	6 18	5 36	11 18	2 12	3	27	8½	9¼	legs	4 23	9 27
63	3	M.	6 16	5 37	11 21	2 15	4	28	9½	10	legs	5 6	10 20
64	4	Tu.	6 15	5 38	11 23	2 17	4	29	10½	11	feet	5 44	11 11
65	5	W.	6 13	5 39	11 26	2 20	4	●	11¼	11¾	feet	sets	0 0
66	6	Th.	6 11	5 41	11 30	2 24	4	1	11¾	—	feet	6 50	0 46
67	7	Fr.	6 10	5 42	11 32	2 26	5	2	0¼	0¾	h'd	7 51	1 31
68	8	Sa.	6 8	5 43	11 35	2 29	5	3	1	1¼	h'd	8 50	2 15
69	9	S.	6 6	5 44	11 38	2 32	5	4	1¾	2	n'k	9 49	2 59
70	10	M.	6 5	5 45	11 40	2 34	5	5	2½	2¾	n'k	10 46	3 44
71	11	Tu.	6 3	5 46	11 43	2 37	6	6	3	3½	n'k	11 42	4 29
72	12	W.	6 1	5 48	11 47	2 41	6	7	3¾	4¼	arm	morn	5 15
73	13	Th.	6 0	5 49	11 49	2 43	6	8	4¾	5¼	arm	0 36	6 2
74	14	Fr.	5 58	5 50	11 52	2 46	6	9	5½	6	br.	1 28	6 51
75	15	Sa.	5 56	5 51	11 55	2 49	7	10	6½	7	br.	2 18	7 40
76	16	S.	5 54	5 52	11 58	2 52	7	11	7¼	8	br.	3 4	8 31
77	17	M.	5 53	5 53	12 0	2 54	7	12	8¼	8¾	h'rt	3 46	9 22
78	18	Tu.	5 51	5 55	12 4	2 58	8	13	9	9½	h'rt	4 26	10 13
79	19	W.	5 49	5 56	12 7	3 1	8	14	9¾	10¼	bel.	5 3	11 5
80	20	Th.	5 47	5 57	12 10	3 4	8	○	10¾	11	bel.	rises	11 57
81	21	Fr.	5 46	5 58	12 12	3 6	8	16	11½	11¾	rei.	6 43	morn
82	22	Sa.	5 44	5 59	12 15	3 9	9	17	—	0¼	rei.	7 55	0 49
83	23	S.	5 42	6 0	12 18	3 12	9	18	0½	1	sec.	9 8	1 43
84	24	M.	5 41	6 1	12 20	3 14	9	19	1¼	1¾	sec.	10 19	2 38
85	25	Tu.	5 39	6 3	12 24	3 18	10	20	2¼	2¾	thi.	11 28	3 35
86	26	W.	5 37	6 4	12 27	3 21	10	21	3	3¾	thi.	morn	4 33
87	27	Th.	5 35	6 5	12 30	3 24	10	22	4	4¾	kn.	0 32	5 31
88	28	Fr.	5 34	6 6	12 32	3 26	11	23	5	5¾	kn.	1 30	6 28
89	29	Sa.	5 32	6 7	12 35	3 29	11	24	6¼	6¾	legs	2 22	7 23
90	30	S.	5 30	6 8	12 38	3 32	11	25	7¼	8	legs	3 6	8 16
91	31	M.	5 28	6 9	12 41	3 35	12	26	8¼	8¾	legs	3 45	9 7

MARCH hath 31 days. [1924

My ear is listening for the sound
Of earliest bird upon the tree,
Of sparrow flitting o'er the ground,
Whose note so welcome is to me.

JONES VERY.

D.M.	D.W.	Aspects, Holidays, Heights of High Water, etc.	Farmer's Calendar.
1	Sa.	St. David. ♂ in ♉. Tides {9.8 / 8.7	The use of certified seed potatoes is analagous to the use of pure-bred, high-producing strains of animals or plants. Such an article as certified seed has been on the market only a few years. As the name implies, it means that the seed has been grown under exceptional conditions and that it has been officially inspected and certified to be true to name, of good quality and of high production.
2	E	Quinq. Sun. Tides {9.9 / 9.0 *Flurries*	
3	M.	Tides {10.1 / 9.3	
4	Tu.	Shrove Tu. ♂ ☿ ☾. {10.3 / 9.6 *of snow*	
5	W.	Ash Wednesday. ☉ Par. Ecl. invis. {10.3 / 9.8	
6	Th.	Tides {10.3 / — 5th. ♂ ♅ ☾. *and*	
7	Fr.	☾ on Equator. Tides {9.8 / 10.1	
8	Sa.	♂ ♅ ☉. ♂ ♀ ☾. Tides {9.8 / 9.8 *colder.*	
9	E	1st Sun. in Lent. □ ♃ ☉. {9.6 / 9.4	
10	M.	Tides {9.4 / 9.0	
11	Tu.	☿ Gr. Hel. Lat. S. ☾ in Apo. {9.2 / 8.6 *Weather*	
12	W.	Tides {9.0 / 8.2 *moderates,*	
13	Th.	Planet Uranus discovered, 1781. Tides {8.8 / 7.9 *expect*	
14	Fr.	♂ ☿ ♅. ☾ runs high Tides {8.6 / 7.8 *a*	
15	Sa.	Tides {8.7 / 7.8 *thaw.*	
16	E	2d Sun. in Lent. Tides {8.8 / 8.0	
17	M.	St. Patrick. ♂ ♆ ☾. Tides {9.1 / 8.5	
18	Tu.	Washington entered Boston, 1776. Tides {9.5 / 9.0	
19	W.	Tides {10.0 / 9.6 *Unsettled,*	
20	Th.	☉ ent. ♈. Spring begins. {10.4 / 10.2 *rain or*	
21	Fr.	St. Benedict. ☾ on Eq. Tides {10.6 / 10.7 *snow.*	
22	Sa.	♂ ☿ ☉. Sup. Tides {— / 10.8	
23	E	3d S. in Lent. ♂ ♄ ☾. ☾ in Peri. {11.0 / 10.7	
24	M.	Tides {11.1 / 10.5 *Warmer*	
25	Tu.	Annunciation or Lady Day. Tides {11.0 / 10.0	
26	W.	♂ ♃ ☾. Tides {10.8 / 9.6 *with a*	
27	Th.	☾ runs low. Tides {10.4 / 9.2	
28	Fr.	♂ ♂ ☾. Tides {10.0 / 8.8 *bright*	
29	Sa.	Tides {9.7 / 8.7 30th. ♀ in Peri. *sun.*	
30	E	4th Sun. in Lent. ☿ in ♌. {9.6 / 8.9	
31	M.	Tides {9.6 / 9.1	

Only a few of the best potato growers are able to produce certified seed, but the extra price they can get for it makes it profitable. More than 60 per cent of our good potato growers are planting certified seed and they, too, are finding it profitable on account of the increased yield and better quality.

With potatoes it means further: (1) that the fields have been inspected twice during the growing season and the tubers themselves before bagging; (2) that the weak hills have been pulled up; (3) that there is not more than 1 per cent. of black leg, more than 5 per cent. of leaf roll or mosaic, or more than 10 per cent. of scab; (4) that the tubers have been graded and all under 2 ounces or over 12 ounces have been removed; (5) that all bruised, rotten, frozen or improperly shaped tubers have been eliminated; (6) that a yield of at least 200 or 250 bushels per acre has been secured.

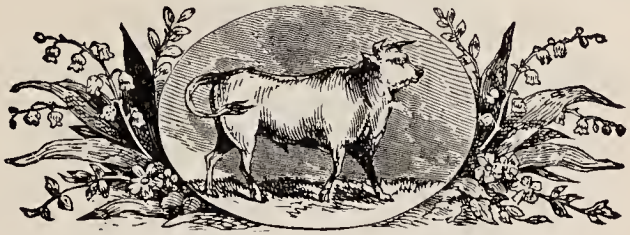
ASTRONOMICAL CALCULATIONS.

☉'s Declination.	Days.	d.	m.	Days.	d.	m.	Days.	d.	m.	Days.	d.	m.	Days.	d.	m.
	1	4N.	38	7	6	55	13	9	7	19	11	15	25	13	15
	2	5	1	8	7	17	14	9	29	20	11	35	26	13	35
	3	5	24	9	7	39	15	9	51	21	11	56	27	13	54
	4	5	47	10	8	2	16	10	12	22	12	16	28	14	13
	5	6	9	11	8	24	17	10	33	23	12	36	29	14	32
	6	6	32	12	8	46	18	10	54	24	12	56	30	14	50

● New Moon, 4th day, 2h. 17m., morning, E.
☽ First Quarter, 12th day, 6h. 12m., morning, W.
○ Full Moon, 19th day, 9h. 11m., morning, W.
☾ Last Quarter, 25th day, 11h. 28m., evening, E.

Day of Year.	Day of Month.	Day of the Week.	☉ Rises. h.	m.	☉ Sets. h.	m.	Length of Days. h.	m.	Day's Incr. h.	m.	Sun Fast. m.	Moon's Age.	Full Sea, Boston. Morn h.	Even h.	☽'s Place	☽ Rises. h.	m.	☽ Souths. h.	m.
92	1	Tu.	5	27	6	10	12	43	3	37	12	27	9¼	9¾	feet	4	19	9	55
93	2	W.	5	25	6	12	12	47	3	41	12	28	10	10½	feet	4	50	10	41
94	3	Th.	5	23	6	13	12	50	3	44	12	29	10¾	11¼	h'd	5	20	11	26
95	4	Fr.	5	21	6	14	12	53	3	47	13	●	11½	11¾	h'd	**sets**		0	10
96	5	Sa.	5	20	6	15	12	55	3	49	13	1	—	0¼	n'k	7	39	0	54
97	6	♋	5	18	6	16	12	58	3	52	13	2	0½	1	n'k	8	37	1	38
98	7	M.	5	16	6	17	13	1	3	55	14	3	1¼	1½	n'k	9	33	2	23
99	8	Tu.	5	15	6	18	13	3	3	57	14	4	1¾	2¼	arm	10	28	3	9
100	9	W.	5	13	6	19	13	6	4	0	14	5	2½	3	arm	11	21	4	56
101	10	Th.	5	11	6	21	13	10	4	4	14	6	3¼	3¾	br.	morn		4	43
102	11	Fr.	5	10	6	22	13	12	4	6	15	7	4	4½	br.	0	11	5	32
103	12	Sa.	5	8	6	23	13	15	4	9	15	8	4¾	5½	br.	0	58	6	21
104	13	♋	5	6	6	24	13	18	4	12	15	9	5¾	6¼	h'rt	1	41	7	10
105	14	M.	5	5	6	25	13	20	4	14	15	10	6¾	7¼	h'rt	2	21	8	0
106	15	Tu.	5	3	6	26	13	23	4	17	16	11	7½	8	bel.	2	58	8	51
107	16	W.	5	2	6	27	13	25	4	19	16	12	8½	9	bel.	3	33	9	42
108	17	Th.	5	0	6	28	13	28	4	22	16	13	9¼	9¾	rei.	4	7	10	34
109	18	Fr.	4	58	6	30	13	32	4	26	16	14	10¼	10½	rei.	4	42	11	28
110	19	Sa.	4	57	6	31	13	34	4	28	17	○	11	11¼	sec.	**rises**		morn	
111	20	♋	4	55	6	32	13	37	4	31	17	16	11¾	—	sec.	8	0	0	24
112	21	M.	4	54	6	33	13	39	4	33	17	17	0¼	0¾	thi.	9	13	1	22
113	22	Tu.	4	52	6	34	13	42	4	36	17	18	1	1½	thi.	10	21	2	21
114	23	W.	4	51	6	35	13	44	4	38	17	19	2	2½	kn.	11	24	3	21
115	24	Th.	4	49	6	36	13	47	4	41	18	20	2¾	3½	kn.	morn		4	21
116	25	Fr.	4	48	6	37	13	49	4	43	18	21	3¾	4½	kn.	0	19	5	18
117	26	Sa.	4	46	6	39	13	53	4	47	18	22	4¾	5½	legs	1	6	6	13
118	27	♋	4	45	6	40	13	55	4	49	18	23	5¾	6½	legs	1	47	7	5
119	28	M.	4	43	6	41	13	58	4	52	18	24	7	7½	feet	2	23	7	53
120	29	Tu.	4	42	6	42	14	0	4	54	18	25	8	8½	feet	2	54	8	40
121	30	W.	4	41	6	43	14	2	4	56	19	26	9	9¼	h'd	3	24	9	25

APRIL hath 30 days. [1924



In April's dim and showery nights,
When music melts along the air,
And Memory wakens at the kiss
Of wandering perfumes, faint and rare.

SARAH HELEN WHITMAN.

D.M.	D.W.	Aspects, Holidays, Heights of High Water, Etc.	Farmer's Calendar.
1	Tu.	Tides 9.7 / 9.4	"Let us lime and let us spray." This is an injunction which every successful farmer in New England is learning to heed. During the past ten years laboratory tests and field experiments have shown that a large majority of the soils of the country are in need of lime, particularly for growing legume crops.
2	W.	♂ ♅ ☾. Tides 9.8 / 9.7	
3	Th.	☾ on Equator. Tides 9.9 / 9.9	
4	Fr.	☿ in Peri. Tides 9.8 / 9.9	
5	Sa.	♂☿☾. ♃ stat. 9.7 / — *Variable,*	
6	E	5th Sunday in Lent. Tides 9.9 / 9.5	
7	M.	Tides 9.8 / 9.2 6th. U. S. declared war against Germany, 1917.	
8	Tu.	♂ ♀ ☾. ☾ in Apo. 9.6 / 8.9 *with*	
9	W.	Capture of Mobile, 1865. Tides 9.4 / 8.6	
10	Th.	Tides 9.2 / 8.3 *rain.*	
11	Fr.	☾ runs high. Tides 9.0 / 8.1	
12	Sa.	Tides 8.8 / 8.0	
13	E	Palm Sun. □ ♂ ☉. Tides 8.8 / 8.1	
14	M.	♂ ♆ ☾. ☿ Gr. Hel. Lat. N. 8.9 / 8.4 *Showery*	
15	Tu.	Tides 9.2 / 8.9	
16	W.	☿ Gr. elong. E. Tides 9.5 / 9.6	
17	Th.	Tides 10.0 / 10.2 *conditions.*	
18	Fr.	Good Friday. ☾ on Eq. Tides 10.4 / 10.9	
19	Sa.	♂ ♄☉. ♂♄☾. PATRIOTS' DAY. 10.7 / 11.4	
20	E	Easter Sun. ☾ in Peri. 10.8 / —	
21	M.	♀ Gr. Hel. Lat. N. ♀ Gr. el. E. Tides 11.7 / 10.8	
22	Tu.	♂ ♃ ☾. Tides 11.7 / 10.5 *Some*	
23	W.	St. George. ☾ runs low. Tides 11.5 / 10.1 *mild*	
24	Th.	Tides 11.1 / 9.7 *days,*	
25	Fr.	St. Mark. ♂ ♂ ☾. Tides 10.6 / 9.4 *but*	
26	Sa.	Tides 10.1 / 9.1 *cool*	
27	E	Low Sun. ☿ stat. 9.7 / 9.0 *nights.*	
28	M.	♆ stat. Tides 9.4 / 9.2	
29	Tu.	♂ ♅ ☾. Tides 9.3 / 9.4 *Rain.*	
30	W.	☾ on Equator. Tides 9.3 / 9.6	

The need of lime is frequently indicated by the character of the vegetation, such as the growth of moss, sorrel and briars, or more surely still, the failure of the land to grow clover. If one is in doubt, the best plan is to have the county agent sample and test the soil. He can tell very quickly and very accurately the amount of lime needed.

There are three principal forms of lime which may be applied. These are quick or burnt lime, slaked lime, and ground limestone. The first contains about 95 per cent. actual lime, the second about 70 per cent., and the third about 50 per cent. The kind to buy will depend upon the price of a unit of actual lime. At the present time finely ground limestone is popular, both on account of the price and the ease of application. The best time to lime is right after plowing; 1½ to 3 tons per acre is the usual application. The function of lime is to correct soil acidity; it is not a fertilizer.

ASTRONOMICAL CALCULATIONS.

☉'s Declination.	Days.	d. m.	Days.	d. m.	Days.	d. m.	Days.	d. m.	Days.	d. m.
	1	15N. 8	7	16 52	13	18 26	19	19 49	25	20 59
	2	15 26	8	17 9	14	18 41	20	20 1	26	21 10
	3	15 44	9	17 25	15	18 55	21	20 14	27	21 20
	4	16 2	10	17 41	16	19 9	22	20 26	28	21 30
	5	16 19	11	17 56	17	19 23	23	20 37	29	21 39
	6	16 36	12	18 11	18	19 36	24	20 48	30	21 48

● New Moon, 3d day, 6h. 0m., evening, W.
☽ First Quarter, 11th day, 9h. 14m., evening, W.
○ Full Moon, 18th day, 4h. 53m., evening, E.
☾ Last Quarter, 25th day, 9h. 16m., morning, W.

Day of Year.	Day of Month.	Day of the Week.	☉ Rises. h. m.	☉ Sets. h. m.	Length of Days. h. m.	Day's Incr. h. m.	Sun Fast. m.	Moon's Age.	Full Sea, Boston. Morn h.	Full Sea, Boston. Even h.	☽'s Place	☽ Rises. h. m.	☽ Souths. h. m.
122	1	Th.	4 39	6 44	14 5	4 59	19	27	9¾	10	h'd	3 52	10 8
123	2	Fr.	4 38	6 45	14 7	5 1	19	28	10½	10¾	h'd	4 21	10 52
124	3	Sa.	4 36	6 46	14 10	5 4	19	●	11	11½	n'k	sets	11 36
125	4	♋	4 35	6 47	14 12	5 6	19	1	11¾	—	n'k	7 26	0 20
126	5	M.	4 34	6 49	14 15	5 9	19	2	0	0½	arm	8 23	1 5
127	6	Tu.	4 33	6 50	14 17	5 11	19	3	0¾	1¼	arm	9 16	1 52
128	7	W.	4 31	6 51	14 20	5 14	19	4	1¼	1¾	arm	10 7	2 39
129	8	Th.	4 30	6 52	14 22	5 16	19	5	2	2½	br.	10 55	3 27
130	9	Fr.	4 29	6 53	14 24	5 18	19	6	2¾	3¼	br.	11 39	4 15
131	10	Sa.	4 28	6 54	14 26	5 20	19	7	3½	4	h'rt	morn	5 4
132	11	♋	4 27	6 55	14 28	5 22	19	8	4¼	5	h'rt	0 19	5 52
133	12	M.	4 26	6 56	14 30	5 24	20	9	5¼	5¾	h'rt	0 56	6 41
134	13	Tu.	4 24	6 57	14 33	5 27	20	10	6	6¾	bel.	1 30	7 30
135	14	W.	4 23	6 58	14 35	5 29	20	11	7	7½	bel.	2 3	8 20
136	15	Th.	4 22	6 59	14 37	5 31	20	12	8	8½	rei.	2 37	9 12
137	16	Fr.	4 21	7 0	14 39	5 33	20	13	8¾	9¼	rei.	3 11	10 6
138	17	Sa.	4 20	7 1	14 41	5 35	19	14	9¾	10	sec.	3 47	11 3
139	18	♋	4 19	7 2	14 43	5 37	19	○	10¾	11	sec.	rises	morn
140	19	M.	4 18	7 3	14 45	5 39	19	16	11½	11¾	thi.	8 1	0 3
141	20	Tu.	4 18	7 4	14 46	5 40	19	17	—	0½	thi.	9 9	1 4
142	21	W.	4 17	7 5	14 48	5 42	19	18	0¾	1¼	kn.	10 10	2 6
143	22	Th.	4 16	7 6	14 50	5 44	19	19	1½	2¼	kn.	11 3	3 7
144	23	Fr.	4 15	7 7	14 52	5 46	19	20	2½	3¼	legs	11 47	4 5
145	24	Sa.	4 14	7 8	14 54	5 48	19	21	3½	4	legs	morn	5 0
146	25	♋	4 13	7 9	14 56	5 50	19	22	4½	5	feet	0 25	5 51
147	26	M.	4 13	7 10	14 57	5 51	19	23	5½	6	feet	0 58	6 38
148	27	Tu.	4 12	7 11	14 59	5 53	19	24	6½	7	h'd	1 29	7 24
149	28	W.	4 12	7 12	15 0	5 54	19	25	7½	8	h'd	1 57	8 8
150	29	Th.	4 11	7 12	15 1	5 55	19	26	8½	8¾	h'd	2 25	8 51
151	30	Fr.	4 10	7 13	15 3	5 57	18	27	9¼	9½	n'k	2 53	9 34
152	31	Sa.	4 10	7 14	15 4	5 58	18	28	10	10¼	n'k	3 24	10 18

MAY hath 31 days. [1924

May has come:— in field and meadow
Starry bloom the virgin flowers;
Broad the maple flings its shadow;
Snowy white the elder bowers.

JAMES GATES PERCIVAL.

D. M.	D. W.	Aspects, Holidays, Heights of High Water, etc.	Farmer's Calendar.
1	Th.	St. Philip & St. James. Tides 9.4 9.8	The practice of "greening" or sun-sprouting seed potatoes is growing in favor with our large potato growers. The greening is done by spreading the potatoes out in a thin layer in a light room, but not in direct sunlight. If they are left here for two or three weeks, short, green, stubby sprouts will develop, and when the potatoes are planted they will come up much more quickly on account of the started sprouts. If allowed to germinate in the dark, the sprouts will be long, slender and white, and unsuitable for planting.
2	Fr.	Battle of Chancellorsville, Va. begins, 1863. Tides 9.4 9.9	
3	Sa.	Tides 9.4 10.0 *Seasonable*	
4	E	2d S. af. Easter. ☌ ☿ ☾. 9.3 —	
5	M.	☾ in Apo. Tides 10.0 9.2 *weather.*	
6	Tu.	Tides 9.9 9.0 7th. ☌ ☿ ☉ inf. ☿ in ♉.	
7	W.	☿ Transit, Partly vis. ☌ ♀ ☾. Tides 9.7 8.8	
8	Th.	□ Ψ ☉. ☾ runs high. Tides 9.6 8.6	
9	Fr.	ARBOR DAY in R. I. Tides 9.4 8.5	
10	Sa.	Tides 9.2 8.4 11th. ☌ Ψ ☾.	
11	E	3d. S. af. Easter. 9.0 8.4 *Easterly*	
12	M.	Tides 9.0 8.6	
13	Tu.	Tides 9.0 8.9 *winds.*	
14	W.	Vaccination discovered, 1796. Tides 9.2 9.4	
15	Th.	☾ on Equator. Tides 9.5 10.1	
16	Fr.	☌ ♄ ☾. Tides 9.9 10.3	
17	Sa.	Tides 10.2 11.4	
18	E	4th S. af. Easter. ☿ in Aph. 10.5 11.3	
19	M.	☌ ☊ ☾. ☾ in Peri. Tides 10.7 12.0	
20	Tu.	☿ stat. Tides — 10.6 *Warmer*	
21	W.	☾ runs low. Tides 12.0 10.5	
22	Th.	Richard Wagner born, 1813. Tides 11.7 10.2 *with*	
23	Fr.	Tides 11.2 9.9	
24	Sa.	☌ ☌ ☾. Tides 10.6 9.6 *showers.*	
25	E	Rogation Sun. ♀ Gr. Brill. 10.1 9.4	
26	M.	☌ ♅ ☾. Tides 9.6 9.3 *Clear*	
27	Tu.	Tides 9.2 9.3	
28	W.	☾ on Equator. Tides 9.0 9.4 *and*	
29	Th.	Ascension Day. Tides 8.9 9.6 *mild.*	
30	Fr.	MEMORIAL DAY. Tides 8.9 9.7	
31	Sa.	☌ ☿ ☾. Tides 8.9 9.9	

The seed comes up more quickly. (2) Planting may be delayed until the ground is warm. (3) If the potato is weak and will not germinate, it can be discarded. A better stand is thus insured.

The length to which the sprouts should be allowed to grow when potatoes are greened will depend upon the method of planting. If a planter is used the sprouts should be not more than one-quarter inch; if planted by hand they may be an inch long. The chief advantages of greening are as follows: (1)

It is not wise to plant too many small potatoes whole. The seed pieces should have at least two eyes with a minimum of cut surface exposed to the soil. A five or six ounce potato cut into quarters with careful attention to the eyes makes almost ideal seed.

ASTRONOMICAL CALCULATIONS.

☉'s Declination.	Days.	d. m	Days.	d. m.	Days.	d. m.	Days.	d. m.	Days.	d. m.
	1	22N. 5	7	22 47	13	23 14	19	23 26	25	23 23
	2	22 13	8	22 52	14	23 17	20	23 27	26	23 22
	3	22 20	9	22 57	15	23 19	21	23 27	27	23 19
	4	22 28	10	23 2	16	23 22	22	23 27	28	23 17
	5	22 34	11	23 6	17	23 24	23	23 26	29	23 14
	6	22 41	12	23 10	18	23 25	24	23 25	30	23 10

● New Moon, 2d day, 9h. 34m., morning, E.

☽ First Quarter, 10th day, 8h. 37m., morning, E.

○ Full Moon, 16th day, 11h. 41m., evening, E.

☾ Last Quarter, 23d day, 9h. 16m., evening, E.

Day of Year.	Day of Month.	Day of the Week.	☉ Rises. h. m.	☉ Sets. h. m.	Length of Days. h. m.	Day's Incr. h. m.	Sun Fast. m.	Moon's Age.	Full Sea. Boston. Morn h.	Full Sea. Boston. Even h.	☽'s Place	☽ Rises. h. m.	☽ Souths. h. m.
153	1	♋	4 9	7 15	15 6	6 0	18	29	10¾	10¾	arm	3 56	11 3
154	2	M.	4 9	7 16	15 7	6 1	18	●	11¼	11½	arm	sets	11 49
155	3	Tu.	4 8	7 16	15 8	6 2	18	1	—	0	arm	8 4	0 36
156	4	W.	4 8	7 17	15 9	6 3	18	2	0¼	0¾	br.	8 54	1 24
157	5	Th.	4 8	7 18	15 10	6 4	17	3	0¾	1½	br.	9 39	2 12
158	6	Fr.	4 7	7 18	15 11	6 5	17	4	1½	2	h'rt	10 20	3 1
159	7	Sa.	4 7	7 19	15 12	6 6	17	5	2¼	2¾	h'rt	10 58	3 49
160	8	♋	4 7	7 20	15 13	6 7	17	6	3	3½	h'rt	11 35	4 37
161	9	M.	4 6	7 20	15 14	6 8	17	7	3¾	4¼	bel.	morn	5 25
162	10	Tu.	4 6	7 21	15 15	6 9	16	8	4½	5¼	bel.	0 5	6 13
163	11	W.	4 6	7 21	15 15	6 9	16	9	5½	6	rei.	0 36	7 2
164	12	Th.	4 6	7 22	15 16	6 10	16	10	6½	7	rei.	1 9	7 53
165	13	Fr.	4 6	7 22	15 16	6 10	16	11	7½	8	sec.	1 42	8 46
166	14	Sa.	4 6	7 23	15 17	6 11	16	12	8½	8¾	sec.	2 19	9 43
167	15	♋	4 6	7 23	15 17	6 11	15	13	9¼	9¾	thi.	3 0	10 43
168	16	M.	4 6	7 24	15 18	6 12	15	○	10¼	10½	thi.	rises	11 46
169	17	Tu.	4 6	7 24	15 18	6 12	15	15	11¼	11½	kn.	7 52	morn
170	18	W.	4 6	7 24	15 18	6 12	15	16	—	0	kn.	8 51	0 48
171	19	Th.	4 6	7 25	15 19	6 13	15	17	0½	1	legs	9 41	1 50
172	20	Fr.	4 6	7 25	15 19	6 13	14	18	1¼	2	legs	10 23	2 48
173	21	Sa.	4 6	7 25	15 19	Dec.	14	19	2¼	2¾	feet	10 59	3 42
174	22	♋	4 7	7 25	15 18	0 1	14	20	3	3¾	feet	11 31	4 33
175	23	M.	4 7	7 25	15 18	0 1	14	21	4	4¾	feet	morn	5 20
176	24	Tu.	4 7	7 25	15 18	0 1	14	22	5	5½	h'd	0 1	6 6
177	25	W.	4 8	7 26	15 18	0 1	13	23	6	6½	h'd	0 30	6 50
178	26	Th.	4 8	7 26	15 18	0 1	13	24	6¾	7¼	n'k	0 57	7 33
179	27	Fr.	4 8	7 26	15 18	0 1	13	25	7¾	8¼	n'k	1 27	8 17
180	28	Sa.	4 9	7 26	15 17	0 2	13	26	8½	9	n'k	1 58	9 1
181	29	♋	4 9	7 26	15 17	0 2	12	27	9½	9¾	arm	2 32	9 46
182	30	M.	4 10	7 26	15 16	0 3	12	28	10¼	10¼	arm	3 10	10 33

JUNE hath 30 days. [1924

The summertime has come again,
With all its lights and mirth,
And June leads on the laughing Hours
To bless the weary earth.

RICHARD HENRY STODDARD.

D. M.	D. W.	Aspects, Holidays, Heights of High Water, etc.
1	E	Sunday after Ascension. {9.0 9.9
2	M.	☾ in Apo. 1st Nicomede. Tides {9.0 10.0
3	Tu.	☿ Gr. Elong. W. Tides {— 8.9
4	W.	☾ runs high. Tides {9.9 8.9
5	Th.	♂ ♀ ☾. ☌ ☿ ☉. Tides {9.8 8.8
6	Fr.	Tides {9.7 8.7
7	Sa.	☿ Gr. Hel. Lat. S. ♂ ♆ ☾. Tides {9.6 8.7
8	E	Whit Sunday. Tides {9.4 8.7
9	M.	♀ stat. Tides {9.3 8.8
10	Tu.	Tides {9.2 9.0
11	W.	St. Barnabas. ☾ on Eq. {9.2 9.4
12	Th.	□ ♅ ☉. ♂ ♄ ☾. {9.2 9.3
13	Fr.	Gen. Winfield Scott born, 1786. Tides {9.4 10.4
14	Sa.	National Flag adopted, 1777. Tides {9.6 11.0
15	E	Trinity Sunday. Tides {9.9 11.5
16	M.	♂ ☿ ☾. ♀ in ♉. ☾ in Peri. {10.2 11.8
17	Tu.	☾ runs low. Battle of Bunker Hill, 1775. Tides {10.3 12.0
18	W.	Battle of Waterloo, 1815. Tides {— 10.4
19	Th.	Corpus Christi. Tides {11.9 10.3
20	Fr.	Tides {11.5 10.2
21	Sa.	♂ ♂ ☾. ☉ ent. ♋. SUMMER BEGINS. {11.1 9.9
22	E	1st Su. after Trin. ♂ ♅ ☾. {10.5 9.7
23	M.	Penn makes treaty with Indians, 1683. Tides {9.9 9.5
24	Tu.	St. John, Baptist. ☾ on Eq. Tides {9.4 9.4
25	W.	Tides {8.9 9.3
26	Th.	☿ in ♌. ♅ stat. {8.6 9.3
27	Fr.	Tides {8.5 9.4
28	Sa.	{8.5 9.5 29th. ♄ stat. ☾ in Apo.
29	E	2d Sun. after Trin. Tides {8.5 9.7
30	M.	Tides {8.6 9.8 29th. St. Peter & St. Paul.

Farmer's Calendar.

This is the month when all nature is abloom.

What is the difference between your eye and a glass eye? The glass eye does not see, has no life, and is not connected with the brain, are satisfactory answers. There are thousands of human eyes, which have life, which are connected with the brain, but they see merely a fraction of the objects which cross their path. These differences in extent of observation are not due to faulty construction. The eye is a wonderful piece of work. Learned scientists have not been able to make eyes that see. The eye, which has been blessed with sight, can be made to see still more, without the services of expert and expensive training.

The first requirement is to create an interest in any particular subject or a number of subjects. For example, let us select flowers. There are few people who can not see flowers daily, but do they know the names, etc.? Children and flowers form a splendid combination to train the eyes. The earlier such a combination is formed the more effective it will be. The good Lord has given us flowers and eyes. Who can afford to be deprived of the wholesome pleasure, the friendship of nature, and its lessons of life, and the splendid training in observation which flowers offer to all of us?

Some warm days. South-westerly winds. Rain. Warm for the season.

1924] JULY, Seventh Month.

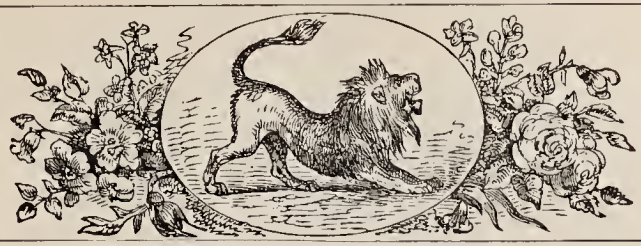
ASTRONOMICAL CALCULATIONS.

☉'s Declination.	Days.	d. m.	Days.	d. m.	Days.	d. m.	Days.	d. m.	Days.	d. m.
	1	23N. 6	7	22 34	13	21 49	19	20 49	25	19 37
	2	23 2	8	22 28	14	21 40	20	20 38	26	19 24
	3	22 57	9	22 21	15	21 30	21	20 27	27	19 11
	4	22 52	10	22 13	16	21 21	22	20 15	28	18 57
	5	22 47	11	22 5	17	21 11	23	20 3	29	18 43
	6	22 41	12	21 57	18	21 0	24	19 50	30	18 29

● New Moon, 2d day, 0h. 35m., morning, E.
☽ First Quarter, 9th day, 4h. 46m., evening, E.
○ Full Moon, 16th day, 6h. 49m., morning, W.
☾ Last Quarter, 23d day, 11h. 36m., morning, W.
● New Moon, 31st day, 2h. 42m., evening, W.

Day of Year.	Day of Month.	Day of the Week.	☉ Rises. h. m.	☉ Sets. h. m.	Length of Days. h. m.	Day's Decr. h. m.	Sun Fast. m.	Moon's Age.	Full Sea, Boston. Morn h.	Full Sea, Boston. Even h.	☽'s Place	☽ Rises. h. m.	☽ Souths. h. m.
183	1	Tu.	4 10	7 25	15 15	0 4	12	29	10¾	11	br.	3 53	11 21
184	2	W.	4 11	7 25	15 14	0 5	12	●	11½	11¾	br.	sets	0 10
185	3	Th.	4 11	7 25	15 14	0 5	12	1	—	0¼	br.	8 21	0 58
186	4	Fr.	4 12	7 25	15 13	0 6	12	2	0½	1	h'rt	9 0	1 47
187	5	Sa.	4 12	7 25	15 13	0 6	11	3	1	1½	h'rt	9 35	2 35
188	6	S.	4 13	7 24	15 11	0 8	11	4	1¾	2¼	bel.	10 9	3 23
189	7	M.	4 14	7 24	15 10	0 9	11	5	2½	3	bel.	10 40	4 10
190	8	Tu.	4 14	7 24	15 10	0 9	11	6	3¼	3¾	rei.	11 11	4 58
191	9	W.	4 15	7 23	15 8	0 11	11	7	4¼	4¾	rei.	11 43	5 46
192	10	Th.	4 16	7 23	15 7	0 12	11	8	5	5½	rei.	morn	6 37
193	11	Fr.	4 17	7 23	15 6	0 13	10	9	6	6½	sec.	0 17	7 31
194	12	Sa.	4 17	7 22	15 5	0 14	10	10	7	7½	sec.	0 54	8 27
195	13	S.	4 18	7 21	15 3	0 16	10	11	8	8½	thi.	1 37	9 27
196	14	M.	4 19	7 21	15 2	0 17	10	12	9	9½	thi.	2 27	10 28
197	15	Tu.	4 20	7 20	15 0	0 19	10	13	10	10¼	kn.	3 24	11 30
198	16	W.	4 21	7 19	14 58	0 21	10	○	11	11¼	kn.	rises	morn
199	17	Th.	4 21	7 19	14 58	0 21	10	15	11¾	—	legs	8 15	0 31
200	18	Fr.	4 22	7 18	14 56	0 23	10	16	0	0¾	legs	8 55	1 28
201	19	Sa.	4 23	7 17	14 54	0 25	10	17	1	1½	feet	9 31	2 22
202	20	S.	4 24	7 16	14 52	0 27	10	18	1¾	2½	feet	10 2	3 12
203	21	M.	4 25	7 15	14 50	0 29	10	19	2¾	3¼	h'd	10 31	4 0
204	22	Tu.	4 26	7 15	14 49	0 30	9	20	3½	4¼	h'd	11 0	4 45
205	23	W.	4 27	7 13	14 46	0 33	9	21	4½	5	n'k	11 29	5 29
206	24	Th.	4 28	7 13	14 45	0 34	9	22	5¼	5¾	n'k	11 59	6 13
207	25	Fr.	4 29	7 12	14 43	0 36	9	23	6¼	6¾	n'k	morn	6 57
208	26	Sa.	4 30	7 11	14 41	0 38	9	24	7	7½	arm	0 33	7 42
209	27	S.	4 31	7 10	14 39	0 40	9	25	8	8¼	arm	1 9	8 29
210	28	M.	4 32	7 9	14 37	0 42	9	26	8¾	9	br.	1 50	9 16
211	29	Tu.	4 33	7 8	14 35	0 44	9	27	9½	9¾	br.	2 36	10 5
212	30	W.	4 34	7 7	14 33	0 46	9	28	10¼	10½	br.	3 26	10 54
213	31	Th.	4 35	7 6	14 31	0 48	10	●	11	11¼	h'rt	sets	11 43

JULY hath 31 days. [1924



Balmily, balmily, summer wind,
Sigh through the mountain passes;
Over the sleep of the beautiful deep,
Over the woods' green masses,
Ripple the grain of valley and plain,
And the reeds and the river grasses.

INA DONNA COOLBRITH.

D.M.	D.W.	Aspects, Holidays, Heights of High Water, etc.	Farmer's Calendar.
1	Tu.	☿ in Peri. ☌♀☉. inf. ☌☿☾. {8.7 9.9	The hot weather comes in earnest this month.
2	W.	Washington arrives at Cambridge, 1775. 1st. ☌♀☾. {8.8 10.0	The other evening we had a delightful picnic supper with the Smiths. We drove out the Post Road, turned into the woods, and in three quarters of an hour we were among magnificent maples and oaks, under which a spring bubbled forth its cold water. There was not a sign or sound of other human occupation.
3	Th.	☌☿♀. {— 8.8 1st. ☾ runs high. *Rain.*	
4	Fr.	INDEPENDENCE DAY. 3d. ⊕ in Aph. Tides {9.9 8.9	
5	Sa.	☌♅☾. ☌☿☉. Sup. {9.9 8.9 *Good*	
6	E	3d Sun. af. Trin. Tides {9.8 9.0	
7	M.	Richard Brinsley Sheridan died, 1816. Tides {9.6 9.1	While the baskets were being unpacked, a fire-red streak darted through the trees, and alighted overhead. Never, in my sixty years, had I seen such a brilliant bird. James, eight years old, joyously proclaimed: "A scarlet tanager! The first we have seen this year! The twenty-seventh bird for my list!" He informed me that it spends the winter in South America, arrives about May and leaves in October. A man offered him ten dollars for a red baby tanager, but he knew they were not red before their second season.
8	Tu.	Tides {9.5 9.2 *haying*	
9	W.	☾ on Equator. {9.3 9.5 *weather.*	
10	Th.	☌♄☾. Tides {9.2 9.7	
11	Fr.	☿ Gr. Hel. Lat. N. Tides {9.1 10.1	
12	Sa.	Tides {9.1 10.5	
13	E	4th S. af. Trin. ☌♃☾. {9.3 10.9	
14	M.	☾ in Peri. Tides {9.5 11.3	
15	Tu.	St. Swithin. ☾ runs low. {9.8 11.5 *Sultry*	
16	W.	Utah admitted to the Union, 1894. Tides {10.1 11.6	
17	Th.	Tides {10.2 — *with*	
18	Fr.	□♄☉. Tides {11.6 12.2 *showers.*	
19	Sa.	☌♂☾. 20th. ☌♅☾. Tides {11.3 10.1	
20	E	5th S. af. Trin. St. Margaret. {10.8 10.0	
21	M.	♀ in Aph. ☾ on Eq. Tides {10.3 9.7	
22	Tu.	St. Mary Magd. ♀ stat. {9.7 9.5 *More*	
23	W.	☌☿♆. Tides {9.1 9.3 *comfort-*	
24	Th.	Tides {8.7 9.1 *able.*	
25	Fr.	St. James. ♂ stat. DOG DAYS BEGIN. {8.3 9.1	
26	Sa.	St. Anne. ☾ in Apo. Tides {8.1 9.1	
27	E	6th Sun. af. Trinity. Tides {8.1 9.3	
28	M.	☌♀☾. Tides {8.2 9.5	
29	Tu.	☾ runs high. Tides {8.4 9.7	
30	W.	Tides {8.6 9.9 *Unsettled.*	
31	Th.	☉ Par. ecl. invis. Tides {8.8 10.0	

Where did he learn these facts? Two years ago his uncle had given him a bird book on his birthday. James told me many things about birds. Tomorrow afternoon I shall call on him and his mother. They promised to show me catbirds, which nest in the barberries in their garden. It may seem singular to have a child teach a grandfather, but one never becomes too old to learn.

1924] AUGUST, Eighth Month.

ASTRONOMICAL CALCULATIONS.

☉'s Declination.	Days.	d.	m.	Days.	d.	m.	Days.	d.	m.	Days.	d.	m.	Days.	d.	m.
	1	17 N.	59	7	16	23	13	14	37	19	12	43	25	10	42
	2	17	43	8	16	6	14	14	19	20	12	24	26	10	21
	3	17	28	9	15	49	15	14	0	21	12	4	27	10	0
	4	17	12	10	15	31	16	13	41	22	11	44	28	9	39
	5	16	56	11	15	13	17	13	22	23	11	23	29	9	18
	6	16	39	12	14	55	18	13	3	24	11	3	30	8	56

☽ First Quarter, 7th day, 10h. 41m., evening, W.
○ Full Moon, 14th day, 3h. 19m., evening, E.
☾ Last Quarter, 22d day, 4h. 10m., morning, W.
● New Moon, 30th day, 3h. 37m., morning, E.

Day of Year.	Day of Month.	Day of the Week.	☉ Rises. h.	m.	☉ Sets. h.	m.	Length of Days. h.	m.	Day's Decr. h.	m.	Sun Fast. m.	Moon's Age.	Full Sea, Boston. Morn h.	Even h.	☽'s Place	☽ Sets. h.	m.	☽ Souths. h.	m.
214	1	Fr.	4	36	7	5	14	29	0	50	10	1	11¾	—	h'rt	7	37	0	32
215	2	Sa.	4	37	7	3	14	26	0	53	10	2	0	0½	bel.	8	11	1	20
216	3	S.	4	38	7	2	14	24	0	55	10	3	0¾	1	bel.	8	44	2	8
217	4	M.	4	39	7	1	14	22	0	57	10	4	1¼	1¾	bel.	9	15	2	56
218	5	Tu.	4	40	7	0	14	20	0	59	10	5	2	2½	rei.	9	46	3	44
219	6	W.	4	41	6	58	14	17	1	2	10	6	3	3¼	rei	10	19	4	34
220	7	Th.	4	42	6	57	14	15	1	4	10	7	3¾	4¼	sec.	10	54	5	25
221	8	Fr.	4	43	6	56	14	13	1	6	10	8	4¾	5¼	sec.	11	34	6	19
222	9	Sa.	4	44	6	55	14	11	1	8	10	9	5¾	6¼	thi.	morn		7	15
223	10	S.	4	45	6	53	14	8	1	11	11	10	6¾	7¼	thi.	0	19	8	14
224	11	M.	4	46	6	52	14	6	1	13	11	11	7¾	8¼	kn.	1	11	9	14
225	12	Tu.	4	47	6	50	14	3	1	16	11	12	8¾	9¼	kn.	2	10	10	14
226	13	W.	4	48	6	49	14	1	1	18	11	13	9¾	10	legs	3	16	11	12
227	14	Th.	4	49	6	48	13	59	1	20	11	○	10¾	11	legs	rises		morn	
228	15	Fr.	4	50	6	46	13	56	1	23	11	15	11½	11¾	feet	7	26	0	8
229	16	Sa.	4	51	6	45	13	54	1	25	12	16	—	0¼	feet	8	0	1	0
230	17	S.	4	52	6	43	13	51	1	28	12	17	0¾	1	h'd	8	30	1	50
231	18	M.	4	54	6	42	13	48	1	31	12	18	1½	2	h'd	9	0	2	37
232	19	Tu.	4	55	6	40	13	45	1	34	12	19	2¼	2¾	h'd	9	29	3	22
233	20	W.	4	56	6	38	13	42	1	37	13	20	3	3½	n'k	10	0	4	7
234	21	Th.	4	57	6	37	13	40	1	39	13	21	3¾	4¼	n'k	10	32	4	52
235	22	Fr.	4	58	6	35	13	37	1	42	13	22	4½	5	arm	11	7	5	37
236	23	Sa.	5	59	6	34	13	35	1	44	13	23	5½	6	arm	11	46	6	23
237	24	S.	5	0	6	32	13	32	1	47	14	24	6½	6¾	arm	morn		7	10
238	25	M.	5	1	6	31	13	30	1	49	14	25	7¼	7¾	br.	0	29	7	58
239	26	Tu.	5	2	6	29	13	27	1	52	14	26	8¼	8½	br.	1	18	8	47
240	27	W.	5	3	6	27	13	24	1	55	14	27	9	9¼	h'rt	2	11	9	36
241	28	Th.	5	4	6	26	13	22	1	57	15	28	9¾	10	h'rt	3	9	10	25
242	29	Fr.	5	5	6	24	13	29	2	0	15	29	10½	10¾	h'rt	4	10	11	14
243	30	Sa.	5	6	6	23	13	17	2	2	15	●	11¼	11½	bel.	sets		0	3
244	31	S.	5	7	6	21	13	14	2	5	16	1	—	0	bel.	7	16	0	52

AUGUST hath 31 days. [1924

Midsummer music in the grass —
The cricket and the grasshopper;
White daisies and red clover pass;
The caterpillar trails her fur
After the languid butterfly;
But green and spring-like is the sod
Where autumus earliest lamps I spy —
The tapers of the golden-rod. LUCY LARCOM.

D.M.	D.W.	Aspects, Holidays, Heights of High Water, etc.	Farmer's Calendar.
1	Fr.	Lammas Day. ♂ ♆ ☾. {9.0 — *Cool*	New England is a natural geographical and agricultural unit of the United States. Its diversified climate, soils and physiography lend it to a diversification of farming exceeded in no other section of the country. With an annual rainfall of about forty inches (usually well distributed) with a range in temperature of 80 to 90 degrees in late summer to 10 to 30 degrees below zero in midwinter, with types of soil varying from light sandy loams to heavy boulder clays, and from muck lands to granite hardpans, and with arable fields ranging in elevation from sea level to two thousand feet, New England can well boast of those natural conditions and resources which are necessary for the growth of a varied and useful category of plants. New England taken as a single state would rank as follows: Third in population (being exceeded only by New York and Pennsylvania), nineteenth in area, twenty-first in the value of farm crops grown, and eleventh in the value of dairy products produced. It is thus seen that a relatively large population for the consumption of farm products is found within the area. New England, especially the White Mountain region, is the great summer resort and vacation ground of the country, all of which means good markets and good prices for all kinds of food materials.
2	Sa.	♂ ☿ ☾. Tides {10.1 9.2	
3	E	7th S. af. Trin. {10.1 9.3 *easterly*	
4	M.	Tides {10.0 9.5 3d ☿ in ♍.	
5	Tu.	♂ Gr. Hel. Lat. S. ☾ on Eq. Tides {9.9 9.6	
6	W.	Transfiguration. ♂ ♄ ☾. {9.7 9.8 *winds.*	
7	Th.	♌ stat. ♀ Gr. Brill. Tides {9.4 9.5	
8	Fr.	Tides {9.2 9.9 *Showery*	
9	Sa.	♂ ♌ ☾. Tides {9.0 10.1 *conditions.*	
10	E	8th S. af. Trin. St. Lawrence. {8.9 10.3	
11	M.	☾ in Peri. ☾ runs low. Tides {9.0 10.5	
12	Tu.	♀ Gr. Hel. Lat. S. ♂ ♆ ☉. Tides {9.3 10.8	
13	W.	Tides {9.6 11.1	
14	Th.	☿ in Aph. ☾ Total eclipse, invisible. {9.9 11.2	
15	Fr.	Assum. of V. Mary. ☿ Gr. elong E. {10.1 11.1	
16	Sa.	♂ ♅ ☾. Battle of Bennington, 1777. {— 10.2 15th. ♂ ♂ ☾.	
17	E	9th S. af. Trin. {10.9 10.2 *Continued*	
18	M.	☾ on Equator. Tides {10.4 10.0	
19	Tu.	Constitution captures Guerriere, 1812. Tides {10.0 9.7	
20	W.	Benjamin Harrison born, 1833. Tides {9.4 9.4	
21	Th.	Tides {8.9 9.2 *warm,*	
22	Fr.	♂ nearest ⊕. Tides {8.5 8.9	
23	Sa.	♂ ♂ ☉. ☾ in Apo. Tides {8.1 8.8	
24	E	10th Sun. after Trin. Tides {8.0 8.8	
25	M.	☾ runs high. 24th. St. Bartholomew. {8.0 9.0	
26	Tu.	♂ ♀ ☾. Tides {8.1 9.2 *Rain.*	
27	W.	Tides {8.4 9.5	
28	Th.	St. Augustine. ☿ stat. ♂ ♆ ☾. {8.7 9.8	
29	Fr.	Beheading of St. John, Baptist. Tides {9.1 10.1	
30	Sa.	♂ in Peri. 29th. ☉ Partial eclipse invisible. {9.4 10.3	
31	E	11th S. af. Trin. ♂ ☿ ☾. {— 9.8	

ASTRONOMICAL CALCULATIONS.

☉'s Declination.	Days.	d.	m.	Days.	d.	m.	Days.	d.	m.	Days.	d.	m.	Days.	d.	m.
	1	8N.	13	7	6	0	13	3	44	19	1	25	25	0	56
	2	7	51	8	5	38	14	3	21	20	1	1	26	1	19
	3	7	29	9	5	15	15	2	57	21	0	38	27	1	42
	4	7	7	10	4	52	16	2	34	22	0N.	15	28	2	6
	5	6	45	11	4	29	17	2	11	23	0S.	9	29	2	29
	6	6	23	12	4	6	18	1	48	24	0	32	30	2	52

☽ First Quarter, 6th day, 3h. 46m., morning, W.

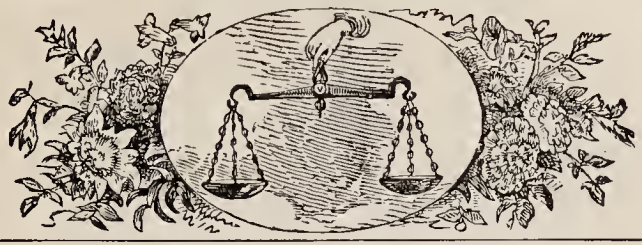
○ Full Moon, 13th day, 2h. 0m., morning, W.

☾ Last Quarter, 20th day, 10h. 35m., evening, E.

● New Moon, 28th day, 3h. 16m., evening, W.

Day of Year.	Day of Month.	Day of the Week.	☉ Rises. h.	m.	☉ Sets. h.	m.	Length of Days. h.	m.	Day's Decr. h.	m.	Sun Fast. m.	Moon's Age.	Full Sea, Boston. Morn h.	Even h.	☽'s Place	☽ Sets. h.	m.	☽ Souths. h.	m.
245	1	M.	5	8	6	19	13	11	2	8	16	2	0¼	0¾	rei.	7	48	1	41
246	2	Tu.	5	9	6	17	13	8	2	11	16	3	1	1¼	rei.	8	21	2	31
247	3	W.	5	11	6	16	13	5	2	14	16	4	1¾	2	sec.	8	55	3	22
248	4	Th.	5	12	6	14	13	2	2	17	17	5	2½	3	sec.	9	34	4	15
249	5	Fr.	5	13	6	12	12	59	2	20	17	6	3½	3¾	thi.	10	17	5	10
250	6	Sa.	5	14	6	11	12	57	2	22	17	7	4¼	4¾	thi.	11	6	6	7
251	7	S.	5	15	6	9	12	54	2	25	18	8	5½	5¾	kn.	morn		7	6
252	8	M.	5	16	6	7	12	51	2	28	18	9	6½	7	kn.	0	1	8	4
253	9	Tu.	5	17	6	5	12	48	2	31	19	10	7½	8	legs	1	3	9	1
254	10	W.	5	18	6	4	12	46	2	33	19	11	8½	9	legs	2	8	9	57
255	11	Th.	5	19	6	2	12	43	2	36	19	12	9½	10	legs	3	15	10	49
256	12	Fr.	5	20	6	0	12	40	2	39	20	13	10¼	10¾	feet	4	23	11	39
257	13	Sa.	5	21	5	58	12	37	2	42	20	○	11¼	11½	feet	rises		morn	
258	14	S.	5	22	5	57	12	35	2	44	20	15	—	0	h'd	6	58	0	27
259	15	M.	5	23	5	55	12	32	2	47	21	16	0¼	0¾	h'd	7	28	1	14
260	16	Tu.	5	24	5	53	12	29	2	50	21	17	1	1½	n'k	7	58	2	0
261	17	W.	5	25	5	51	12	26	2	53	21	18	1¾	2	n'k	8	30	2	45
262	18	Th.	5	26	5	50	12	24	2	55	22	19	2½	2¾	n'k	9	4	3	30
263	19	Fr.	5	27	5	48	12	21	2	58	22	20	3¼	3½	arm	9	41	4	16
264	20	Sa.	5	29	5	46	12	17	3	2	22	21	4	4½	arm	10	23	5	3
265	21	S.	5	30	5	44	12	14	3	5	23	22	5	5¼	br.	11	9	5	50
266	22	M.	5	31	5	42	12	11	3	8	23	23	5¾	6¼	br.	morn		6	38
267	23	Tu.	5	32	5	41	12	9	3	10	23	24	6¾	7	br.	0	0	7	27
268	24	W.	5	33	5	39	12	6	3	13	24	25	7¾	8	h'rt	0	55	8	16
269	25	Th.	5	34	5	37	12	3	3	16	24	26	8½	8¾	h'rt	1	55	9	5
270	26	Fr.	5	35	5	35	12	0	3	19	24	27	9¼	9½	bel.	2	57	9	54
271	27	Sa.	5	36	5	34	11	58	3	21	25	28	10	10¼	bel.	4	2	10	43
272	28	S.	5	37	5	32	11	55	3	24	25	●	10¾	11	rei.	sets		11	33
273	29	M.	5	38	5	30	11	52	3	27	25	1	11½	11¾	rei.	6	20	0	24
274	30	Tu.	5	39	5	28	11	49	3	30	26	2	—	0¼	sec.	6	55	1	16

SEPTEMBER hath 30 days. [1924



The cricket chirps all day,
"O fairest Summer, stay!"
The squirrel eyes askance the chestnuts browning;
The wild fowl fly afar
Above the foamy bar,
And hasten southward ere the skies are frowning.

GEORGE ARNOLD.

D.M.	D.W.	Aspects, Holidays, Heights of High Water, etc.	Farmer's Calendar.
1	M.	☾ on Eq. LABOR DAY. Tides {10.3 10.0 *Fine*	Everywhere schools will be reopening this month.
2	Tu.	♂ ♄ ☾. Tides {10.3 10.2	"To every man an opinion and to every opinion an utterance," is an old proverb. Opinions are the products of the mind. The character of the opinion reflects the training of the mind. All minds are not trained to the same degree; therefore, we naturally expect a variety and difference of opinions. Our future welfare is dependent upon the good opinions, the products of well trained minds.
3	W.	☿ Gr.Hel. Lat. S. □ ♃ ☉. Tides {10.1 10.3 *and*	
4	Th.	Tides {9.8 10.3	
5	Fr.	♂ ♃ ☾. DOG DAYS END. {9.5 10.2 *clear.*	
6	Sa.	Lafayette born, 1757. Tides {9.2 10.1 7th. ☾ in Peri.	
7	E	12th S. af. Trin. ☾ runs low. {8.9 10.0	The purpose of public schools, colleges, and universities is to train the minds of the present and the future generations, so that there may be more good opinions. How much will these good opinions accomplish, if they are not liberated, if they do not find utterance, and acceptance in other well trained minds?
8	M.	Nativity of Vir. Mary. State elec. Maine. {8.8 10.0	
9	Tu.	Tides {9.0 10.1 *A*	
10	W.	♀ Gr. elong. W. Tides {9.3 10.4	
11	Th.	♂ ☿ ☉ Inf. ♂ ♂ ☾. {9.6 10.6 *warm*	
12	Fr.	♂ ♅ ☉. ♂ ♅ ☾. Tides {10.0 10.7	
13	Sa.	Star Spangled Banner written, 1814. {10.2 10.6 *spell.*	
14	E	13th Sun. af. Trin. ☾ on Eq. {— 10.3	The oldest and most forceful manner of liberating opinions is by word of mouth. A course in public speaking is to be found at most schools. How many students and parents fully recognize its importance? When asked for your opinion at a public meeting, how often have you found it difficult to express yourself? Never, in the history of the world, have good opinions, clearly expressed, been needed more than during the present national and international controversies.
15	M.	Tides {10.4 10.2	
16	Tu.	Samuel Adams born, 1722. Tides {10.0 10.0 *Look*	
17	W.	Washington's "Farewell Address," 1796. {9.6 9.7 *for a*	
18	Th.	Corner stone of U.S. Capitol laid, 1793. Tides {9.2 9.4 *hard*	
19	Fr.	☿ stat. Tides {8.7 9.1 *rain.*	
20	Sa.	☾ in Apo. 21st. ☾ runs high. Tides {8.4 8.9	
21	E	14th S. af. Trin. St. Matthew. {8.1 8.7	
22	M.	☿ in ♌. Tides {7.9 8.7 *Clear*	
23	Tu.	☉ enters ♎. AUTUMN BEGINS. {8.0 8.8 *and*	
24	W.	♂ stat. ♂ ♀ ☾. {8.2 9.1 *cool,*	
25	Th.	♂ ♆ ☾. Tides {8.6 9.4 *local*	
26	Fr.	Tides {9.0 9.8 *frosts.*	
27	Sa.	☿ in Peri. ☿ Gr. elong. W. ♂ ☿ ☾. {9.5 10.1	
28	E	15th S. af. Trin. ☾ on Eq. {10.1 10.4	
29	M.	St. Michael and All Angels. Tides {10.5 10.5	
30	Tu.	St. Jerome. ♂ ♀ ♆. ♂ ♄ ☾. {— 10.3	

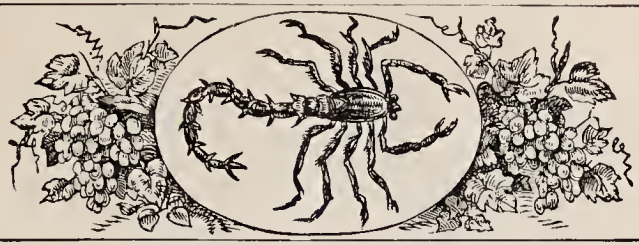
ASTRONOMICAL CALCULATIONS.

☉'s Declination.	Days.	d. m.	Days.	d. m.	Days.	d. m.	Days.	d. m.	Days.	d. m.
	1	3s. 16	7	5 35	13	7 51	19	10 3	25	12 10
	2	3 39	8	5 58	14	8 13	20	10 25	26	12 31
	3	4 2	9	6 20	15	8 36	21	10 46	27	12 51
	4	4. 26	10	6 43	16	8 58	22	11 8	28	13 12
	5	4 49	11	7 6	17	9 20	23	11 29	29	13 32
	6	5 12	12	7 29	18	9 42	24	11 50	30	13 51

☽ First Quarter, 5th day, 9h. 30m., morning, E.
○ Full Moon, 12th day, 3h. 21m., evening, E.
☾ Last Quarter, 20th day, 5h. 54m., evening, W.
● New Moon, 28th day, 1h. 57m., morning, E.

Day of Year.	Day of Month.	Day of the Week.	☉ Rises. h. m.	☉ Sets. h. m.	Length of Days. h. m.	Day's Decr. h. m.	Sun Fast. m.	Moon's Age.	Full Sea, Boston. Morn h.	Full Sea, Boston. Even h.	☽'s Place	☽ Sets. h. m.	☽ Souths. h. m.
275	1	W.	5 40	5 27	11 47	3 32	26	3	0½	1	sec.	7 32	2 9
276	2	Th.	5 42	5 25	11 43	3 36	26	4	1½	1¾	thi.	8 15	3 5
277	3	Fr.	5 43	5 23	11 40	3 39	27	5	2¼	2½	thi.	9 2	4 3
278	4	Sa.	5 44	5 21	11 37	3 42	27	6	3¼	3½	thi.	9 56	5 1
279	5	S.	5 45	5 20	11 35	3 44	27	7	4	4½	kn.	10 55	5 59
280	6	M.	5 46	5 18	11 32	3 47	28	8	5¼	5½	kn.	11 59	6 56
281	7	Tu.	5 47	5 16	11 29	3 50	28	9	6¼	6¾	legs	morn	7 51
282	8	W.	5 48	5 15	11 27	3 52	28	10	7¼	7¾	legs	1 5	8 43
283	9	Th.	5 49	5 13	11 24	3 55	28	11	8¼	8¾	feet	2 11	9 33
284	10	Fr.	5 51	5 11	11 20	3 59	29	12	9¼	9¾	feet	3 17	10 21
285	11	Sa.	5 52	5 10	11 18	4 1	29	13	10	10½	h'd	4 21	11 7
286	12	S.	5 53	5 8	11 15	4 4	29	○	10¾	11¼	h'd	rises	11 53
287	13	M.	5 54	5 6	11 12	4 7	29	15	11½	—	n'k	5 57	morn
288	14	Tu.	5 55	5 5	11 10	4 9	30	16	0	0¼	n'k	6 28	0 38
289	15	W.	5 56	5 3	11 7	4 12	30	17	0½	0¾	n'k	7 1	1 24
290	16	Th.	5 57	5 2	11 5	4 14	30	18	1¼	1½	arm	7 37	2 9
291	17	Fr.	5 59	5 0	11 1	4 18	30	19	2	2¼	arm	8 17	2 56
292	18	Sa.	6 0	4 58	10 58	4 21	31	20	2¾	3	br.	9 1	3 43
293	19	S.	6 1	4 57	10 56	4 23	31	21	3½	3¾	br.	9 50	4 31
294	20	M.	6 2	4 55	10 53	4 26	31	22	4¼	4½	br.	10 43	5 19
295	21	Tu.	6 3	4 54	10 51	4 28	31	23	5¼	5½	h'rt	11 39	6 7
296	22	W.	6 5	4 52	10 47	4 32	31	24	6¼	6½	h'rt	morn	6 55
297	23	Th.	6 6	4 51	10 45	4 34	31	25	7	7¼	bel.	0 40	7 43
298	24	Fr.	6 7	4 49	10 42	4 37	32	26	7¾	8¼	bel.	1 43	8 32
299	25	Sa.	6 8	4 48	10 40	4 39	32	27	8¾	9	bel.	2 48	9 21
300	26	S.	6 9	4 47	10 38	4 41	32	28	9½	9¾	rei.	3 56	10 11
301	27	M.	6 11	4 45	10 34	4 45	32	29	10¼	10¾	rei.	5 7	11 3
302	28	Tu.	6 12	4 44	10 32	4 47	32	●	11	11½	sec.	sets	11 57
303	29	W.	6 13	4 42	10 29	4 50	32	1	11¾	—	sec.	6 8	0 53
304	30	Th.	6 14	4 41	10 27	4 52	32	2	0¼	0½	thi.	6 55	1 52
305	31	Fr.	6 16	4 40	10 24	4 55	32	3	1	1¼	thi.	7 48	2 53

OCTOBER hath 31 days. [1924



Oh, sweet October day,
Jewel in Autumn's crown!
How shall I sing my lay
While the merry leaves float down
And lie in heaps at my feet,
Golden and red and brown?

RHODA BARTLETT SEYMOUR.

D.M	D.W.	Aspects, Holidays, Heights of High Water, etc.	Farmer's Calendar.
1	W.	Tides {10.5 / 11.0 *Frosty*	The American people are notoriously wasteful and the farmer is no exception. This is one reason why so many farmers are failures, or only half successes. There are too many leaks with which water and pumps have nothing to do. It is the little things in the aggregate which make the big ones, and success or failure frequently hinges on them. Barnum said, "Everybody likes to be humbugged." The farmer "bites" just as easy as other folks for the lightning rod man, the street fakir, the quack doctor and the summerbook agent.
2	Th.	☾ in Peri. Tides {10.3 / 11.0	
3	Fr.	☌ ☿ ☾. Tides {10.0 / 10.8 *nights.*	
4	Sa.	Battle of Germantown, 1777. Tides {9.6 / 10.5	
5	E	16th S. af. Trin. ☾ runs low. {9.3 / 10.2	
6	M.	Tides {9.0 / 9.9	
7	Tu.	☿ Gr. Hel. Lat. N. ♀ in ♌. Tides {8.9 / 9.7	
8	W.	☌ ☍ ☾. Tides {9.1 / 9.8	
9	Th.	St. Denis. Tides {9.4 / 9.9	
10	Fr.	☌ ♅ ☾. Tides {9.7 / 10.0 *Expect*	
11	Sa.	☾ on Equator. {10.0 / 10.1 *some*	
12	E	17th Sun. af. Trin. Tides {10.2 / 10.0	
13	M.	Tides {10.3 / — 12th. COLUMBUS DAY. *wet*	
14	Tu.	Tides {9.9 / 10.2	
15	W.	Tides {9.6 / 10.0 *weather.*	
16	Th.	Noah Webster born, 1758. Tides {9.3 / 9.8	
17	Fr.	Surrender of Burgoyne, 1777. Tides {9.0 / 9.5	
18	Sa.	St. Luke. ☾ in Apo. Tides {8.6 / 9.2	
19	E	18th S. af. Tr. ☾ runs high. {8.3 / 8.9 *Clear*	
20	M.	John Winthrop chosen Governor, 1629. Tides {8.1 / 8.7	
21	Tu.	Tides {8.0 / 8.6	
22	W.	☌ ♆ ☾. Tides {8.1 / 8.7 *and*	
23	Th.	Tides {8.4 / 8.9 *cooler.*	
24	Fr.	☌ ♀ ☾. Tides {8.8 / 9.3	
25	Sa.	St. Crispin. ☌ ☿ ☉ Sup. Tides {9.4 / 9.6	
26	E	19th Sun. af. Trin. ☾ on Eq. {10.0 / 10.0	
27	M.	☌ ☿ ♄. Tides {10.7 / 10.3 *A*	
28	Tu.	St. Simon & St. Jude ☌ ♄ ☾. {11.2 / 10.5 *few*	
29	W.	Tides {11.5 / — 28th. ☌ ♄ ☉. ☌ ☿ ☾.	
30	Th.	☿ in ♌. ☾ in Peri. {10.5 / 11.6 *mild*	
31	Fr.	All Hallows Eve. ☌ ☿ ☾. {10.4 / 11.5 *days.*	

Some of the farmer's greatest losses are traceable to neglect,—such as sickness due to poor sanitation, loss by fire due to a defective flue, or a serious injury or smashed implement due to a broken harness.

An average farm will produce 200 loads of manure per year worth $2 per load. If half of this is wasted through poor housing and handling, there goes $200. Many farms have too much capital invested in expensive machinery which lies idle 350 days in the year. Light, undersize horses, "boarder" cows and unculled hens, which are eating their heads off, are constant leaks.

Tools scattered over the farm or housed under the apple tree, stubble stones unpicked, and old fences which should be removed, are sources of loss and signs of the careless farmer.

ASTRONOMICAL CALCULATIONS.

☉'s Declination.	Days.	d.	m.	Days.	d.	m.	Days.	d.	m.	Days.	d.	m.	Days.	d.	m.
	1	14s.	30	7	16	21	13	18	2	19	19	31	25	20	48
	2	14	49	8	16	38	14	18	17	20	19	45	26	20	59
	3	15	8	9	16	56	15	18	33	21	19	58	27	21	10
	4	15	27	10	17	13	16	18	48	22	20	11	28	21	21
	5	15	45	11	17	29	17	19	3	23	20	24	29	21	31
	6	16	3	12	17	46	18	19	17	24	20	36	30	21	41

☽ First Quarter 3d day, 5h. 19m., evening, E.
○ Full Moon, 11th day, 7h. 31m., morning, W.
☾ Last Quarter, 19th day, 0h. 39m., evening, W.
● New Moon, 26th day, 0h. 16m., evening, W.

Day of Year.	Day of Month.	Day of the Week.	☉ Rises. h.	m.	☉ Sets. h.	m.	Length of Days. h.	m.	Day's Decr. h.	m.	Sun Fast. m.	Moon's Age.	Full Sea, Boston. Morn h.	Even h.	☽'s Place	☽ Sets. h.	m.	☽ Souths. h.	m.
306	1	Sa.	6	17	4	38	10	21	4	58	32	4	2	2¼	kn.	8	47	3	53
307	2	☾	6	18	4	37	10	19	5	0	32	5	3	3¼	kn.	9	51	4	52
308	3	M.	6	19	4	36	10	17	5	2	32	6	3¾	4¼	legs	10	57	5	48
309	4	Tu.	6	21	4	35	10	14	5	5	32	7	5	5¼	legs	morn		6	41
310	5	W.	6	22	4	34	10	12	5	7	32	8	6	6½	feet	0	3	7	31
311	6	Th.	6	23	4	32	10	9	5	10	32	9	7	7½	feet	1	8	8	18
312	7	Fr.	6	24	4	31	10	7	5	12	32	10	8	8½	h'd	2	13	9	4
313	8	Sa.	6	26	4	30	10	4	5	15	32	11	9	9¼	h'd	3	16	9	49
314	9	☾	6	27	4	29	10	2	5	17	32	12	9¾	10¼	h'd	4	17	10	34
315	10	M.	6	28	4	28	10	0	5	19	32	13	10½	10¾	n'k	5	18	11	19
316	11	Tu.	6	29	4	27	9	58	5	21	32	○	11	11½	n'k	rises		morn	
317	12	W.	6	31	4	26	9	55	5	24	32	15	11¾	—	arm	5	35	0	4
318	13	Th.	6	32	4	25	9	53	5	26	31	16	0¼	0½	arm	6	13	0	51
319	14	Fr.	6	33	4	24	9	51	5	28	31	17	0¾	1	arm	6	55	1	38
320	15	Sa.	6	34	4	23	9	49	5	30	31	18	1½	1¾	br.	7	42	2	26
321	16	☾	6	36	4	22	9	46	5	33	31	19	2¼	2½	br.	8	33	3	13
322	17	M.	6	37	4	21	9	44	5	35	31	20	3	3¼	h'rt	9	27	4	1
323	18	Tu.	6	38	4	21	9	43	5	36	30	21	3¾	4	h'rt	10	26	4	49
324	19	W.	6	39	4	20	9	41	5	38	30	22	4½	4¾	h'rt	11	26	5	36
325	20	Th.	6	40	4	19	9	39	5	40	30	23	5½	5¾	bel.	morn		6	22
326	21	Fr.	6	42	4	18	9	36	5	43	30	24	6¼	6¾	bel.	0	29	7	10
327	22	Sa.	6	43	4	18	9	35	5	44	30	25	7¼	7½	rei.	1	34	7	58
328	23	☾	6	44	4	17	9	33	5	46	29	26	8	8½	rei.	2	42	8	47
329	24	M.	6	45	4	17	9	32	5	47	29	27	8¾	9¼	sec.	3	52	9	40
330	25	Tu.	6	46	4	16	9	30	5	49	29	28	9¾	10¼	sec.	5	6	10	35
331	26	W.	6	48	4	15	9	27	5	52	28	●	10½	11	thi.	sets		11	34
332	27	Th.	6	49	4	15	9	26	5	53	28	1	11¼	—	thi.	5	33	0	35
333	28	Fr.	6	50	4	15	9	25	5	54	28	2	0	0¼	kn.	6	31	1	38
334	29	Sa.	6	51	4	14	9	23	5	56	27	3	0¾	1	kn.	7	36	2	40
335	30	☾	6	52	4	14	9	22	5	57	27	4	1¾	2	legs	8	44	3	40

NOVEMBER hath 30 days. [1924

Though Nature lingers in her mourning weeds,
And wails the dying year in gusty blast,
Still added beauty to the last proceeds,
And wildness triumphs when her bloom is past.

JOHN CLARE.

D. M.	D. W.	Aspects, Holidays, Heights of High Water, etc.	Farmer's Calendar.
1	Sa.	All Saints Day. ☾ runs low. Tides 10.1 11.2	Many of our large manufacturing establishments are placing on the market important and profitable by-products. For example, sulphate of ammonia from the manufacture of illuminating gas, and bran and middlings from the making of flour.
2	E	20th Sun. af. Tr. 9.8 10.7	*Signs of*
3	M.	Tides 9.4 10.2	*rain.*
4	Tu.	State Elections, N. H., Vt., Mass., R. I., Conn. Tides 9.2 9.8	
5	W.	☌ ♂ ☾. Tides 9.1 9.5	*Some*
6	Th.	☌ ♅ ☾. Tides 9.3 9.4	
7	Fr.	Tides 9.5 9.4 Harrison defeats Indians at Tippecanoe, 1811.	*still*
8	Sa.	☾ on Equator. Tides 9.7 9.4	*gray*
9	E	21st Sun. after Trin. Tides 10.0 9.4	With the farmer what we may call "side lines" are analagous to the by-products of the manufacturer. In the main, the farmer grows three classes of products. First, those which he and his family consume at home. Second, those which he feeds to animals and sells indirectly. Third, those which he sells for cash. In addition to these, the thrifty, wide-awake farmer will have a list of sidelines which of course will vary with his location and type of farming. Such a list would include maple syrup, blueberries, wild blackberries, fruit of various kinds, eggs and poultry, honey, cider (now sweet), buttermilk and cottage cheese, sweet corn and many other things. Many of these sideline products can be sold at a small, attractive roadside booth right at the farmer's door where his marketing costs are low. The advantage to the consumer is fresh goods at a moderate price, and to the farmer an income from products which might otherwise go to waste. Farming conditions are changing and the farmer must meet them.
10	M.	☿ in Aph. ♀ in Peri. Tides 10.1 9.4	*days.*
11	Tu.	St. Martin. Armistice Day. Tides 10.2 9.3	
12	W.	Tides 10.1 —	
13	Th.	Tides 9.2 10.0	
14	Fr.	☾ in Apogee. Tides 9.0 9.8	
15	Sa.	□ ♆ ☉. ☾ runs high. Tides 8.8 9.6	
16	E	22d Sun. af. Trin. Tides 8.6 9.3	*A*
17	M.	Tides 8.4 9.0	*change*
18	Tu.	Earthquake in Boston, 1755. Tides 8.2 8.8	
19	W.	☌ ♆ ☾. Lincoln's Gettysburg address, 1863. 8.2 8.7	
20	Th.	Tides 8.3 8.7	*to*
21	Fr.	Tides 8.6 8.8	*cooler.*
22	Sa.	St. Cecilia. ☾ on Equator. 9.1 9.0	
23	E	23d S. af. Tr. ☌ ♀ ☾. 9.7 9.4	*Rain*
24	M.	☌ ♄ ☾. Tides 10.3 9.8	*followed by*
25	Tu.	St. Catharine. ♆ stat. 11.0 10.1	*colder.*
26	W.	11.5 10.3 27th. Thanksgiving Day. ♅ stat.	
27	Th.	☌ ♂ ♅. ☌ ☿ ☾. ☌ ♃ ☾. ☾ in Peri. 11.8 —	
28	Fr.	☾ runs low. Tides 10.4 11.9	
29	Sa.	☌ ☿ ♃. 30th. ☿ Gr. Hel. Lat. S. Tides 10.4 11.7	
30	E	1st S. in Advent. St. Andrew. 10.2 11.3	

ASTRONOMICAL CALCULATIONS.

☉'s Declination.

Days.	d.	m.	Days.	d.	m.	Days.	d.	m.	Days.	d.	m.	Days.	d.	m.
1	21s.	51	7	22	38	13	23	10	19	23	25	25	23	24
2	22	0	8	22	45	14	23	14	20	23	26	26	23	22
3	22	8	9	22	51	15	23	17	21	23	27	27	23	19
4	22	17	10	22	56	16	23	20	22	23	27	28	23	17
5	22	24	11	23	1	17	23	22	23	23	26	29	23	13
6	22	32	12	23	6	18	23	24	24	23	25	30	23	9

☽ First Quarter, 3d day, 4h. 10m., morning, W.
○ Full Moon, 11th day, 2h. 3m., morning, W.
☾ Last Quarter, 19th day, 5h. 11m., morning, E.
● New Moon, 25th day, 10h. 46m., evening, W.

Day of Year.	Day of Month.	Day of the Week.	☉ Rises. h.	m.	☉ Sets. h.	m.	Length of Days. h.	m.	Day's Decr. h.	m.	Sun Fast. m.	Moon's Age.	Full Sea, Boston. Morn h.	Even h.	☽'s Place	☽ Sets. h.	m.	☽ Souths. h.	m.
336	1	M.	6	53	4	13	9	20	5	59	27	5	2½	3	legs	9	52	4	36
337	2	Tu.	6	54	4	13	9	19	6	0	26	6	3½	4	feet	11	0	5	28
338	3	W.	6	55	4	13	9	18	6	1	26	7	4½	5	feet	morn		6	17
339	4	Th.	6	56	4	13	9	17	6	2	25	8	5½	6	feet	0	5	7	4
340	5	Fr.	6	57	4	13	9	16	6	3	25	9	6½	7	h'd	1	9	7	49
341	6	Sa.	6	58	4	12	9	14	6	5	25	10	7½	8	h'd	2	10	8	33
342	7	S.	6	59	4	12	9	13	6	6	24	11	8½	9	n'k	3	11	9	17
343	8	M.	7	0	4	12	9	12	6	7	24	12	9¼	9¾	n'k	4	11	10	2
344	9	Tu.	7	1	4	12	9	11	6	8	23	13	10	10½	arm	5	9	10	48
345	10	W.	7	2	4	12	9	10	6	9	23	14	10¾	11	arm	6	7	11	34
346	11	Th.	7	3	4	12	9	9	6	10	22	○	11¼	11¾	arm	**rises**		morn	
347	12	Fr.	7	4	4	13	9	9	6	10	22	16	—	0	br.	5	37	0	22
348	13	Sa.	7	4	4	13	9	9	6	10	21	17	0½	0½	br.	6	27	1	10
349	14	S.	7	5	4	13	9	8	6	11	21	18	1	1¼	br.	7	21	1	58
350	15	M.	7	6	4	13	9	7	6	12	20	19	1¾	2	h'rt	8	17	2	45
351	16	Tu.	7	6	4	13	9	7	6	12	20	20	2½	2¾	h'rt	9	16	3	32
352	17	W.	7	7	4	14	9	7	6	12	19	21	3¼	3½	bel.	10	16	4	18
353	18	Th.	7	8	4	14	9	6	6	13	19	22	4	4¼	bel.	11	19	5	4
354	19	Fr.	7	9	4	15	9	6	6	13	18	23	4¾	5¼	rei.	morn		5	50
355	20	Sa.	7	9	4	15	9	6	6	13	18	24	5¾	6	rei.	0	23	6	37
356	21	S.	7	10	4	15	9	5	Inc.		17	25	6½	7	rei.	1	30	7	26
357	22	M.	7	10	4	16	9	6	0	1	17	26	7½	8	sec.	2	39	8	18
358	23	Tu.	7	11	4	17	9	6	0	1	16	27	8¼	9	sec.	3	52	9	13
359	24	W.	7	11	4	17	9	6	0	1	16	28	9¼	9¾	thi.	5	5	10	13
360	25	Th.	7	12	4	18	9	6	0	1	15	●	10¼	10¾	thi.	**sets**		11	15
361	26	Fr.	7	12	4	18	9	6	0	1	15	1	11	11½	kn.	5	13	0	19
362	27	Sa.	7	12	4	19	9	7	0	2	14	2	—	0	kn.	6	21	1	22
363	28	S.	7	12	4	20	9	8	0	3	14	3	0½	0¾	legs	7	33	2	22
364	29	M.	7	13	4	21	9	8	0	3	14	4	1½	1¾	legs	8	44	3	18
365	30	Tu.	7	13	4	21	9	8	0	3	13	5	2¼	2¾	feet	9	52	4	11
366	31	W.	7	13	4	22	9	9	0	4	13	6	3¼	3½	feet	10	58	5	0

DECEMBER hath 31 days. [1924

Heap on more wood! — the wind is chill;
But let it whistle as it will,
We'll keep our Christmas merry still.

SIR WALTER SCOTT.

D.M.	D.W.	Aspects, Holidays, Heights of High Water, etc.	Farmer's Calendar.
1	M.	Tides 9.9 / 10.8 *Cold*	The end of the year is at hand. We can now begin to survey what has been accomplished.
2	Tu.	☿ Gr. Hel. Lat. N. Tides 9.7 / 10.2	
3	W.	♂ ☊ ☾. ♂ ☌ ☾. Tides 9.4 / 9.6	
4	Th.	Tides 9.3 / 9.2 *winds.*	There are too many "No-Profit" farms everywhere. Here is a brief description of them:—They have no system of crop rotation. Fields "stay down" so long that less than a ton of poor hay is harvested per acre. The land has become acid. The manure is thrown out the barn window under the eaves, where it soon loses one half its value by leaching and fermentation. The nitrogen supply of the soil is low, as is indicated by the slow growth and pale color of the vegetation. This is because few legumes are grown and the best part of the manure is wasted. The soil is also lacking in phosphorous. The potatoes are not sprayed and the small crop is mostly scabby. The cows are of poor breeding and low production. They are poorly fed on over-ripe and weedy hay without any silage. A few nondescript hens manage to scratch a living and furnish the family egg supply with an occasional dozen to trade for groceries. The orchard has not been pruned, sprayed, cultivated or fertilized for many years and most of the apples are of the cider variety. Too much rough land is being cultivated which ought to be growing wood and timber. Is one of these farms yours?
5	Fr.	♂ ☿ ♄. ☾ on Eq. Tides 9.3 / 8.9	
6	Sa.	St. Nicholas. Tides 9.4 / 8.8	
7	E	2d S. in Advent. 9.5 / 8.8 *Variable*	
8	M.	Tides 9.7 / 8.8 *with*	
9	Tu.	☿ Gr. elong, E. ☐ ☊ ☉. 9.8 / 8.8 *snow*	
10	W.	Treaty with Spain, 1898. Tides 9.9 / 8.8 *in some*	
11	Th.	Tides 9.9 / 8.8 *parts.*	
12	Fr.	☾ in Apo. ☾ runs high. Tides —/9.9	
13	Sa.	Phillips Brooks born, 1835. Tides 8.8 / 9.8	
14	E	3d S. in Advent. 8.7 / 9.6 *Increasing*	
15	M.	Tides 8.6 / 9.4	
16	Tu.	♂ ♆ ☾. Tides 8.5 / 9.2	
17	W.	☿ stat. Tides 8.5 / 9.0	
18	Th.	Tides 8.5 / 8.8	
19	Fr.	☿ in ♌. Tides 8.6 / 8.7 *cold.*	
20	Sa.	☾ on Eq. 21st. ☉ enters ♑. WINTER BEGINS. 8.9 / 8.7	
21	E	4th S. in Adv. St. Thomas. 9.3 / 8.3	
22	M.	♂ ♄ ☾. 21st. FOREFATHERS' DAY. 9.8 / 9.0	
23	Tu.	♂ ♃ ☉. ♂ ♀ ☾. Tides 10.4 / 9.4	
24	W.	☿ in Peri. Tides 11.0 / 9.7 25th. ☐ ♂ ☉.	
25	Th.	Christmas. ♂ ♃ ☾. ☾ in Peri. 11.5 / 10.0	
26	Fr.	St. Stephen. ♂ ☿ ☾. ☾ runs low. Tides 11.8 / 10.2	
27	Sa.	St. John the Evang. ♂ ☿ ☉ inf. —/11.9	
28	E	S. af. Ch. Holy Innocents. 10.8 / 11.7 *Snow*	
29	M.	Texas admitted to the Union, 1845. Tides 10.2 / 11.3 *or*	
30	Tu.	♂ ☿ ♃. ♂ ☊ ☾. 10.1 / 10.7 *rain,*	
31	W.	♂ in ♌. Tides 9.9 / 10.1 *then colder.*	

RECENT COMETS.

Between July 1, 1922, and June 30, 1923, the following comets were discovered or were re-detected upon their return to the vicinity of the Earth's orbit:

1. Comet c 1922. Discovered by Baade at Bergedorf, Germany, 1922, October 19, this comet passed perihelion on October 26 at the unusually great distance of 2.25 astronomical units (209,000,000 miles) from the Sun. The inclination of its orbit to the plane of the Ecliptic is 51°. During more than a month after its perihelion passage, this comet showed two minute tails; one only two minutes of arc in length, pointed nearly away from the Sun as are the tails of most comets; and the other about a third of a degree in length and directed almost exactly toward the Sun. The orbit is parabolic.

2. Comet *d* 1922. Discovered by Skjellerup at the Cape of Good Hope, 1922, November 25. Orbit parabolic. Perihelion pasage, 1923, January 3; perihelion distance, 0.92 astronomical units (86,000,000 miles) from the Sun; inclination of orbit to Ecliptic, 23°. The orbit is very similar to that of Comet 1892 VI, but the comets could of course not be identical since they are not periodic.

3. Perrine's comet of 1896 and 1909, detected by Nakamura in Japan, 1922, November 29. Perihelion passage, October 17. This comet has a period of 6½ years, and can be seen only at alternate perihelion passages, as the intervening ones occur when the Earth is unfavorably situated with regard to the Sun.

These comets were all very faint, and were invisible to the unaided eye.

THE HEAT OF THE SUN.

The Sun is the origin of nearly all the energy that is available at the surface of the Earth. The heat and light that it pours upon the Earth make plants to grow and the wind to blow ; cause water to evaporate from the sea, descend as rain, and return to the sea through the rivers ; and provide warmth and comfort for man and all the other animals. The power that runs our factories, our trains and our automobiles has come from the Sun, for the energy of coal and petroleum was derived from sunlight by the vegetation of thousands of years ago, and the energy of waterfalls is the energy of water that has been lifted from the sea by the warmth of the Sun. The activities of volcanoes and hot springs, which are due to the internal heat of the Earth, are the only ones of any magnitude that cannot be traced to the Sun.

This energy comes to us in the form of waves, some of which affect the eye and are called light, but to most of which the eye is not sensitive. Passing the waves through a prism of glass, as in the spectroscope, sorts them out according to their length. In this way it is found that the color of light depends on the length of its waves, red having the longest and violet the shortest; and that there are waves shorter than the violet and others longer than the red, which do not affect the eye but are readily detected by photography and by instruments for measuring heat. Most of the energy sent out by the Sun is in the form of waves longer than those of red light, and is called radiant heat. Radiant heat, like visible light, passes through transparent bodies, and this is why it does not warm very much the upper layers of the air; but when it falls upon an opaque body like the surface of the Earth, or even upon a semi-opaque substance like the dust laden lower atmosphere, its energy is absorbed and the body is warm.

Since we are so dependent upon the sunbeams for our available power, the measurement and study of the energy contained in them is one of the most interesting and important problems of astronomy. It is in principle a comparatively easy matter to measure the rate at which energy is received at the surface of the Earth ; but to determine the amount of energy that the sunbeams contain before any of it has been absorbed or reflected by the atmosphere is much more difficult, since it is impossible to make observations above the air. The simplest procedure is, essentially, to measure the rise in temperature of a known quantity of water contained in a polished silver vessel with a blackened cover of known area, when the Sun is allowed to shine perpendicularly upon the cover

for a known time. Troublesome corrections must be made for heat lost by radiation from the vessel and by reflection at the cover, although the former is reduced to a minimum by the high polish of the body of the vessel, and the latter by the blackening of the cover. The rate at which heat is being received at the Earth's surface can then be expressed in calories per square centimeter per minute, a calory being the amount of heat necessary to raise the temperature of a gram of water one degree Centigrade. To determine and allow for the absorption and reflection of solar energy by the air, observations of this kind must be made with sunlight that has passed through different depths of air, and the change of measured radiation with change of depth noted. One way to accomplish this is to compare results obtained near noon, when the Sun is high and its rays passed through a minimum of air, with those obtained early or late in the day, when the Sun is nearer the horizon and its rays travel farther through the atmosphere. Another method is to make simultaneous observations at two stations, one on a mountain and the other near sea level. Moreover, it has been found that the air absorbs very differently the radiation of different wave lengths, the shorter waves being in general stopped by it more than the long ones, but certain of the very long infra-red waves being cut off completely; and these complicated effects must be studied and allowed for.

The measurement of the rate of the Sun's outpour of heat was attempted, and approximate results obtained, as early as 1838, but it is only within the present century that measurements have been made that have been generally accepted as reliable. The most important recent work has been done under the auspices of the Smithsonian Institution of Washington, from which observers have been sent for this purpose to stations at various altitudes in the arid regions of California, Arizona, Algeria and Chili. The net result of this work is that, outside the Earth's atmosphere and at the Earth's mean distance from the Sun, the rate of solar radiation is 1.95 calories per square centimeter per minute, with a fluctuation of about five per cent.

A clearer conception of this result may be conveyed by stating it in terms of melting ice. It means that, if a sheet of ice sixteen millimeters (about ¾ inch) thick were exposed perpendicularly to the Sun's rays at the Earth's distance, and if there were no loss of heat by reflection, absorption by the air, or other causes, it would be melted in an hour. Since the distance from the Sun to the Earth is known, it is possible to calculate the intensity of heat at the Sun's surface, and it turns out that, if the Sun were to be frozen over with ice thirty-nine feet thick over its entire surface, it would all be melted in one minute. Putting it another way, the solar energy falling upon a square yard at the Earth's distance, if conserved and used in a perfect heat engine (which we are at present far from possessing) would develop about 1½ horse power continuously.

To obtain an idea of the stupendous quantity of energy emitted by the Sun, it is necessary to remember that the emission must be taking place in all directions, and that, since the Earth is but a speck as seen from the Sun, the radiation that it receives is only a minute fraction of the whole. In fact, the sunbeams intercepted by all the planets together form only about one-billionth of the whole output, and the rest must travel on indefinitely through space, only a small part being stopped even by the stars.

An interesting and important feature of the results of the Smithsonian observations is the discovery that the Sun's rate of pouring out energy is not quite constant. They show that, in general, when sun spots are most numerous, the rate of radiation is greatest, but there are minor fluctuations of an irregular nature. Since terrestrial weather is dependent upon the heat of the Sun, there is some hope that a study of these changes may ultimately be of use in long-range forecasting. However, the fluctuations are small, amounting to only about five per cent; and the fact that animal life has existed upon the Earth for several hundred million years shows that there has been no great change in the Sun's heat in that time, since for animals to live the Earth's temperature must have remained about what it is now. How this amazing outpour of energy could have been continued at a nearly constant rate for so long a time is one of the great unsolved problems of astronomy.

THE ATMOSPHERE OF VENUS.

Each of the planets of the Solar System, except Mercury and the Asteroids, is known to be surrounded by an envelope of light gases which resembles the atmosphere of the Earth. The atmospheres of the four great planets Jupiter, Saturn, Uranus and Neptune are detected by means of the spectroscope; they absorb characteristic portions of the sunlight that passes through them, and so produce dark bands in the planets' spectra. The extensive weather effects that have been observed upon Mars with the telescope, such as clouds and the deposition and disappearance of snow, leave no doubt that that planet has an atmosphere comparable with the Earth's. Venus is the only planet whose atmosphere has been directly seen.

When Venus is near inferior conjunction—that is, near the point of her orbit nearest the Earth, and almost directly between the Earth and Sun—her illuminated side is turned almost wholly away from us and all that can be seen of her surface is a narrow crescent, the edge of the hemisphere on which the Sun is shining. The horns of this crescent, instead of ending at a diameter of the planet to form a semi-circle, extend beyond, and, when seen under the most favorable circumstances, meet and form a complete ring around the dark body of the planet. This ring has been seen at many close conjunctions and has always been noted near the beginning and the end of transits of Venus, those rare occasions when the planet passes directly between us and the face of the Sun. It can be due only to the illumination of the planet's atmosphere from behind by the Sun, the sunlight being partly refracted by that atmosphere but mainly reflected by particles of dust or perhaps by the molecules of the gas themselves.

The oxygen and water vapor in the Earth's atmosphere, by absorbing certain portions of the light that passes through it, produce characteristic dark bands in the spectra of the Sun and other heavenly bodies, and the conspicuousness of these bands increases as the body approaches the horizon, since the light then travels through a greater thickness of air. If the light of the Sun has passed through Venus' atmosphere before being reflected at her surface and again after reflection, we should expect to find in the spectrum of Venus a further intensification of these bands and perhaps other bands as well, such as those that appear in the spectra of Jupiter and other planets. This, however, is not the case; no modification of the Sun's light by reflection at Venus is perceptible, although the instruments recently used for this purpose are capable of detecting the oxygen in a layer of air only ten feet deep near the surface of the Earth. It appears, then, that either Venus' atmosphere is lacking in oxygen and moisture, or these substances lie only in the lower layers and are covered by a practically opaque portion of the atmosphere from which the Sun's light is reflected with but little penetration. The latter explanation is made plausible by the fact that the moisture in the Earth's atmosphere resides within a few miles of the surface, and oxygen, although it rises much higher, is thought not to extend to the upper limits of the air. It is supported also by the telescopic appearance of the sunlit side of Venus, which is almost as white as snow and without definite markings that could be interpreted as the outlines of continents or other physical features of the planet. The appearance is in fact just that which might be produced by the Sun shining on an opaque veil that allowed no view of the solid surface of the planet beneath.

It has been suggested that the oxygen of Venus is all combined with carbon in the form of carbon dioxide and that the planet has no life, either vegetable or animal. One action of vegetation on the Earth is the liberation of oxygen from carbon dioxide, and a conceivable cause of a lack of oxygen is the absence of vegetation. Again, if the oxygen were present only in the form of carbon dioxide, there could be no water, since water is itself a combination of oxygen and hydrogen; and without water there could be no life of any kind as we know life upon the Earth.

To sum up, the existence of a gaseous atmosphere surrounding the planet Venus is unquestionable; but that atmosphere has frustated all the attempts of astronomers to determine its constitution, and for the solution of this question we must wait for the future.

THE FEEDING OF SILAGE.

Every farmer knows that he is going to get an increased flow of milk from his cows when he turns them out to pasture in the spring. He also knows that as his pastures gradually dry up or when he puts his cows in the stable in the fall and feeds them on dry hay his milk pail is not as full as it was in the early summer. There is a reason for this, and the reason lies in the fact that green succulent feed is more palatable and will produce a greater quantity of milk than our ordinary dried forage. The green grass, as it were, is the lubricator of the milk-making machinery. It is to provide a substitute for this lubricator during the winter that the farmer stores away in the silo, which is only a big fruit jar, some of the green stuff of the farm.

Since the introduction of the silo, which is now past the experimental stage, dairymen more than any other class of farmers have been its most enthusiastic supporters. Silage has an effect on the milk secretion similar to that of green fodder or pasture, and if made from well matured corn so as not to contain too much acid, it is more like those feeds than any other which can be obtained. Other roughage in the shape of corn fodder, oat, timothy or clover hay should be fed in conjunction with the silage. The quantity of silage fed should vary with the size of the cow and only with the largest individuals and heaviest milkers should it exceed forty pounds per day. It may be given in one or two feeds daily; and when to cows in milk, always after and not before or during milking. Toward spring, if the cows are fed on dry feed alone, there is usually a reduction in the flow of milk which is likely to continue through the remaining period of lactation. If silage is fed there will be no such marked decrease before turning out to pasture and the cows will be able to keep up in their yield of milk until late in the summer.

The feeding value of any food does not depend upon the amount of nutriments it contains, but upon the percentage of these nutriments which is digestible. The following table shows the digestive co-efficients for silage, green corn and dry fodder:

	Dry Matter	*Protein*	*Crude Fiber*	*Nitrogen Free extract*	*Fat*
Silage	64	52	62	69	85
Green Corn.....	67	54	51	75	78
Dry Fodder.....	66	48	57	76	76

Both the figures in the table and the results of actual feeding trials show that there are no great differences in the digestibility of these three forms of corn, although the silage usually comes out a little ahead. For instance, in feeding experiments with milch cows at the New Hampshire Station, the silage produced 17 per cent. better results than hay, with equal amounts of dry matter considered in both cases. At the Wisconsin Station a gain of 13 per cent. was found in favor of silage. This shows that with the most careful handling the field cured fodder can get, it will not produce as good results as silage made from the same corn. Not only for dairy cows, but for young cattle and sheep has silage been found not only equal, but in many cases superior, to corresponding dry fodder. This is a conclusion which has been reached over and over again, and does not, therefore, admit of doubt.

The argument is occasionally made that the continued use of silage has a deleterious effect upon the constitution of the animal. The ground taken is that the acids affect the digestive functions and in time impair the bodily vigor and productive capacity. No such claims, however, have ever been substantiated, and the average feeder need have no fears in this regard.

According to the testimony of hundreds of intelligent observing dairymen, silage is almost a necessity in the ration of a milk producing cow. The number of silos in this country has increased from 91 in 1882 to more than 100,000 at the present time. The silo has surely come to stay, and when its true value is fully known and appreciated by all our farmers and feeders, there will be a reduction in the cost of the milk and butter produced and the incomes from the farm will be increased.

WHAT DO YOU KNOW ABOUT MILK?

The per capita consumption of milk and its products in the United States, during the year 1922, has been estimated as fifty gallons. Twenty per cent of the total food supply of the average family is furnished by milk. It was suggested not long ago in one of our large cities that a cow be placed in the zoo so that the children might see the source of the milk supply. Every now and then we read about a certain automobile manufacturer who thinks that some day we can do without the services of the cow. State and city law-making bodies are frequently considering milk legislation. Therefore the subject of milk, while quite ancient, still has possibilities of information for many of us.

The milk from the goat, mare, buffalo, camel, reindeer, sheep and cow is used for human consumption in different parts of the world. Man has taken advantage of this milk-producing function, and by particular methods has increased the amount of fluid secreted by an animal, and has prolonged the period of secretion.

Have you ever considered the task involved in the making of milk? Grasses, grains and water, unsuitable for the newly born, unpalatable for man, are transformed into a concentrated, body-building fluid by the animal machine. In our part of the world the cow has responded to this task of economically converting these raw materials into palatable food more readily thau the other animals. Therefore to us the word "milk" ordinarily implies milk from the cow.

The opaque, whitish fluid which appears on your table as milk contains a surprising number of ingredients. It has disappointed some people to learn that approximately eighty-seven per cent. of milk is water. Through no fault of the cow, the percentage of water sometimes exceeds even ninety per cent. The total solids or total nutrients are divided into about one fourth protein for muscle building, four tenths fat and three tenths carbohydrates for energy production, and one twentieth minerals for tooth and bone formation. It has recently been discovered that the die for the teeth of a child is cast seven months before birth. The importance of milk early in the mother's diet is apparent. Milk also contains those substances of unknown composition which are called vitamines, when these substances are present in the feed of the cow. As far as we know at present, cows cannot make vitamines. In addition, bacteria and dirt are likely to be present in milk.

There are many factors, some natural, others unnatural, which bring about variations in the composition of milk. The natural variations in total nutrients may be due to the influence of the breed of the cow, the age, the period of lactation, and the feed to a limited extent. The percentage of fat in any given cow may vary from day to day, or even from milking to milking. This explains why the dairyman mixes the milk from all the cows and in some instances has a herd of mixed breeds. Most states have a legal fat standard of about three per cent.

The unnatural variations are to a very large extent associated with the human factor—involving either producer or consumer—and sometimes both. We have just cause to find fault with the producer when milk is too high in water or too low in fat. Dirt in milk indicates uncleanliness in producing or in dispensing the milk. The visible dirt suggests that the dirt may also be dissolved in milk. Examinatiou of the bottom of the bottle for dirt is just as important as looking for the heavy cream line at the top. Also, dirt is almost an absolute sign of high bacterial content.

Healthy cows have few bacteria in the udder, but bacteria are found everywhere among the surroundings of the cow, on the cow, and on the milker. Warm milk is an ideal food for many kinds of bacteria, and they multiply rapidly after getting into the milk. The milk from clean cows, with clean udders, milked by persons with clean hands and clean clothes, into clean pails, quickly cooled and carefully handled, contains relatively few bacteria as compared with milk produced under opposite conditions. Bacteria are responsible for changes in milk. Some of them convert the milk sugar into lactic acid, and the lactic acid acts upon casein, producing the flakes in sour milk.

Another group of bacteria sometimes found in milk are the disease-producing bacteria. These may get into the milk from diseased cows, from diseased persons, or from polluted water used for washing utensils.

Tuberculosis and streptococcic sore throat of people are frequently traceable to diseased cows. Many epidemics of typhoid fever, diphtheria and scarlet fever are due to milk. Cows do not contract the latter diseases, but the milk becomes contaminated by persons who have had the disease or have been in contact with sick persons.

Very often fault is found with the milk producer when the consumer has been guilty of the neglect. No one can expect milk to keep well if it remains on the doorstep for hours exposed to the warm sun, collecting dust and subject to investigation by dogs and cats. Cold retards bacterial growth, and for this reason milk is cooled promptly after milking and ought to be kept cool until used. Washing the milk bottle before opening and lifting the cap with care assist in keeping milk clean. Milk kept in open pitchers and bowls will be certain to become contaminated by dust and flies. Milk left over at the table must not be returned to the cold milk in the bottle. Mixing the milk procured on successive days is not a good practice. Many persons pour excellent milk into containers, the cleanliness of which may be in doubt, or which previously may have contained substances with a marked flavor or odor.

In many homes milk bottles are used for various other purposes before they are returned to the producer. If people were absolutely certain that they were to receive the same milk bottle tomorrow or next day, they would take better care of the bottles in their homes. The results of such improper practices, after milk has left the hands of the producer, may not be attributed to any neglect on his part. When milk is unsatisfactory, it is always the part of wisdom to investigate thoroughly your handling of the milk before placing the blame.

The number and the names of the milks found on the market, and in more or less common usage, are both surprising and confusing. In order to understand some of these terms more readily, let us define *whole milk* as the milk of cows, without the addition of any foreign substances or the subtraction of any of the usual ingredients.

Raw milk refers to whole milk, which after it has been milked, has not been subjected to any processes except straining and cooling.

Skim milk is whole milk from which some or all of the fat (cream) has been removed. It usually costs a third to a half less than whole milk, but still furnishes protein about four times as cheaply as beef. Generally, its value is not appreciated, and a wider use for cooking purposes, instead of water, is recommended.

Butter milk is the liquid remaining after the butter has been churned. The cream is usually permitted to sour before churning, and the lactic acid brings about a slightly sour taste. The composition and the food value of butter milk are similar to those of skim milk. The use of butter milk as a beverage is markedly increasing.

Condensed milk is whole milk from which considerable water has been removed by evaporation. It is sometimes called *evaporated milk*. There are sweetened and unsweetened varieties. To the former sugar is added during evaporation. Condensed milk represents a smaller package, keeps longer than raw milk after the can has been opened, and is particularly desirable in places where raw milk is not available. The containers carry the instructions for dilution.

Milk powder is manufactured by completely evaporating the milk. In appearance it resembles flour, and when mixed with water appears like ordinary milk.

Modified milk represents whole milk to which has been added milk sugar, rice flour, lime water or some other substance. This is a substitute for human milk, and modification for this purpose should not be attempted except under the direction of a physician.

Homogenized milk is whole milk in which the fat globules have been broken down by mechanical means. This is a milk for infants. The smaller fat globules in human milk and in homogenized milk are digested more readily than the large globules of cows' milk.

Clarified milk represents whole milk which has been skimmed with a separator, and then the cream and the skimmed milk are mixed again. It really is mechanically cleaned milk because the majority of the solid impurities are retained with the separator slime.

Standardized or blended milk represents milk which has been changed so as to contain a definite amount of one or more of the ingredi-

ents, or to conform to the legal standard for fat and solids not fat. This is usually done by adding or removing fat or skim milk, depending upon whether the milk is above or below the legal requirements. Many creameries purchase milk based upon the amount of fat, and cream is frequently sold according to fat content. Milk carrying a definite amount of fat above the legal standard, and priced upon the fat content is not retailed to any extent.

Pasteurized milk is whole milk, which has been heated to a temperature of 145 degrees F. and held at that temperature for 30 minutes. It is claimed that pasteurization, if properly done, kills most of the bacteria in milk. Opponents contend that pasteurization invites the production of dirty milk, because the producer, knowing the milk will be pasteurized, will pay little attention to the cleanliness of cows, utensils and milkers. It is also contended that after the containers are opened the milk will deteriorate rapidly. Pasteurization cannot be regarded as a substitute for tuberculin testing in the eradication of tuberculosis, because the heating of the milk does not detect the diseased cows. Pasteurization plays an important part in protecting the health of animals when skim milk of dubious origin is fed, and in making butter and cheese safe for human consumption. Many epidemics of septic sore throats and typhoid fever have been checked and controlled by pasteurizing the milk from infected herds and from farms harboring diseased persons.

Sterilized milk should not be confused with pasteurized milk. To sterilize milk—that is, to kill all the bacteria in it—the temperature must be raised to the boiling point on several successive days, or it must be heated above the boiling point for about fifteen minutes. It is claimed that most of the sterilized milk on the market has simply been raised to the boiling point and that it contains living bacteria. It will remain sweet longer than pasteurized milk, but more chemical changes are produced because of the greater heat. Heated milk must be well protected against contamination, otherwise bacteria will quickly produce undesirable changes.

Certified milk is a term which is very frequently misunderstood. It refers to milk which is produced and marketed in strict compliance with the regulations of a medical milk commission, and the commission certifies that the milk meets with its requirements. Most well organized communities have such commissions and their regulations do not differ to any extent. In general, the following are demanded: Healthy animals, healthy attendants, sanitary stables, proper feeding, scrupulous cleanliness, tuberculin testing of all animals at stated periods and removal of the reacting animals, periodic examination of animals and stables by approved veterinarians, and of attendants by approved physicians. In addition, the milk may not contain more than ten thousand bacteria per cubic centimeter (about fifteen drops), may not contain pus or disease-producing bacteria. The milk must be cooled to 45 degrees F. and kept at that temperature until delivered, within twenty-four or forty-eight hours as may be directed. The container must be stamped, showing the date of milking, the name of the certifying commission, and the name of the producer. In exceptional instances certified milk may be pasteurized, but it must be done in the original container, the certifying stamp must not be disturbed, and it must carry a pasteurization stamp.

The terms *sanitary milk* and *hygienic milk* do not have a definite interpretation. When these terms are used, it is implied that the milk is produced and handled under conditions which are considered adequate to insure a pure, wholesome milk. That these terms in advertisements may be abused, or have no meaning whatever, is not overstating possibilities.

The selection of a milk depends upon the particular purpose for which the milk is to be used (e.g. infant, invalid, children or adult), and of course, upon the cost. The different kinds of milk cannot be produced at equal expense. To assist one in selecting the kind of milk to use, and to learn where to procure it, one may consult the milk inspector, the physician, or the veterinarian in the particular locality. A visit to the dairy to see the cows and the prevailing methods is not out of place. And last, but not least, remember that milk of questionable character can be made safe by boiling on your own stove, then placing the milk into a previously scalded vessel, and keeping it cool and protected against contamination.

THE NEW ENGLAND "STANDARD NINE" FERTILIZERS.

Nine different grades of fertilizer have recently been agreed upon by the New England college and experiment station men and the New England fertilizer manufacturers as meeting all the agronomic and economic needs of this section of the country.

These grades are all "high analysis"; that is, containing fourteen or more units of plant food per ton. They are to be known as the "New England Standard Nine," and it is hoped that ultimately they will comprise all the grades manufactured and used in New England. The adoption of this limited number of grades, together with some approach to a standardization of their adaptation to certain crops and soils, will mean a decrease in the cost of manufacture as well as a lessening in the amount of confusion among farmers as to what grades of fertilizer to buy.

The New England Standard Nine grades are as follows:

(1) "0–12–6" This grade is recommended for late fall seeding of grass or grain; also for top dressing clover and alfalfa.

(2) "2–12–4" Recommended for late summer or early fall seeding of grass or grain; also for corn in connection with stable manure.

(3) "3–10–4" Recommended for corn, small grains, millets, tomatoes and cabbage on the heavier types of soil.

(4) "3–10–6" Recommended for corn, beans and peas on the lighter types of soil.

(5) "4–8–4" Recommended for potatoes, beets, carrots, onions and other root crops on the heavier types of soil.

(6) "4–8–6" Recommended for potatoes and other root crops on the loamy types of soil.

(7) "5–4–5" Recommended for tobacco.

(8) "5–8–7" Recommended for potatoes, celery and other truck crops on the lighter types of soil.

(9) "8–6–6" Recommended for top dressing hay and pasture land.

For those who desire to follow the practice of home-mixing, the following formulas for each of the nine grades are suggested. In these formulas the generally accepted practice of furnishing about one third of the ammonia from nitrate, one third from sulphate and one third from organic materials has been followed. An attempt has been made to suggest only those materials which are easily procurable; to use as few different materials as possible; to select a combination of materials which will make a good mechanical mixture and to use even weights as far as practicable.

	"0-12-6"	"2-12-4"	"3-10-4"
Nitrate of Soda	.....	80 lbs.	100 lbs.
Sulphate of Ammonia	.....	50 "	100 "
"7–15" Tankage	.....	200 "	250 "
Acid Phosphate	1500 lbs.	1460 "	1200 "
Muriate or Sulphate of Potash	240 "	160 "	160 "
Total	1740 lbs.	1950 lbs.	1810 lbs.

	"3-10-6"	"4-8-4"	"4-8-6"
Nitrate of Soda	100 lbs.	150 lbs.	150 lbs.
Sulphate of Ammonia	100 "	150 "	150 "
"7-15" Tankage	250 "	300 "	300 "
Acid Phosphate	1200 "	940 "	940 "
Muriate or Sulphate of Potash	240 "	160 "	240 "
Total	1890 lbs.	1700 lbs.	1780 lbs.

	"5-4-5"	"5-8-7"	"8-6-6"
Nitrate of Soda	.....	200 lbs.	400 lbs.
Sulphate of Ammonia	50 lbs.	150 "	300 "
Cottonseed Meal	1000 "	.....	.....
Dried Fish	200 "	.....	.....
"7-15" Tankage	.....	400 "	300 "
Acid Phosphate	350 "	900 "	700 "
Sulphate of Potash	200 "	280 "	240 "
Total	1800 lbs.	1930 lbs.	1940 lbs.

Persons desiring to mix their own fertilizers should secure prices on the unmixed materials and then figure the comparative costs of the amounts suggested in the formulas given. Making a reasonable allowance of one dollar per ton for mixing, the net saving which the farmer may effect can be determined by finding the difference between the cost of materials and the selling price of a similar ready-mixed grade.

The practice of home-mixing is a simple one. The only tools necessary are a square-point shovel, a broom, an ordinary quarter-inch mesh sand screen, platform scales and a smooth, hard floor. The materials are simply piled in layers on the floor with the bulkiest ones on the bottom; they are then shoveled over three or four times and thrown through the sand screen. The fertilizer is then ready for bagging. In order to have the best mechanical condition of the fertilizer and to avoid caking, it is usually advisable to mix the materials only a few days before one is ready to use them.

It should be remembered that the total amounts of the materials making up the various formulas are equivalent to one ton of a ready-mixed brand of the given grade. The difference between these amounts and 2000 pounds represents the amount of "filler" or "make-weight" which the manufacturers have to add to make up a ton. If one is in the habit, therefore, of using a ton of a "4-8-4" fertilizer on his potatoes, he should remember that he is getting an equivalent amount of plant food in the 1700 pounds of home-mixed materials indicated above and should use no more.

HOW TO GET THE LARGEST RETURNS FROM ANIMAL MANURES.

The writer was taught when a boy by his father, who was born more than a hundred years ago, that any and all waste was not simply unwise but *wicked* as well. This is a lesson which the generation at present constituting our most active and influential citizenry very especially needs to learn—a lesson, too, which as a result of the enormous destruction due to the world war receives a somewhat more willing attention than in the years of plenty and ease with which we were blessed for so long a period previous to the war. In no direction, perhaps, is the lesson more needed than in connection with the attitude of the farmer towards the saving and application, in such a manner as to avoid so far as possible all waste of the manures from our domestic animals. Space will not permit exhaustive treatment of this really important subject. We must dismiss with passing mention the supreme folly even yet sometimes displayed by land owners in sections of our country where soils are naturally richly stocked with the elements of fertility, and the equally great folly of not a few in the less fertile regions, who suffer waste of plant-food elements of value by escape of the fluid excreta, the leaching, through exposure, of soluble and for that reason particularly valuable compounds, or the escape into the air of the volatile constituents such as ammonia.

We will suppose manure has been made under good conditions. There remain the important questions—where it shall be used and when and how applied. Practically all farmers and gardeners are agreed that in numerous important respects which cannot here be discussed, barnyard or stable manures are superior in their effects upon soil texture and productivity for most crops. No substitute in all respects entirely adequate has been found. The writer believes this will always be true, although necessity to produce food for the multiplying population of the world will without doubt in increasing measure stimulate to efforts to discover new methods. The tremendous importance of our subject becomes increasingly evident in view of the decline in numbers of domestic meat animals on farms, in proportion to population, and the supersedure of the horse by the automobile and gasoline tractor upon our roads, and, in lesser degree, even upon the farm.

To what crops, then, to apply manures—no longer sufficiently abundant on most farms to meet all requirements for soil enrichment—will be first considered. It has long been recognized that practically all kinds of manures suffer loss during any weather not cold enough to check changes due to decomposition through the escape of the volatile ammonia formed during its progress. From this it follows that manure should be used upon crops allowing their incorporation with the soil—in other words, upon tilled crops rather than as top dressing, as for example upon grassland. Among tilled crops, those whose most active growth occurs in the warmer part of our growing season will most surely absorb and assimilate their valuable coustituents. Indian corn is one of the best.

At a period quite within the memory of men still in active life, it was regarded as good practice among the best farmers of the Northeastern United States to drop the manures made in barn and stable into cellar or basements beneath or to remove them to sheds in immediate proximity to the stables, and, in order to prevent excessive fermentation and as a method in some other respects convenient, to keep swine upon them. Neither of these methods meets the standards now urged upon farmers, even in some sections required by legislation or municipal ordinance. The public insists, and rightly, that the milk now so largely used in families, and even that used in making butter and cheese, shall be the product of cows kept under conditions as sanitary as possible and which at the same time insure the utmost possible freedom from contamination.

Under the influence of this insistence, farmers in many localities have adopted the practice of taking manures from the stables directly to fields

or gardens and spreading them at once, regardless of the season or existing conditions. The perfection of the manure spreader favored this practice. It was generally held that the saving in labor thus realized would more than offset any probable loss in manurial effectiveness. Indeed, it has been very generally taught that such loss was in any case so small as to be quite unimportant.

The results of a most careful series of experiments, five in number, each extending over twenty years (1900-1919) by one of the agricultural experiment stations must apparently force a reconsideration of this important subject, and would appear to force the conclusion that the practice of winter spreading (where climatic conditions preclude prompt incorporation with the soil) should be discontinued. These long-time experiments were planned to test: first, results from year to year during a period of annual application which lasted twelve years; and second, the comparative fertility of plots under comparison, as shown by relative product, for a second period of eight years during which neither manure nor fertilizer was applied. These experiments appear to have been tried with every precaution to insure reliable conclusions. The rate of application of manure was ten tons per acre. So long as manure was applied annually by the two methods:—in the one case spread at the time it was taken out, and in the other kept in a large heap until spring when it was spread and usually directly incorporated with the soil—the results were not widely different under the two systems; although in 41 cases out of 60 in all, keeping the manure in a single large heap in the field until spring gave the larger crops. The differences in yield, however, were small and not sufficient in value to cover the extra cost of putting first into the heap from which it was drawn and spread in the spring. This fact, however, does not prove that there was not considerable wastage from the manure spread and left on the surface in winter weather, because in the light of later results it is apparent that the quantity of manure used was sufficiently large so that, even after some wastage from manure spread in the winter, there was in many cases sufficient plant-food value left to insure as large crops as the soil and seasonal conditions made possible.

The greatest difference in the amount of wastage under the two plans first became apparent in the very first year subsequent to the period of annual application (the first twelve years). During this second period when the lasting effects of the manure used in the two methods was under comparison, the differences in yield were far larger than during the first period. The average percentage yields for the eight years (yields where the manure was applied in the winter being regarded as 100 per cent.) amounted to no less than 123.6 per cent. where the manure was kept in a heap and spread in the spring. This difference was much more than sufficient to cover the extra cost of the double handling where the manure was first made into a heap and then spread in the spring. The superiority of results on the plots to which manure was applied in the spring shows no signs of diminishing at the expiration of the eight-year period. Not only are the crops larger, they are also of better quality and mature earlier. The difference last referred to in cases where the crop is sometimes injured by fall frosts (such for example as corn or soy beans) is a point of great importance.

During a portion of the eight-year period, the land has been in mixed grass and clover, and the proportion of clover in the plots to which the manure was applied in the spring is far greater than in the plots to which it was applied in the winter. This fact indicates clearly that the element of plant-food most largely lost while the manure remained spread upon the surface during the winter was potash, which has a more important relation to the proportion of clover in a field in almost all cases than any other plant-food element. Finally, it is important to call attention to the fact that if land is kept by the system employed in condition to produce clover, a great increase in the proportion of nitrogen taken from the air and left behind in the roots and stubble must follow, which in later years must greatly reduce the necessity for the purchase of fertilizers supplying this element, which is practically always more costly than any other element of plant food.

POETRY, ANECDOTES, HUMOR, Etc.

LYRIC OF ACTION.

'Tis the part of a coward to brood
O'er the past that is withered and dead;
What though the heart's roses are ashes and dust?
What though the heart's music be fled?
Still shine the grand heavens o'erhead,
Whence the voice of an angel thrills clear on the soul,
"Gird about thee thine armor, press on to the goal!"

If the faults or the crimes of thy youth
Are a burden too heavy to bear,
What hope can rebloom on the desolate waste
Of a jealous and craven despair?
Down, down with the fetters of fear!
In the strength of thy valor and manhood arise,
With the faith that illumes and the will that defies.

"Too late!" through God's infinite world,
From his throne to life's nethermost fires,
"Too late!" is a phantom that flies at the dawn
Of the soul that repents and aspires.
If pure thou hast made thy desires.
There's no height the strong wings of immortals may gain
Which in striving to reach thou shalt strive for in vain.

Then, up to the contest with fate,
Unbound by the past, which is dead!
What though the heart's roses are ashes and dust?
What though the heart's music be fled?
Still shine the fair heavens o'erhead;
And sublime as the seraph who rules in the sun
Beams the promise of joy when the conflict is won!

Paul Hamilton Hayne.

More business in government and less government in business.

Warren G. Harding.

Liberty is not bestowed; it is an achievement.

Calvin Coolidge.

THE GIFT OF APPRECIATION

"It is certain that, where there are a hundred poor bodies who suffer from physical privation, there are a thousand poor souls who suffer from spiritual poverty. To relieve this greater suffering there needs no change of laws, only a change of heart.

What does it profit a man to be landed proprietor of countless acres unless he can reap the harvest of delight that blooms from every rood of God's earth for the seeing eye and the loving spirit? And who can reap that harvest so closely that there shall not be abundant gleaning left for all mankind? The most that a wide estate can yield to its legal owner is a living. But the real owner can gather from a field of goldenrod, shining in the August sunlight, an unearned increment of delight.

We measure success by accumulation. The measure is false. The true measure is appreciation. He who loves most has most.

How foolishly we train ourselves for the work of life! We give our most arduous and eager efforts to the cultivation of those faculties which will serve us in the competitions of the forum and the marketplace. But if we were wise, we should care infinitely more for the unfolding of those inward, secret, spiritual powers by which alone we can become the owners of anything that is worth having. Surely God is the great proprietor. Yet all His works He has given away. He holds no title-deeds. The one thing that is His, is the perfect understanding, the perfect joy, the perfect love, of all things that He has made. To a share in this high ownership He welcomes all who are poor in spirit. This is the earth which the meek inherit. This is the patrimony of the saints in light."

From Fisherman's Luck, by Henry Van Dyke.

When tillage begins, other arts follow. The farmers, therefore, are the founders of human civilization.

Daniel Webster.

The first farmer was the first man, and all historic nobility rests on possession and use of land.

Emerson.

THE BORROWED DAYS.

There is a singular old proverb which says that "April borrows three days of March, and they are ill;" April being pronounced with an emphasis on the last syllable, so as to make a kind of jingling rhyme with "ill," the last word in the line.

The Borrowing Days, as they are called, occur in The Complaynt of Scotland (1801): "There eftir i entrit in ane grene forest, to contempil the tendir zong frutes of grene treis, because the borial blastis of the *thre borouing dais of Marche* hed chaissit the fragrant flureise of evyrie frut-tree far athourt the feildis." The Glossary (*in verbo*) explains "Borrouing days, the three last days of March;" and adds: "Concerning the origin of the term, the following popular rhyme is often repeated —

"March borrowit fra Averill
Three days, and they were ill."

In The Country Almanack for 1676, among the remarks upon April occur—

"No blust'ring blasts from March needs April borrow:
His own oft proves enow to breed us sorrow.
Yet if he weep (with us to sympathize)
His tricking tears will make us wipe our eyes."

In the British Apollo, to the inquiry as to the meaning of the old poetical saying—

"March borrows of April
Three days, and they are ill;
April returns them back again,
Three days, and they are rain;"

the answer is, that it is more seasonable for the end of March and the beginning of April to be fair, but often—

"March does from April gain
Three days, and they're in rain;
Return'd by April in's bad kind,
Three days, and they're in wind."

A clergyman in Devonshire informed the author that the old farmers in his parish called the three *first* days of March "Blind Days," which were anciently considered as unlucky ones, and upon which no farmer would sow any seed. This superstition, however, is now wearing out apace.

Jamieson, in his Etymological Dictionary of the Scottish Language, says: "These days being generally stormy, our forefathers have endeavoured to account for this circumstance by pretending that March *borrowed* them from April, that he might extend his power so much longer." "Those," he adds, "who are much addicted to superstition, will neither borrow nor lend on any of these days. If any one should propose to borrow of them, they would consider it as an evidence that the person wished to employ the article borrowed for the purposes of witchcraft against the lenders."

Brand's Observations on Popular Antiquities.

PATHS.

The path that leads to a Loaf of Bread
Winds through the Swamps of Toil,
And the path that leads to a Suit of Clothes
Goes through a flowerless soil,
And the paths that lead to a Loaf of Bread,
And the Suit of Clothes are hard to tread.

And the path that leads to a House of Your Own
Climbs over the bouldered hills,
And the path that leads to a Bank Account
Is swept by the blast that kills:
But the men who start in the paths today
In the Lazy Hills may go astray.

In the Lazy Hills are trees of shade,
By the dreamy Brooks of Sleep,
And the rollicking River of Pleasure laughs,
And gambols down the steep;
But when the blasts of Winter come,
The brooks and the river are frozen dumb.

Then woe to those in the Lazy Hills
When the blasts of Winter moan,
Who strayed from the path to a Bank Account
And the path to a House of Their Own;
These paths are hard in the summer heat,
But in Winter they lead to a snug retreat.

Sam Walter Foss.

WHOSE OX IS GORED?

We hear much of leagues, covenants, treaties, etc., from those who hope by such means to forestall the horrors of war, but some there are who believe that these things are ineffective whenever a new cause for conflict arises. In one of the debates in the House of Lords in the war with France in 1794, a speaker quoted the following lines from Bishop Porteus' poem on War:

"One murder made a villain,
Millions a hero. Princes were privileged
To kill, and numbers sanctified the crime.
Ah, why will kings forget that they are men
And men that they are brethren? Why delight
In human sacrifice? Why burst the ties
Of nature, that should knit their souls together
In one soft bond of amity and love?
They yet still breathe destruction, still go on
Inhumanly ingenious to find out
New pains for life; new terrors for the grave
Artifices of death! Still monarchs dream
Of universal empire growing up
From universal ruin. Blast the design,
Great God of Hosts! Nor let thy creatures fall
Unpitied victims at Ambition's shrine."

The Bishop who was present and who had voted for the party in power, was asked by a nobleman of the opposition if he were really the author of the lines that had been quoted. The Bishop replied, "Yes, my Lord, but they were not composed on the present war."

SHIPS AND SHIPMENTS.

"Father," said little Bobbie, "freight is goods that is sent by water or land, isn't it?"

"That's right, my son."

"Well, then, why is it that the freight that goes by ship is called a cargo, and when it goes by car it is called a shipment?"

THIS AGE OF UNREST.

Why cow how canst thou be so satisfied?
So well content with all things here below,
So unobtrusive and so sleepy eyed,
So meek, so lazy, and so awful slow?
Dost thou not know that everything is mixed,
That naught is as it should be on this earth,
That grievously the world needs to be fixed,
That nothing we can give has any worth,
That times are hard, that life is full of care,
Of sin and trouble and untowardness,
That love is folly, friendship but a snare?
Come cow! This is no time for laziness!
The cud thou chewest is not what it seems.
Get up and moo! Tear 'round and quit thy dreams!

Bombaugh.

VISITOR: "So you and your brother fight sometimes, do you?"

JOHNNIE: "Yes, sir."

VISITOR: "Who licks?"

JOHNNIE: "Pa."

A farmer in Aroostook County, Maine, went into a hardware store not long ago and while purchasing some tools was asked by the proprietor if he did not want to buy a bicycle.

"A bicycle won't eat its head off," said the man, "and you can ride around your farm on it. They're getting cheaper now and I can let you have one for thirty-five dollars."

"I'd ruther put the thirty-five dollars in a cow," replied the farmer.

"Well," said the hardware man sarcastically, "but you'd look almighty foolish riding round your farm on a cow, now wouldn't you?"

"No more foolish, I guess," said the farmer, "than I would milking a bicycle."

ANSWERS TO CHARADES AND RIDDLES IN LAST YEAR'S ALMANACK

1. Bobolink.
2. Humdrum.
3. Frontispiece.
4. Grasshopper.
5. River.
6. Leaves.

CHARADES AND RIDDLES.

1.

In a little old schoolhouse that stood on a hill
A little old schoolmaster taught with a will.
But over his pupils he had no control,
They said he was crusty, and cross, and my *whole;*
And the rascals declared it would serve him just right
To play him a practical joke some fine night.
So down to the river they went and they took
My *first* from my *last* of the dark, muddy brook.
Then they eagerly hurried, yet still as a mouse,
Till they came to the little old schoolmaster's house.
They smuggled my *first* in my *last* with great glee,
And chuckled to think how irate he would be.

Carolyn Wells.

2.

My first

On me the merry little fays
Dance and sing their roundelays
When the moon is shining.

My second

In me the thrifty farmers hoard—
Store of golden grain—is poured
Free for my refining.

My whole

Where the robins build their nest,
Where the cricket chirrups,
Where the horseman idly rests
Turning in the stirrups,
Where the milkmaid swings her pail,
Where the cheery little quail
All the season whistles,
Where the white and golden daisies
Share the best of all our praises
With the purple thistles,
There the jolly lads and lasses
Chase me through the waving grasses.
In their headlong haste to catch me,
Down they thrust their hands to snatch me
Through their fingers slipping.
While they grope about to find me,
I have left them far behind me—
Flying, leaping, skipping.

Briggs.

3.

I'm always alone, though in all sorts of weather
My brother and I go walking together,
Shod or unshod by fortune or whim,
And roam o'er the land, yet in water I swim.
Without me some men's understanding were naught,
Yet I cannot be said to assist them in thought.
I'm at home with all classes of people, I ween,
Supporting the beggar, upholding the queen.
In some foreign countries men cruelly beat me
To punish my owner. In some lands they eat me.
I'm trodden on daily, in markets I'm sold
Though none would exchange me for silver or gold.

4.

My *whole* sits in the kitchen
With a pan upon my *first.*
Oh, her hoe cakes are bewitching,
You must taste them, yes, you must.
While you eat these tempting pancakes
Hours as minutes will be reckoned,
You can quench your hunger never,
For with eating, 'twill my *second.*

Katherine I. Sandford.

5.

Many a time when swimming I am cast upon the ground.
Alas, I can not get away when to a hook I'm bound.
I speak a various language, unheard by mortal ear;
And whenever danger threatens, in a trice I disappear;
Don't irritate me, gentle friends, for you'll find beyond a doubt,
My beauty and my usefulness are gone when I'm put out.

6.

My *whole* is short and quickly done,
It costs and should be pondered on.
One syllable and yet 'tis fair.
To find a *first* and *second* there.
My *first* to short attention calls
When on the ear a light sound falls,
The *last* is long, deceptive, too,
Attained by but a favored few.

Susan C. Hosmer.

COURTS IN NEW ENGLAND

Below are given the names of the places where the different Court Records are kept in the custody of the Clerks of Court, Registers of Probate or other such officers.

United States—First and Second Circuits.

FIRST CIRCUIT. Circuit Court of Appeals at Boston;—District Court of Maine at Portland;—of Massachusetts at Boston;—of New Hampshire at Concord;—of Rhode Island at Providence.

SECOND CIRCUIT. Circuit of Appeals at New York City;—District Court of Vermont at Burliugton;—of Connecticut at New Haven;—Northern District of New York at Utica;—Eastern District of New York at Brooklyn;—Southern District of New York at New York City;—Western District of New York at Buffalo.

Maine.

Supreme Judicial Court and the Probate Courts:—Androscoggin Co. at Auburn;—Aroostook Co. at Houlton;—Cumberland Co. at Portland;—Frauklin Co. at Farmington;—Hancock Co. at Ellsworth;—Kennebec Co. at Augusta;—Knox Co. at Rockland;—Lincoln Co. at Wiscasset;—Oxford Co. at Paris;—Penobscot Co. at Bangor;—Piscataquis Co. at Dover;—Sagadahoc Co. at Bath;—Somerset Co. at Skowhegan;—Waldo Co. at Belfast;—Washington Co. at Machias;—York Co. at Alfred. Superior Courts:—Androscoggin, Cumberland, Kennebec and Penobscot Counties with one judge for each. Clerks of the supreme judicial courts in those counties are clerks also of the superior courts.

New Hampshire.

Supreme Court at Concord;—Superior Court and Probate Courts:—Rockiugham Co. at Exeter;—Strafford Co. at Dover;—Belknap Co. at Laconia;—Carroll Co. at Ossipee;—Merrimack Co. at Concord;—Hillsborough Co. at Nashua;—Cheshire Co. at Keene;—Sullivan Co. at Newport;—Grafton Co. at Haverhill;—Coos Co. at Lancaster.

Vermont.

Supreme Court, County Court and Court of Chancery:—Addison Co. at Middlebury;—Bennington Co. at Beuniugton;—Caledonia Co. at St. Johusbury;—Chittenden Co. at Burlington;—Essex Co. at Guildhall;—Franklin Co. at St. Albans;—Grand Isle Co. at North Hero;—Lamoille Co. at Hyde Park;—Orange Co. at Chelsea;—Orleans Co. at Newport;—Rutland Co. at Rutlaud;—Washington Co. at Montpelier;—Windham Co. at Brattleboro;—Windsor Co. at Woodstock. Probate Courts:—Where the Probate District consists of an entire County its records are in the same places above. Other Probate records as follows:—Addison Dist. at Middlebury;—New Haven Dist. at Vergennes;—Bennington Dist. at Bennington;—Manchester Dist. at Manchester;—Bradford Dist. at Wells River;—Randolph Dist. at Chelsea;—Rutland Dist. at Rutland;—Fairhaven Dist. at Castletou;—Marlboro Dist. at Brattleboro;—Westminster Dist. at Bellows Falls;—Windsor Dist. at Ludlow;—Hartford Dist. at Woodstock The records of each Probate District are in the custody of its Judge of Probate.

Massachusetts.

Supreme Judicial Court for the Commonwealth at Boston. Supreme Judicial Court, Superior Court, and Probate Courts:—Barnstable Co. at Barnstable;—Berkshire Co. at Pittsfield;—Bristol Co. at Taunton;—Dukes Co. at Edgartown, (see below);—Essex Co. at Salem;—Franklin Co. at Greenfield;—Hampden Co. at Springfield;—Hampshire Co. at Northampton;—Middlesex Co. at Cambridge;—Nantucket Co. at Nantucket, (see below);—Norfolk Co. at Dedham;—Plymouth Co. at Plymouth;—Suffolk Co. at Boston;—Worcester Co. at Worcester;—except that the records of the Supreme Judicial Court in cases arising in the Counties of Dukes County and Nantucket are at Taunton. Land Court at Boston.

Rhode Island.

Supreme Court at Provideuce. Superior Court:—Providence and Bristol Counties at Providence;—Kent Co. at East Greeuwich;—Washington Co. at South Kingstown;—Newport Co. at Newport. In each City and Town there is a Court having Probate jurisdiction within its limits, the Municipal Court of the City of Providence being the Probate Court for that city. In towns which have not elected a Judge of Probate the Town Councils act as Probate Courts.

Connecticut.

Supreme Court of Errors:—First Judicial Dist. at Hartford;—Second Judicial Dist. at Norwich;—Third Judicial Dist. in two places, viz:—cases from New Haven Co. at New Haven, cases from Fairfield Co. at Bridgeport. Superior Court:—Hartford Co. at Hartford;—New Haven Co. at New Haven and Waterbury;—Fairfield Co. at Bridgeport;—New London Co. at Norwich;—Litchfield Co. at Litchfield;—Middlesex Co. at Middletown;—Windham Co. at Putnam;—Tolland Co. at Tolland. Courts of Common Pleas for such Counties as have these Courts are as follows:—Hartford Co. at Hartford;—New Haven Co. at New Haven;—Fairfield Co. at Bridgeport;—New London Co. at Norwich;—Litchfield Co. at Litchfield. There are 113 Probate Districts;—84 of these Districts consist of one town only; each of the remaining Districts comprises more than one town. The records of each District are in the custody of its Judge of Probate.

STATE ELECTIONS IN NEW ENGLAND.

In all the New England States Legislatures and Governors are now elected every second year. The next elections will be in 1924. All these elections are on the Tuesday next after the first Monday in November except that in Maine, which is on the second Monday in September.

LEGISLATURES IN NEW ENGLAND.

SESSIONS COMMENCE AS FOLLOWS:

Maine. First Wednesday of January, 1923, and each alternate year.

New Hampshire. First Wednesday of January, 1923, and each alternate year.

Vermont. Wednesday after the first Monday of January, 1923, and each alternate year.

Massachusetts. First Wednesday of January, each year.

Rhode Island. First Tuesday of January, each year.

Connecticut. Wednesday after the first Monday of January, 1923, and each alternate year.

HOLIDAYS IN NEW ENGLAND.

The following days are legal Holidays. If the day falls on Sunday the day following is usually kept as a Holiday. Thanksgiving and Fast are appointed by State or National authority.

Maine. Jan. 1, Feb. 22, Apr. 19, May 30, July 4, 1st Mon. Sept., Thanksgiving and Christmas are Bank Holidays. No Courts are held on any of these days except Jan. 1 and Feb. 22, or on the days of Presidential or State Election. **New Hampshire.** Jan. 1, Feb. 22, May 30, July 4, 1st Mon. Sept., Oct. 12, Nov. Election Day, Fast, Thanksgiving and Christmas. **Vermont.** Jan. 1, Feb 22, May 30, July 4, Aug. 16, 1st Mon. Sept., Oct. 12, Thanksgiving and Christmas. **Massachusetts.** Jan. 1, Feb. 22, Apr. 19, May 30, July 4, 1st Mon. Sept., Oct. 12, Thanksgiving and Christmas. **Rhode Island.** Jan. 1, Feb. 22, 2d Fri. May, May 30, July 4, 1st Mon. Sept., Oct. 12, Nov. Election Day, Thanksgiving and Christmas. **Connecticut.** Jan. 1, Feb. 12, Feb. 22, May 30, July 4, 1st Mon. Sept., Oct. 12, Fast, Thanksgiving and Christmas.

UNITED STATES WEATHER BUREAU.

Fair Weather, Rain or Snow, and Temperature Flags. No. 1, a square white flag alone, indicates fair weather, stationary temperature. No. 2, a square blue flag alone, indicates rain or snow, stationary temperature. No. 3, a square white and blue flag (parallel bars of white and blue, the white above the blue) alone, indicates local rain or snow, stationary temperature. No. 1, with No. 4, a black triangular flag, above it, indicates fair weather, warmer; with No. 4 below it, indicates fair weather, colder. No. 2, with No. 4 above it, indicates rain or snow, warmer; No. 2, with No. 4 below it, indicates rain or snow, colder. No. 3, with No. 4 above it, indicates local rain or snow; warmer. No. 3, with No. 4 below it, indicates local rain or snow, colder. No. 5, a square white flag with a black square in the centre, indicates a cold wave.

Small Craft Warning. A red pennant indicates that moderately strong winds that will interfere with the safe operation of small craft are expected. No night display of small craft warnings is made.

Northeast Storm Warning. A red pennant *above* a square red flag with black center displayed by day, or two red lanterns, one above the other, displayed by night, indicates the approach of a storm of marked violence with winds beginning from the *northeast.*

Southeast Storm Warning. A red pennant *below* a square red flag with black center displayed by day, or one red lantern displayed by night, indicates the approach of a storm of marked violence with winds beginning from the *southeast.*

Southwest Storm Warning. A white pennant *below* a square red flag with black center displayed by day, or a white lantern *below* a red lantern displayed by night, indicates the approach of a storm of marked violence with winds beginning from the *southwest.*

Northwest Storm Warning. A white pennant *above* a square red flag with black center displayed by day, or a white lantern *above* a red lantern displayed by night, indicates the approach of a storm of marked violence with winds beginning from the *northwest.*

Hurricane, or Whole Gale Warning. Two square flags, red with black centers, one above the other, displayed by day, or two red lanterns, with a white lantern between, displayed by night, indicate the approach of a tropical hurricane, or of one of the extremely severe and dangerous storms which occasionally move across the Great Lakes and Atlantic coast.

PRESIDENT AND VICE-PRESIDENT.

President.....CALVIN COOLIDGE.....Massachusetts
Vice-President.....——.....——....

Members of the Cabinet.—*Secretary of State*, CHARLES EVANS HUGHES, New York; *Secretary of the Treasury*, ANDREW W. MELLON, Pennsylvania; *Secretary of War*, JOHN WINGATE WEEKS, Massachusetts; *Attorney General*, HARRY M. DAUGHERTY, Ohio; *Postmaster General*, HARRY S. NEW, Indiana; *Secretary of the Navy*, EDWIN DENBY, Michigan; *Secretary of the Interior*, HUBERT WORK, Colorado; *Secretary of Agriculture*, HENRY CANTWELL WALLACE, Iowa; *Secretary of Commerce*, HERBERT CLARK HOOVER, California; *Secretary of Labor*, JAMES JOHN DAVIS, Pennsylvania.

PRESIDING OFFICERS OF THE 68TH CONGRESS.

President of the Senate.....——.....
President pro tempore of the Senate.....ALBERT B. CUMMINS, Iowa
Speaker of the House of Representatives.....FREDERICK H. GILLETT, Mass.

67th Congress. 68th Congress not convened at time of going to press.

The political classification of the 68th Congress is as follows: *Senate*—Republicans, 53, Democrats, 42, Farm-Labor, 1; Total, 96. *House of Representatives*—Republicans, 223, Democrats, 206, Independent, 1, Socialist, 1, Farm-Labor, 1. Vacancies, 3; Total, 435.

The term of the 68th Congress expires March 4, 1925.

MEMBERS 68TH CONGRESS FROM NEW ENGLAND.

R—Republican. D—Democrat.

SENATORS.

Terms expire March 4th in the year following each name.

Maine.—Bert M. Fernald, R., West Poland, 1925; Frederick Hale, R., Portland, 1929. **New Hampshire.**—George Higgins Moses, R., Concord, 1927; Henry Wilder Keyes, R., Haverhill, 1925. **Vermont.**—William Paul Dillingham, R., Montpelier, 1927; Porter Hinman Dale, R., Island Pond, (nominated). **Massachusetts.**—Henry Cabot Lodge, R., Nahant, 1929; David Ignatius Walsh, D., Fitchburg, 1925. **Rhode Island.**—LeBaron Bradford Colt, R., Bristol, 1925; Peter G. Gerry, D., Warwick, 1929. **Connecticut.**—Frank Bosworth Brandegee, R., New London, 1927; George Payne McLean, R., Simsbury, 1929.

REPRESENTATIVES.

Terms of all expire March 4th, 1925.

Maine.—1st District, Carroll L. Beedy, R., Portland; 2nd District, Wallace Humphrey White, Jr., R. Lewiston; 3rd District, John Edward Nelson, R., Augusta; 4th District, Ira Greenlief Hersey, R., Houlton. **New Hampshire.**—1st District, William N. Rogers, D., Sanbornville; 2nd District, Edward H. Wason, R., Nashua. **Vermont.**—1st District, Frederick G. Fleetwood, R., Morrisville; 2nd District, Ernest W. Gibson, R., Brattleboro, (nominated). **Massachusetts.**—1st District, Allen Towner Treadway, R., Stockbridge; 2nd District, Frederick Huntington Gillett, R., Springfield; 3rd District, Calvin D. Paige, R., Southbridge; 4th District, Samuel E. Winslow, R., Worcester; 5th District, John J. Rogers, R., Lowell; 6th District, A. Piatt Andrew, R., Gloucester; 7th District, William P. Connery, Jr., D., Lynn; 8th District, Frederick William Dallinger, R., Cambridge; 9th District, Charles L. Underhill, R., Somerville; 10th District, Peter F. Tague, D., Boston; 11th District, George Holden Tinkham, R., Boston; 12th District, James A. Gallivan, D., Boston; 13th District, Robert Luce, R., Waltham; 14th District, Louis Adams Frothingham, R., Easton; 15th District, William Stedman Greene, R., Fall River; 16th District, Charles L. Gifford, R., Barnstable. **Rhode Island.**—1st District, Clark Burdick, R., Newport; 2nd District, Richard S. Aldrich, R., Warwick; 3rd District, Jeremiah E. O'Connell, D., Providence. **Connecticut.**—1st District, E. Hart Fenn, R., Wethersfield; 2nd District, Richard P. Freeman, R., New London; 3rd District, John Quillin Tilson, R., New Haven; 4th District, Schuyler Merritt, R., Stamford; 5th District, Patrick B. O'Sullivan, D., Derby.

UNITED STATES SUPREME COURT.

Chief Justice, WILLIAM HOWARD TAFT, of Ohio, Fourth Circuit; *Associate Justices*—JOSEPH MCKENNA, of California, Ninth Circuit; OLIVER WENDELL HOLMES, of Massachusetts, First Circuit; WILLIS VAN DEVANTER, of Wyoming, Eighth Circuit; JAMES C. MCREYNOLDS, of Tennessee, Fifth Circuit; LOUIS D. BRANDEIS, of Massachusetts, Second Circuit; GEORGE SUTHERLAND, of Utah, Seventh Circuit; PIERCE BUTLER, of Minnesota, Sixth Circuit; EDWARD TERRY SANFORD, of Tennessee, Third Circuit.

"HONEY MONEY."

Many of us can remember when nearly every farm home had from one to ten hives of bees and produced a considerable quantity of honey. Now beekeeping is almost entirely in the hands of specialists. This change has been effected chiefly for two reasons. First, lack of knowledge about keeping bees; second, bee diseases. We now have means of combatting the diseases so that there is now very little trouble with them.

The average production of honey according to the U. S. Census figures in New England is approximately 40 pounds per colony. This could easily be doubled by careful management of the bees, and when you consider that honey is worth from 25 to 40 cents a pound, it may be seen how profitable beekeeping may be. Besides this, New England is developing into a wonderful fruit growing region. The U. S. Department of Agriculture estimates that for every dollar's worth of honey and wax that the bees produce for their owners, they fertilize at least twenty dollars worth of fruit. In fact, very often the difference between a handsome profit in fruit growing and an entire failure lies in the matter of pollination. It has been conclusively demonstrated that hive bees are the only dependable means of pollinating, since wild bees of one kind or another vary widely in numbers according to the severity of the previous winter. The best way to get started with bees is to buy a hive of inspected bees from an extensive beekeeper. To buy bees from a neighbor who is tired of keeping bees or who has had bad luck with them, is usually a very unwise and unprofitable procedure.

Bees may also be bought in two-pound packages from southern beekeepers or in three-frame nuclei, a queen being bought with the rest of the bees in each case. Such packages of bees should be obtained as early in the spring as the flowers start blooming, say around the latter part of April or the first of May. After they come they should be shaken into a new hive with either drawn out combs or full sheets of foundation. They should be fed with a weak sugar syrup, using pure granulated sugar at the rate of a pound of sugar dissolved in 1½ pints of water. Keep on feeding the bees all the sugar that they will use until the honey flow starts the latter part of May or the first of June. The amount of honey which is obtained from a hive of bees is in direct proportion to the number of bees in the hive, and the number of bees in the hive is in almost direct proportion to the amount of food which they have. The Malthusian theory that the population increases in direct ratio to the food supply is certainly true of bees, which will not raise any young if they have little or no food and will spend all their energies in building up their hive when they have a lot of food coming in.

It is always safe to buy a swarm of bees because they never carry disease when they swarm, but you never know when they are going to swarm, so it is an uncertain way to get started in the bee business. The occupants of a hive are of three types. First, the workers which are undeveloped females and which constitute practically all the bees in the hive; secondly, the queen, of which there is only one in a hive and whose sole function is to lay eggs, The queen can lay fertilized eggs or unfertilized eggs. The fertilized eggs hatch into workers and unfertilized eggs hatch into drones. The life of a worker is from six to ten weeks during the busy season and that of a queen as much as two or three years. After about a year and a half a queen usually wears out and very often is replaced by the bees themselves. A good queen, that is a queen which has the power of laying 3000 eggs a day, is a very important factor in the upbuilding of the hive. Most beekeepers requeen their hives once a year. The third type of bees are the drones who do no work. Their sole function is to fertilize the queen bee. It is usually advisable to get rid of most of them.

One of the most important factors with which the amateur beekeeper has to contend is swarming. When the bees get overcrowded and when there are lots of young bees hatching out and standing around in the way of the old bees coming in from the field, the hive gets the swarming fever. They then start building queen cells and some nice sunny morning they decide to go off, make a new home for themselves and leave the old home to the young bees. They fly off a short distance and cluster on a tree, forming in a cone shaped mass. They stay in this cluster anywhere

from fifteen minutes to two days, as a rule not over two or three hours. They probably cluster in order to give their scouts a chance to find a home, and when they are sure of their new home they start out on a direct line toward it and nothing can stop them once they are on the way. When your bees cluster, prepare a hive for them, and cut off the limb upon which they are clustered, and carry them carefully in front of the hive and shake them off with a quick jerk, or else shake the bees into a bushel box or basket and carry them over to the hive and dump them in front of it. The bees usually accept their new home without any fuss and start to work immediately. However, to make sure, it is always well to take a frame of brood with some eggs in it out of another hive and give it to the newly hived swarm. Swarming may be prevented by never giving the bees a chance to get crowded, by always keeping enough supers on the hive, by looking through the hive every ten days, and keeping the queen cells cut out and by keeping the bees cool and well ventilated during hot weather.

Special pains must be taken to protect bees properly so that they will come through the winter in good condition. Successful wintering depends upon three factors: 1, a large number of bees in September or October; 2, sufficient stores of good honey to carry them through the winter and get them started the following spring; 3, protection from the cold so as to keep the temperature as high as possible.

The amount of honey a colony stores is directly proportional to the number of bees in the colony above 15,000. Thus a colony with 30,000 bees will probably store at least three times as much surplus honey as a colony with 20,000 bees, because it takes about 15,000 bees to keep the work of the colony going. Bees hatched during July and early August are of no use to the colony the following year because they will be worn out and dead before spring comes. 10,000 September hatched bees are worth more to a colony than 50,000 to 100,000 July hatched bees. The problem is then to make the bees rear young during the latter part of the season, and this can usually be accomplished by requeening after the honey flow is over or around the first of August. Either raise a queen yourself or buy one from a reliable queen dealer.

The second point in successful wintering is the use of good stores. Very often our fall honeys contain as much as five per cent. of indigestible material. This indigestible material collects in the bodies of the bees and causes dysentery. A colony badly affected with dysentery will soon die, and bad honey will greatly deplete the number of bees in a hive. Warm days during January and February very often give the bees a chance to fly out and cleanse themselves of this indigestible material, but in a winter like that of 1922-23 when no such flight is possible, the mortality among the bees is very high. The best way to avoid this loss is to extract the honey about September 10, and then feed each colony from 25 to 40 pounds of pure granulated sugar in a concentrated solution. The amount of stores that the colony has is also very important because it has to feed upon what honey is left in the hive and must also build up in the spring. From 50 to 75 pounds of honey is usually recommended.

The third point is sufficient protection. Bees die at a temperature below 58°. When the temperature goes to that point they form a solid cluster and start exercising the wings and legs in order to make the cluster warmer. The peculiar thing is that the colder it gets outside, the warmer they make it inside the cluster, thus literally burning themselves out and unnecessarily consuming large quantities of stores. Another unfavorable result of excessive high cluster temperatures is that the queen is likely to start laying and disrupt the organization of the hive by starting brood from four to six weeks before it is time to start it.

The best way to winter bees is to put them in a well ventilated dry cellar with a temperature around 45° to 46°, or to pack them in a box outdoors with from eight to twelve inches of good insulation around them, and a small passage way leading from the hive itself to out of doors so as to give the bees a chance to fly outdoors whenever the weather is warm enough for them to break cluster. This packing case must, of course, be wind proof and water tight. The best material to use for the packing is dry sawdust, dry leaves or planer shavings. Do not use excelsior, hay or straw.

POSTAL RATES.—DOMESTIC.

First Class Matter may be forwarded from one post office to another without additional postage, but other matter must have new postage.

All matter except Parcel Post may be **registered**; fee, in addition to regular postage fully prepaid, **ten and twenty cents**, according to indemnity for loss.

LETTERS AND POSTAL CARDS.—FIRST CLASS.

Letters or other matter wholly or partly in writing or typewriting (except as hereinafter provided), and all matter sealed against inspection (except original packages of proprietary articles in simplest mercantile form and seeds etc. in transparent envelopes), to be sent beyond the office where deposited, or for local delivery when mailed in a letter-carrier post-office or rural delivery, limit of weight same as zones—each ounce or fraction .02

Drop or local letters—when mailed at letter-carrier post offices, including village delivery by carrier, and at post offices where the persons addressed are served by rural carriers, per ounce or fraction 02

When mailed at post offices where no letter-carrier service is rendered, per ounce or fraction 01

Special Delivery Letters, if ordinary stamps are used mail must be marked "Special Delivery"—in addition to regular postage 10

Postal Cards and Post Cards 01

Postal Cards with paid reply 02

NEWSPAPERS AND PERIODICALS.—SECOND CLASS.

Second Class Matter comprises publications that have been entered as such at Post Office. No limit of Weight.

Second Class Matter when posted by others than Publishers or News Agents, each four ounces or fraction. 01

MISCELLANEOUS PRINTED MATTER, ETC.—THIRD CLASS.

Pamphlets, circulars, occasional publications, photographs, proof sheets or corrected proofs and manuscript copy accompanying the same, and all matter on paper or cardboard, except books, in which the printing exceeds the blank space, with no writing except as shown in next paragraph, and not exceeding four pounds in weight, each two ounces or fraction 01

A printed circular may have the date, the name of the addressee and of the sender inserted in writing, and a simple dedication or inscription may be written on the fly-leaf or cover of a book or other article of printed matter.

MERCHANDISE.—PARCEL POST.—FOURTH CLASS.

Embraces miscellaneous printed matter weighing more than 4 pounds, the articles named below and all other matter not included in the other classes and not liable to damage the mails or injure any person and not of character perishable before delivery.

Parcels not exceeding 4 oz. in weight, regardless of distance, each oz. or fraction 01

Books, printed, also seeds, cuttings, bulbs, roots and scions, not over 8 oz. in weight, regardless of distance, each two ounces or fraction 01

Parcels and Books, Etc., weighing respectively more than 4 oz. and 8 oz. as specified above:—Five cents for first pound and 1 cent for each additional two pounds when for local delivery at office of mailing, and 5 cents for first pound and 1 cent for each additional pound when for delivery at other places in first and second Zones. For points in third Zone, first pound 6 cents, each additional pound 2 cents; in fourth Zone, first pound 7 cents, each additional pound 4 cents; in fifth Zone, first pound 8 cents, each additional pound 6 cents; in sixth Zone, first pound 9 cents, each additional pound 8 cents; in seventh Zone, first pound 11 cents, each additional pound 10 cents; in eighth Zone, first pound 12 cents, each additional pound 12 cents. The limit of size for parcels is 84 inches in length and girth combined. The limit of weight is 70 pounds to points in the first, second and third Zones and 50 pounds to points in the other Zones. The mailing post office will give receipt to sender of an ordinary parcel on payment of one cent. Information will be given at Post Office regarding Zones, Official Parcel Post Guide, Maps, etc.

SEALED FOURTH CLASS MAIL.

Parcels of Fourth Class matter may now be mailed sealed at the Fourth Class rates of postage under the provisions of amended paragraph 5, Section 469, of Postal Laws and Regulations. A label showing the contents ("Merchandise—Fourth Class Mail" will suffice), the name and address of the sender, etc., must be *printed* to facilitate identification. Hand stamping or writing will not meet the requirements. This printing may be done on gummed paper tape when required.

POSTAL MONEY ORDERS.

LIMIT OF A SINGLE ORDER, $100.00.

Not exceeding $2.50	.03	Exc'g $30.00 and not exc'g $40.00	.15
Exc'g $2.50 and not exc'g $5.00	.05	Exc'g $40.00 and not exc'g $50.00	.18
Exc'g $5.00 and not exc'g $10.00	.08	Exc'g $50.00 and not exc'g $60.00	.20
Exc'g $10.00 and not exc'g $20.00	.10	Exc'g $60.00 and not exc'g $75.00	.25
Exc'g $20.00 and not exc'g $30.00	.12	Exc'g $75.00 and not exc'g $100.00	.30

POSTAL RATES.—FOREIGN.

To the Countries and Colonies in the Postal Union. Prepayment optional, except for business correspondence and registered articles, but on Printed Matter, Commercial Papers and Samples not of a business character postage must be at least partially prepaid. All matter may be **registered** except as stated under "International Parcel Post;" registration fee **ten cents.** Limit for indemnity for loss of registered mail, except on Parcel Post to most countries for which there is no indemnity, $10.00.

Letters, 5 cents for the first ounce, and **3 cents** for each additional ounce or fraction except that the rate to **Argentina, Bahamas, Bermuda, Bolivia, Brazil, British Guiana, British Honduras, Caicos Island, Canada, Cayman Islands, Colombia, Costa Rica, Dominican Republic, Dutch West Indies** (see note), **Ecuador, England, Guatemala, Haiti, Honduras (Republic), Ireland, Jamaica, Leeward Islands** (see note), **Mexico, Newfoundland, Netherlands West Indies** (see note), **New Zealand, Nicaragua, Panama, Paraguay, Peru, Salvador El, Samoa Western (British), Scotland, Spain and Colonies** (see note), **Turks Islands, Uruguay. Wales, Windward Islands** (see note), **is 2 cents per ounce** or fraction. Limit of weight, 11 pounds.

NOTE.—Leeward Islands: Antigua, Aguilla, Barbuda, Dominica-Montserrat, Nevis, Redonda, Saint Kitts and Virgin Islands (British), Netherland (Dutch). West Indies: Aruba, Bonaire, Curacao, Saba, Saint Eustatius, and the Dutch part of St. Martins. Spanish Colonies: Balearic Islands, Canary Islands and Morocco (Ceuta, Melilla and Tangier only) Windward Islands: Grenada, Grenadines, Saint Lucia and Saint Vincent.

Postal Cards, 2 cents. Postal Cards with paid reply, 4 cents. Private Mailing Cards 2 cents.

Printed Matter, 1 cent for each two ounces or fraction. Limit of weight 4 lbs. 6 oz.

Commercial Papers, (Papers of Legal Procedure, Manuscripts of Works, etc.), the same as for Printed Matter, but the lowest charge is **5 cents.** Limit of weight 4 lbs. 6 oz.

Samples of Merchandise, the same as for Printed Matter, but the lowest charge is **2 cents.** Limit of weight 18 ounces; of size 12 in. x 8 in. x 4 in.; rolls 12 in. x 6 in.

To Canada, Postage and Limit of Weight for Letters, the same as in the Domestic mails. Printed Matter, Commercial Papers and Samples of Merchandise, Postal Union rates. Merchandise, except Samples, is subject to Domestic Parcel Post Regulations 8th zone, with a limit of 11 lbs., greatest length 3½ ft., and greatest length and girth combined, 6 ft. Parcels may be insured, but not registered, unless they are sealed and letter postage is paid. Postage rate on packages weighing not over 4 oz. 1 cent per oz.; over 4 oz. 12 cents per pound or fraction. All matter must be **fully prepaid** except Letters, which must be prepaid at least 2 cents.

To Cuba and Republic of Panama. All mail matter is subject to Domestic rates and conditions except that Printed matter, Samples of Merchandise and Commercial Papers are admissible at Postal Union rates. Limit of weight, 4 lbs. 6 oz., except for Second Class matter and single volumes of printed books. Merchandise to Panama by Domestic Parcel Post is limited to 20 lbs., rate 12 cents per pound; may also be sent by International Parcel Post; requires a customs declaration, whether sent Domestic or International service.

To Mexico. First, Second, and Third Class Postage and Limit of Weight same as in U. S., except that Commercial Papers and Samples of Merchandise are admissable at Postal Union rates. Merchandise may be sent at Domestic rates up to 4 lbs. 6 oz., rate 12 cents per lb.; but best be sent by International Parcel Post. In all cases Merchandise must be accompanied by customs declaration and must not be sealed.

INTERNATIONAL PARCEL POST.

Merchandise may be mailed by Parcel Post to the Countries and Colonies, extensive lists of which may be seen at post offices at the following rates, viz.: not exceeding one pound, 12 cents; each additional pound, or fraction, 12 cents; limit of weight, 11 pounds to 22 pounds; consult Post Office or Postal Guide. Liquids, confections, pastes, &c., are excluded from Parcel Post mails to a few foreign countries; list at Post Office.

Packages require customs declarations, blanks for which will be furnished at post office. Packages may be **registered** to many countries, but to many others it is not permitted. Consult Post Office or Postal Guide.

For list of foreign countries having Parcel Post service, with the restrictions and details relating to it, consult U.S. Postal Guide or nearest Post Office.

POSTAL MONEY ORDERS.—INTERNATIONAL.

LIMIT OF A SINGLE ORDER, $100.00.

The rates to certain countries and colonies are the same as Domestic; to others 10 cents for $10.00 and 10 cents for each additional $10.00 up to $100.00. In all cases a part of any sum requires the rate of full sum. Lists of countries to which each system of rates applies may be obtained at post office.

COLLEGES, PROFESSIONAL AND NORMAL SCHOOLS IN NEW ENGLAND.

Maine.

BATES COLLEGE, Lewiston; BOWDOIN COLLEGE, including Medical School, Brunswick; COLBY COLLEGE, Waterville; STATE NORMAL SCHOOLS at Castine, Farmington, Fort Kent, Gorham, Lewiston, Machias and Presque Isle; THEOLOGICAL SEMINARY, (Orthodox Cong.) Bangor; UNIVERSITY OF MAINE, Orono, including Agricultural, Engineering, Law, Liberal and Pharmacy courses; Co-educational.

New Hampshire.

DARTMOUTH COLLEGE, Hanover, including Tuck School of Administration and Finance and Thayer School of Civil Engineering; NEW HAMPSHIRE COLLEGE OF AGRICULTURE AND THE MECHANIC ARTS, Durham; ST. ANSELM'S COLLEGE, Manchester; STATE NORMAL SCHOOLS at Keene and Plymouth.

Vermont.

MIDDLEBURY COLLEGE, Middlebury; NORWICH UNIVERSITY, Northfield; STATE NORMAL SCHOOLS at Castleton and Johnson. ST. MICHAEL'S COLLEGE, Winooski; STATE SCHOOL OF AGRICULTURE, Randolph; UNIVERSITY OF VERMONT, Burlington, including Agricultural, Classical, Commercial, Engineering, Home Economics, Medical and Teaching Departments.

Massachusetts.

AMHERST COLLEGE, Amherst; ANDOVER THEOLOGICAL SEMINARY, Cambridge; BOSTON COLLEGE, Boston; BOSTON NORMAL SCHOOL, Boston; BOSTON UNIVERSITY, Boston, including College of Liberal Arts, Graduate School of Arts and Sciences, Law, Medical (Homoe.), Theological (Methodist) Schools; CLARK UNIVERSITY, Worcester, including College; COLLEGE OF THE HOLY CROSS, Worcester; COLLEGE OF PHYSICIANS AND SURGEONS, Boston; EMMANUEL COLLEGE, Boston; EPISCOPAL THEOLOGICAL SCHOOL, Cambridge; HARVARD UNIVERSITY, Cambridge, including Harvard College, Graduate School of Arts and Sciences, Graduate School of Applied Science, Graduate School of Business Administration, Bussey Institution of Applied Biology, Dental, Divinity, Law and Medical Schools; INTERNATIONAL Y. M. C. A. COLLEGE, Springfield; JACKSON COLLEGE, Medford, (Women); LOWELL TEXTILE SCHOOL, Lowell; MASSACHUSETTS AGRICULTURAL COLLEGE, Amherst; MASSACHUSETTS COLLEGE OF OSTEOPATHY, Boston; MASSACHUSETTS COLLEGE OF PHARMACY, Boston; MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge; MASSACHUSETTS NORMAL ART SCHOOL, Boston; MT. HOLYOKE COLLEGE, So. Hadley, (Women); NEW CHURCH THEOLOGICAL SCHOOL, Cambridge; NEWTON THEOLOGICAL INSTITUTION, Newton Centre, (Baptist); NORTHEASTERN COLLEGE, Boston; ST. JOHNS' COLLEGE, Danvers; STATE NORMAL SCHOOLS at Bridgewater, Fitchburg, Framingham, Hyannis, Lowell, North Adams, Salem, Westfield and Worcester; RADCLIFFE COLLEGE, Cambridge, (Women); SIMMONS COLLEGE, Boston, (Women); SMITH COLLEGE, Northampton, (Women); ST. JOHN'S ECCLESIASTICAL SEMINARY, Brighton; TUFTS COLLEGE, Medford, including Dental, Divinity, (Universalist), Engineering and Medical Schools; WELLESLEY COLLEGE, Wellesley, (Women); WHEATON COLLEGE, Norton, (Women); WILLIAMS COLLEGE, Williamstown; WORCESTER POLYTECHNIC INSTITUTE, Worcester.

Rhode Island.

BROWN UNIVERSITY, Providence, including The Women's College; PROVIDENCE COLLEGE, Providence; RHODE ISLAND STATE COLLEGE, Kingston; RHODE ISLAND STATE NORMAL SCHOOL, Providence.

Connecticut.

BERKELEY DIVINITY SCHOOL, Middletown, (Episcopal); CITY NORMAL SCHOOL, Bridgeport; CONNECTICUT AGRICULTURAL COLLEGE, Storrs; CONNECTICUT COLLEGE FOR WOMEN, New London; HARTFORD SEMINARY FOUNDATION, Hartford, (Interdenominational); HARTFORD THEOLOGICAL SEMINARY. Hartford, (Ortho. Cong.); STATE NORMAL SCHOOLS at Danbury, New Britain, New Haven and Willimantic; TRINITY COLLEGE, Hartford; WESLEYAN UNIVERSITY, Middletown; YALE UNIVERSITY, New Haven, including Academic, Fine Arts, Forestry, Law, Medical, Music, Scientific and Theological Departments.

MOTOR TAXICABS IN BOSTON.

The maximum prices of Motor Taxicabs (using Taximeters) from point to point within the City limits are:—First half mile or fraction thereof, for one person, **40 cents**; each quarter mile thereafter, **10 cents**; each additional person for the whole journey, **20 cents**.

Waiting time shall include all time during which the vehicle is not in motion, beginning nine minutes after its arrival at the place to which it has been called, or, if engaged in the street or at a stand, beginning nine minutes after the time of such engagement. A charge of **10 cents** for each three minutes may be made.

No charge shall be made for a distance less than one mile traversed by a vehicle sent in response to a call, but for a greater distance a charge of **20 cents** a mile may be made for each mile or fraction of a mile in excess of the first mile.

When a vehicle is dismissed at a point more than two miles distant from the place at which it was engaged or from the place in which it was when called, a charge of **20 cents** a mile may be made for each mile or fraction of a mile in excess of such two miles.

Hand baggage may be carried by passengers **without charge.**

Ferry tolls will be paid by passengers.

GARDEN HINTS.

Rotation in the home garden is a very important factor in keeping down insects, diseases and weeds and in keeping up the fertility of the soil. A very excellent way of rotating the land is to take an acre of level land and put the permanent crops, such as rhubarb, asparagus, small fruits, horse radish, and the hot beds in the center and have the garden first on one side, and then on the other, planting clover on the side which is not used for vegetables.

In planting your home garden, why not put in some small fruits? A few grape vines, 200 strawberry plants, 25 raspberries, and 25 blackberries, will furnish a sufficient supply for a fair sized family for canning as well as for table use. While cultivating the garden these small fruits may be cultivated at the same time, and in this way handled with a minimum of hand labor.

Asparagus is one of the most welcomed of our early vegetables and is easily grown. From 20 to 30 plants is enough for table use for the average family, but will not furnish any for canning. Fairly rich, sandy loam is the best soil for asparagus. Plant in April or early May in trenches six inches below the surface of the ground. The Washington variety is preferred because it is resistent to disease. Do not cut until the third year, and then only until about the first of June. After the third season it may be cut until July. It should be fertilized with well rotted manure.

Root vegetables may be kept in a pit for early spring use. This pit should be located in a well drained place, should be a foot and a half to two feet deep and lined with six inches or so of marsh hay. Put a cover of six inches or so of marsh hay on the vegetables and from six to eight inches of soil over the hay. An additional covering of hay will protect the vegetables from all danger of frost. They should be taken out of the pit just as early in spring as the ground thaws out.

Cabbage may be kept for spring use by pulling it, roots and all, and setting it in a shallow trench, heads down and roots up, three side by side with two on top. The trench may be made as long as desired. Cover over the cabbage with six inches of marsh hay and put a covering of six to eight inches of soil on top of the hay, covering every bit of the cabbage plant.

During dry years the garden suffers more from lack of moisture than from any other one cause. Keeping the soil constantly cultivated, adding large quantities of barnyard manure to the soil, are excellent ways of keeping up the moisture supply. If you wish to irrigate the garden the best way to do it is to use an overhead sprinkling device which may be installed in the garden either permanently or temporarily and will not interfere with cultivation. However, this system is rather expensive and a water pressure is necessary.

The home gardener usually has trouble in growing onions. However, onions may be grown from sets in most any kind of a soil if they are planted early enough and cultivated carefully. Sets of known varieties, such as Yellow Globe Danvers, should be planted, and it is easy enough to grow your own by sowing the seed about the middle of May rather thick so that the onions do not have space to grow large.

If you have a rich, moist soil in your garden you can grow celery. Plant about the middle of June. Cultivate often and mulch with manure or give it a little nitrate of soda once every two weeks, and you will have no trouble in growing good celery. The best varieties are Golden Self-Blanching, Easy Blanching, Boston Market, and Winter Queen. The former two are blanched more easily than the latter two.

The Egyptian or Tree onion produces little bulblets instead of seed, which should be planted about August 15th. They will be ready to harvest as green onions or scullions the following May and are much earlier than any other type of onions. If you like early green onions, why not plant some in your permanent garden?

The leafy vegetables are important health givers, and the best source of minerals such as iron, calcium, sulphur, etc. Plant such a variety of them that the supply will endure throughout the year. There are many to choose from:—Spinach, Swiss chard, beet greens, dandelions, mustard, endive, kale, garden cress, lettuce and celery.

HOUSEHOLD HINTS.

A very convenient removable holder cover is very easily made as follows : Take a piece of cloth three times as long as wide, the width being the desired size of the holder. Hem both ends with narrow hem. Fold over the ends on to the middle, making a square (of three thicknesses) wrong side of hem up. Stitch through the three thicknesses on both of the cut sides. Turn the first pocket so formed and insert a pad. Turn the other pocket over the first, so as to completely inclose the pad. This holder has the advantage of never losing its pad, and it also has a pocket into which the hand may be slipped to protect the back of the hand from the heat of the oven.

Cornmeal mush will hold together better for frying if two tablespoonsful of flour are used in the making to each cup of cornmeal. Try molding it for frying in water glasses or baking powder tins. The small round slices are very easily handled and are very attractive.

To clean hair brushes, put one tablespoon of ammonia into one quart of water and dip up and down until clean.

Soak corn cobs in kerosene to use for fire lighters. Three cobs should be put into a can of kerosene each morning when the three are taken out to start the fire.

Flowers may be kept very fresh overnight and wilted ones will sometimes revive if they are put into a pasteboard box, sprinkled generously with water and covered with wet paper. Put the cover on the box and put it in a cool place.

Equal parts of ammonia and turpentine will take paint out of clothing no matter how dry or hard it may be. Saturate the spot two or three times, then wash out with soap suds.

Milk or cream which is slightly turned may be sweetened by adding a little baking soda. Stir in a very little at a time and let it stand a few minutes before tasting or adding more. If milk to be heated is doubtful, this treatment will insure boiling without curdling.

A piece of zinc put on the live coals in a stove will clean out the stove pipe.

Wax paper which can now be bought in convenient sized sheets in rolls may be used to cover unused portions of grapefruit or melons to retain their flavor and freshness. The jars of salad dressing will not dry out as readily if covered with waxed paper. Strong flavored food will not scent the refrigerator if wrapped in wax paper. Wax paper put between layers of cookies in the cookie jar keeps them fresher and more attractive.

A box of rubber bands should be conveniently placed in the kitchen. They are valuable for keeping covers on cartons; wax paper in place over glassss or bowls of food; a few slipped over bottles or jars when packing will protect them from hitting together and breaking. A discarded inner tube of an automobile tire furnishes excellent rubber bands of a convenient size by cutting off strips of the round tube with the scissors. These can be cut off as needed or cut off and added to the box of smaller sizes.

Keep a small spotlight handy in the kitchen. It saves much difficulty in looking into the back of the oven, into dark corners, and down drains.

Why not fasten the ironing board to the wall with a pair of hinges? Use hinges also to attach a leg to the free end of the board, which can then easily be folded up out of the way.

When packing dresses in a suitcase or trunk for traveling, place sheets of tissue paper or newspaper between the folds. These will not only prevent wrinkles but will absorb any dampness that may be in the air.

Keep a sheet of asbestos on the shelf where flatirons are kept. They can then be put away more quickly without danger to the shelf.

It is surprising how much more room there is in the china cupboard and how much less breakage there is when cups and small pitchers are hung on cup hooks from the under side of the shelf above.

When bringing in vegetables from the garden, wash off the first coat of dirt on the grass outside either with the hose or with a pail of water thrown over them. This saves time both in the washing and in the cleaning up.

If you took a knife and sliced it through

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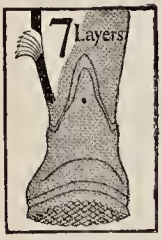

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Retail stores are located in all the cities of the United States and in all the larger cities of the world.

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AN old-time West Indian molasses, such as all New England likes. Made from RIPENED cane. No corn syrup. No sulphur.

Has baking qualities not found in ordinary molasses, which make delightful results sure. Less is needed for sweetening, for it is fully 65% sugar.

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It is a great convenience in the home to be able to do away with the old-style jug and have your molasses in these up-to-date cans — 3 sizes to suit all needs.

This has been prepared for discerning New England housewives, who know good molasses.

For the table, for cooking and baking, and for the children, Grandma's Molasses is decidedly the best.

Give it a try—ask for Grandma's at any good grocers. If he doesn't carry it, write us at Dept. O.F.A.

Write Dept. O.F.A. for recipe folder.

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Good Bread

that is made at home sharpens the appetite, appeases the hunger, and nourishes the body.

New England Housewives

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reveals to the new user wonderful possibilities in bread-making. It is America's highest grade. *Never Bleached.* Has the real wheat taste.

Always use King Arthur Flour

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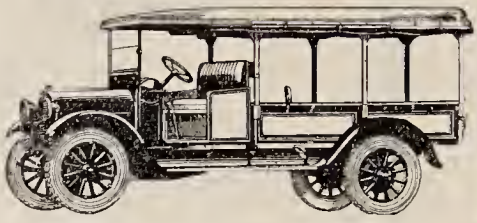
SPEED WAGON

REO

Efficient Equipment for New England Farms



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Ability to go anywhere with its load and to get there quickly is an important factor. Ability to work **every working day** with practically no time lost for repairs is another. Economy and efficiency are combined in the Speed Wagon. A Reo will work better and last longer than any similar truck you can buy.

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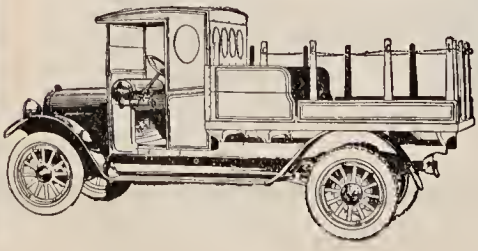

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